HISTORIC FURNISHING STUDY
PRIMARY DEPARTMENT OF THE WEST BRANCH SCHOOL

AND

JESSE HOOVER'S BLACKSMITH AND WAGON SHOP
HERBERT HOOVER NATIONAL HISTORIC SITE
WEST BRANCH, IOWA

Prepared by
Edwin C. Bearss

DENVER SERVICE CENTER
HISTORIC PRESERVATION TEAM
NATIONAL PARK SERVICE
UNITED STATES DEPARTMENT OF THE INTERIOR
DENVER, COLORADO

December 1973
TABLE OF CONTENTS

FOREWORD ....................................................... vii

PART ONE: WEST BRANCH SCHOOL--PRIMARY DEPARTMENT ........ 1

I. FURNISHING STUDY WEST BRANCH SCHOOL--PRIMARY DEPARTMENT ........................................... 3

II. THE PRIMARY DEPARTMENT DURING THE HOOVER YEARS .... 5
   A. Tad Hoover's Recollections ............................... 5
   B. Herbert Hoover's Years in the West Branch School ........ 6
      1. His First Year ........................................... 6
      2. His Second Year ......................................... 8
      3. Miss Chandler Recalls the Little One-Room Schoolhouse . 9
      4. His Third Year ......................................... 9
      5. His Fourth Year ....................................... 10

III. FURNISHINGS AND FIXTURES FOUND IN THE SCHOOLHOUSE ...................................................... 13
    A. A Few Generalizations ................................... 13
    B. Blackboards ............................................. 13
    C. Platform (Rostrum) ...................................... 15
    D. Heating the Building .................................... 16
       1. The Chimney ........................................... 16
       2. The Stove .............................................. 16
       3. Fuel .................................................. 17
       4. Sand Box .............................................. 18
    E. Furniture ............................................... 18
       1. Double-Desks and Seats ............................... 18
       2. Recitation Benches ................................... 19
       3. Teacher's Table and Chair ........................... 20
       4. Tables or Benches for Water Pail and Lunch Buckets . 20
       5. Disbursements for Furniture by the West Branch and Springdale Schools in the Period 1867-1885 ... 20
    F. Hooks for Coats, Etc. .................................. 21
    G. Curtains ............................................... 21
H. Miscellaneous Fixtures ...... 22
  1. Clock .................. 22
  2. Potted Plants and Pictures ..... 22

IV. SUPPLIES AND EQUIPMENT .................. 23
  A. Writing and Drawing Materials .... 23
     1. Slates and Slate Pencils ....... 23
     2. Crayons, Erasers, and Chalk .... 23
     4. Pen and Ink ................ 24
  B. Lunch Buckets (Pails) ........... 24
  C. Janitorial Supplies and Labor .... 25
  D. Water Bucket, Wash Basin, and Dipper (Cup) ........ 27
  E. Office Supplies ................ 27

V. CURRICULUM, BOOKS, TEACHING METHODS, ETC. .......... 29
  A. Course of Study for the West Branch School--Primary Department .... 29
  B. Text Books and Equipment Used in Primary Department .......... 31
  C. Autograph Albums and Scrapbooks .......... 32
  D. Teaching Methods ................ 33
     1. In the Primary Department .... 33
  E. Special Programs ................ 38
     1. On Fridays ................. 38
     2. At the End of the Year .... 40
  F. Fun and Games ................ 40

VI. GROUNDS .................. 45
  A. Picket Fence ............... 45
  B. Privies ................ 45
  C. Pump ................ 45

PART TWO: JESSE HOOVER'S BLACKSMITH SHOP ............ 47

I. FURNISHING STUDY JESSE HOOVER'S BLACKSMITH SHOP . 49

II. EQUIPMENT, FIXTURES, AND FURNISHINGS .... 51
  A. Jesse Hoover's Forge .... 51
     1. Location ............... 51
     2. The Hearth .......... 51
     3. The Tuyère ......... 52
     4. Working Space .... 52
     5. Tool Racks ....... 52
     6. Pokers, Shovels, and Rakes .... 53
B. The Bellows ........................................ 53
   1. Location ........................................ 53
   2. Description .................................... 53
   3. Operation ...................................... 55
C. Jesse Hoover's Anvil ................................. 55
   1. Location ........................................ 55
   2. Description .................................... 56
   3. Mounting the Anvil ............................. 56
   4. The Anvil Block .................................. 57
D. Water Tub and Tempering Bath ...................... 57
E. Mandrel ............................................. 58
F. Grindstone .......................................... 58
G. Box on Which Boys Sat ............................. 58
H. Workbench and Vise ................................ 59
I. Tool Bench .......................................... 59
J. Coal Shed and Access Thereto .................... 60
K. Storage Area for Iron Bars ....................... 61

III. TOOLS LIKELY TO HAVE BEEN FOUND IN THE BLACKSMITH SHOP .......... 63
   A. Background ...................................... 63
   B. Hammers .......................................... 63
   C. Tongs ............................................. 64
   D. Anvil Tools ...................................... 66
      1. "Hardie" or "Cutter" ........................... 66
      2. Fullers and Flatters ......................... 66
      3. Swages ......................................... 67
      4. Other Anvil Tools ............................. 68
   E. Chisels and Punches .............................. 68
   F. Measuring Tools ................................ 69
   G. Bench Tools ...................................... 69
      1. Files ......................................... 69
      2. Pliers .......................................... 70
      3. Wedges ......................................... 70
      4. Blacksmiths' Plug (Taper Tap) .............. 70
      5. Clippers ....................................... 70
      6. Hacksaws ....................................... 70
   H. Horseshoeing .................................... 70
      1. Location ....................................... 70
      2. Tools Used .................................... 71
         a. Farrier's Hammers .......................... 71
         b. Tongs ........................................ 71
         c. Stamps and Creasers ....................... 71
         d. Rasps ........................................ 72
         e. Blacksmith's Pincers ...................... 72
f. Hoof Parer .......... 72

h. Buffer ............ 72

i. Punches and Pitchels 73

j. Cutting Nippers .... 73

I. Tools Jesse Hoover may have Owned .... 73

1. Post Drill ........ 73

2. Bench Shears and Shear Cutters ... 73

PART THREE: JESSE HOOVER'S WAGON SHOP ............ 75

I. FURNISHING STUDY JESSE HOOVER'S WAGON SHOP .... 77

A. Location ........ 77

B. Recollections of ........ 77

C. Work Bench .......... 78

D. Tool Rack ........ 78

E. Major Tools ........ 78

1. Vise ..... 78

2. Tire-Bender Press ... 79

3. Tire Upsetter .... 79

F. Other Tools ........ 79

1. Tools for Replacing a Fellow .... 79

2. Bench Tools ... 79

3. Measuring Tools .... 79

4. Millstone and Cooling Trough .... 80

5. Foot-Treadle Lathe ... 80

APPENDIX A--RULES AND REGULATIONS FOR THE WEST BRANCH SCHOOL. 81

BIBLIOGRAPHY ............. 89

ILLUSTRATION ............ 95
FOREWORD

This report has been prepared to satisfy the research needs as enumerated by Historical Resource Study Proposal HEHO-H-14, Furnishing Studies Jesse Hoover Blacksmith and Wagon Shop and the Primary Department of the West Branch School. As outlined in the Memorandum of Agreement, dated September 1, 1972, the subject studies are designed to satisfy the requirements of Parts C and D of the Furnishing Studies for the subject structures and to provide information useful to the museum specialists in preparing Furnishing Plans.

A number of persons assisted in the preparation of this report. Particular thanks are due: Superintendent Dave L. Hieb, Chief of Interpretation and Resource Management Wallace Elms, Assistant Chief of Interpretation and Resource Management Robert Taylor, Administrative Assistant Judy Maske, and Clerk-typist Vivian Kaefring of Herbert Hoover National Historic Site for their encouragement and assistance in and around West Branch. Director Thomas T. Thalken, Assistant Director Robert R. Wood, Acting Librarian Mildred Mather, Clerk-typist Barbara Ehnen, Senior Archivist Dwight Miller, and Audiovisual Archivist J. Patrick Wildenburg of the Herbert Hoover Presidential Library called to my attention various items of interest entrusted to their custody.

Superintendent Dr. Donald Larson of the West Branch Community Schools made available files of the West Branch and Springdale schools for the years 1869-1885. The staff of the State Historical Society of Iowa, in Iowa City, called to my attention a number of interesting items in their manuscript collection. Glenn Brown and William Wagner shared their information on the structural history of the schoolhouse, while the latter provided me with a set of measured drawings he had prepared of the building.

Archeologist Adrian D. Anderson made available a copy of his preliminary report on his excavation of Jesse Hoover's Blacksmith Shop and spent several hours discussing what he found and did not find. This was of great assistance to me in the preparation of this report.

vii
My colleagues Dave Hanson and Dr. Dave Wallace read the manuscript and made valuable suggestions, while Linda Wedel skillfully typed the manuscript.
PART ONE:
WEST BRANCH SCHOOL--PRIMARY DEPARTMENT.
I. FURNISHING STUDY WEST BRANCH SCHOOL--PRIMARY DEPARTMENT

Herbert Hoover spent three years (1879-1882) in the primary department of the West Branch School. Although the documentation is inconclusive, there is good evidence that this structure continued to house the primary department during at least the first two of these years. This study is accordingly focused on determining the furnishings found in the primary department during these years.

The structural history and significance of the school have been detailed in E.C. Bearss, The Hoover Houses and Community Structures (Denver, 1972), pp. 134-142. To secure information on furnishings likely to have been found in the primary department during these years manuscript records of the West Branch Independent School District were examined. Fires in 1892 and 1904 had destroyed many of these files, so records of the Springdale, Fairview, and Henry County schools, which were comparable, were studied to secure information pertaining to the type of furnishings found in these schools in the years 1872-1885. These schools, especially the one at Springdale, would differ very little from the one attended by Herbert Hoover.

Published journals and reminiscences by students and teachers describing their experiences in small-town Iowa schools in the 1870's and 80's were read, and data regarding furnishings and teaching practices extracted. Information gleaned by Historical Architect William Wagner's structural investigation of the fabric of the schoolhouse also cast light on the furnishings.

These diverse sources provided the grist for this furnishing study.
II. THE PRIMARY DEPARTMENT DURING THE HOOVER YEARS

A. Tad Hoover's Recollections

The Old West Branch Schoolhouse, after being relocated in the spring of 1870 adjacent to and northwest of the new schoolhouse, was outfitted and used by the primary department. It was still being used for this purpose in 1876, when Jesse Hoover enrolled his firstborn. Many years later, Theodore Hoover recalled, his father "took me by the hand and went with me as I started to school in the old district school house on top of the hill above the Friend's meeting-house. A large new school house with several rooms had just been completed."2

The old building was used for the "very small children of the primary grade." Tad's teacher was Mary Townsend, and if she failed to arouse in me that enthusiastic love which I felt for some of the later ones, she at any rate holds the highest place in reverence; she was very dignified and kind. I remember learning here the A B C, and reading about the trout caught in the brook.3

Tad Hoover was in the third year of high school when he left West Branch. He recalled:


3. Ibid.
I was considerably in advance of those of my age, learning out of books being an easy task. My next teacher that I remember after Mary Townsend was Miss [M.E.] Brey; she was plump and pretty and I liked her very much. After Miss Brey was Sadie Vore, pretty, vivacious and very witty. I loved her the best of all, until one day when she stopped me on the road to my great-grandmother's, and kissed me in the broad light of day before several men of my close acquaintance. It was many a long year before I forgave her her perfidy in thus humiliating me. Miss Bradford was the next teacher, but I did not like her, and I was, I fancy, a sore trial to her. She was, however, without doubt the most capable of all my teachers, by education and inclination, and I could have profited most through her if I had not been perverse.4

B. Herbert Hoover's Years in the West Branch School

1. His First Year

Herbert Hoover, one month after his fifth birthday, was enrolled by his parents in C Grade of the primary department of the West Branch School. This was in September 1879. The school at this time was divided into four departments--primary, intermediate, grammar, and high school. Classes in the first three departments were designated as A, B, and C Grades, while those in high school were listed as First-, Second-, and Third-Year. The principal, in addition to his administrative duties, taught the high school classes.5

4. Ibid., p. 28.

5. The West Branch Consolidated Schools: Its Beginning, Growth, Characteristics and Alumni Record (West Branch, 1935), not paginated.
School opened on Monday, September 15, with Alfred Wood principal, and the teachers Miss Jennie Pearson (grammar), Miss M.E. Brey (intermediate), and Miss Lottie Kalb (primary). Enrollment in the four departments was 157.6

The first term ended on Friday, November 7. In the 1870's and 80's, the school year at West Branch was divided into three terms. The fall term began on the second Monday of September and continued for eight weeks; the winter term began on the third Monday of November and continued for 16 weeks; and the spring term commenced on the second Monday of April and continued for ten weeks. It was so arranged that there would be vacations of two weeks between terms.7

Following a two-week vacation, the winter term commenced on Monday, November 24, with an enrollment of 189.8 Bertie, as Herbert was called at school and at home, finished the spring term in the last week of May and was promoted. Neither the principal nor teachers would be returning to the West Branch School in the autumn. It was reported on June 3, 1880, that Miss Brey, after teaching six years, and Miss Kalb, after three years, had returned to their homes in Denison. "Both ladies would have been rehired had they been willing to remain; but although they regretted leaving school both felt that they had enough of teaching for the present." They had been excellent teachers, and both patrons and pupils felt that the school had "met with great loss and that their places will be hard to fill."9

6. West Branch Local Record, Sept. 11 & 18, 1879.

7. Ibid., Nov. 6, 1879; West Branch Consolidated Schools, not paginated.

8. West Branch Local Record, Nov. 27, 1879.

9. Ibid., June 3, 1880.
2. **His Second Year**

The fall term for the 1880-81 school year opened on Monday, September 13. Scott S. Gillespie had been hired as principal, having previously served for two years as principal of the Millersburg school. The teachers were Miss Sadie Vore (grammar department), Miss Anna Nedobylry (intermediate department), and Miss Lizzie Chandler (primary department). Herbert Hoover was one of the 26 boys and 22 girls in Miss Chandler's class.

The Local Record reported that the fall term opened "very auspiciously," with the pupils boasting that they had "the perfect kind of teachers," while the teachers were equally pleased with the pupils. Total enrollment in the school was 168.  

In mid-October there was a diphtheria scare, causing a number of parents to keep their children at home. By the end of the month, the epidemic had "spent its fury" in West Branch, having caused the death of five youngsters. On November 4 the editor of the Local Record announced that "those . . . afflicted are mending slowly, and it is thought that with proper care no more deaths will occur."  

Holidays were few in the late nineteenth century schools, but Thanksgiving and Christmas were observed. School was dismissed on Thursday, November 25, for Thanksgiving, and on December 24 for the Christmas holidays. During the weeks between, attendance, especially in the primary department, had been poor because of "much sickness" in the community. On December 6, 14 of Miss Chandler's students had been absent. Then on the 13th, Herbert's father died. Undoubtedly, Bertie and Tad missed several days of school at this time. By the

10. Ibid., Aug. 26, Sept. 2 & 23, 1880. The salaries of the staff varied. Mr. Gillespie was paid $80 per month, Misses Chandler and Vore $40 each per month, and Miss Nedobylry $35 per month.

end of December, the health of the community had seemingly improved, and hopes were voiced that "we will have a better attendance, hereinafter on the part of the little folks."

Classes resumed on January 3, 1881, and ended for the school year on June 3. The closing exercises, which found Herbert Hoover promoted to A Grade, "were pronounced very good by those who were fortunate enough to attend." Among those saying goodbye to friends and parents were Misses Chandler and Nedobylry, who returned to their homes in Iowa City.

3. Miss Chandler Recalls the Little One-Room Schoolhouse

Many years later, Miss Chandler, now Mrs. Stephen Sunier, recalled that her primary department, in which Herbert Hoover was a student, met in the little one-room schoolhouse. Records of the West Branch Independent School District for this period are incomplete, so it is impossible to document Miss Chandler's statement. We do know that the old schoolhouse was not removed from the grounds to the corner of Orange and Oliphant Streets until the mid-1880's. This, however, does not constitute conclusive evidence that the structure housed the primary department subsequent to construction in 1877 of the two-story 28 x 40-foot wing to the 1867 schoolhouse.

4. His Third Year

When school reopened on September 12, 1881, there was a lady principal--Miss Ada Knight of Buchanan County. Mrs. Anna Painter, who had taught in Davenport's Soldiers' Orphans Home, had the primary department, Miss Ida Albertson the intermediate, and Miss Eleanor Kraiger the grammar. Enrollment was 150, with 30 including Herbert and Mary Hoover in Mrs. Painter's primary department, 40 in the intermediate, 44 in the grammar, and 36 in high school.

12. Ibid., Dec. 31, 1880.
13. Ibid., June 9, 1881.
15. West Branch Local Record, July 14, Sept. 8 & 15, 1881.
This was the year in which Herbert Hoover spent eight months in the Indian Territory with his Uncle Laban and Aunt Agnes Miles. This would have limited the weeks spent in the West Branch school system.

The West Branch school year ended on May 26, 1882, with two of the teachers, Mrs. Painter and Miss Albertson, indicating they planned to return to West Branch in the autumn. Miss Kraiger would not, and the board of trustees had hired Miss M.E. Brey as her replacement.16

5. His Fourth Year

The West Branch School reopened for the 1882-83 school year on Monday, September 11, with a new principal, Arthur J. Craven, and three teachers—Misses Brey and Albertson and Mrs. Painter. Enrollment had increased to 196, and Herbert Hoover was one of the 14 students enrolled in C Grade of Miss Albertson’s intermediate department.17

Returning students observed that "much needed repairs and repainting" had been "done to the grounds and building during vacation."18

The trustees of the Independent School District in November, taking cognizance of the greatly increased enrollment, employed Miss Anna Records of West Branch as a teacher. She would assist

16. Ibid., June 1, 1882. Miss Albertson would spend her vacation in southern Indiana, while Miss Knight, the principal, returned to her home in Independence, Iowa.


18. West Branch Local Record, Sept. 7 & 21, 1882.
Mr. Craven in instructing the 66 high school students. This required the outfitting and furnishing of "another large room."19

19. Ibid., Nov. 23, 1882; Catalogue of Officers, Teachers and Students of West Branch High School for the Academic Year 1882-83, p. 6.
III. FURNISHINGS AND FIXTURES FOUND IN THE SCHOOLHOUSE

A. A Few Generalizations

To ascertain the interior fixtures and furnishings found in the Old West Branch School in the years 1870-1881, when it was used to house the primary department, a study has been made of the records of the West Branch Independent School District, the Springdale School, and Henry County for the period 1867-1885. Published reminiscences of persons who attended similar Iowa schools during this period have been consulted. Unfortunately, no accounts, published or manuscript, have been found describing the interior arrangements and furnishings of the subject school in the Hoover years.

Because of extensive alterations to the interior of the structure and its long use as a residence, Architect William Wagner's investigation of the fabric revealed scant information on the interior arrangements beyond location of doors, windows, chimney, blackboard, etc.

B. Blackboards

Structural evidence found by Architect Wagner locates the blackboard(s) against the north wall.1 The subject blackboard(s) were framed, with a space of about 2-1/2 feet between the chalk trough and floor.

Blackboards were a common feature of Iowa schools of this period. Roger S. Galer, who grew up in Hillsboro in the 1870's, recalled that the school rooms "were small, with plain seats and no teaching apparatus except a blackboard."2 Catherine


Wiggins Porter recalled that the schoolhouse in Coin, completed in 1882, had a "green" blackboard all around the room. There was white chalk, and for "special purposes chalk of various colors."  

Contracts on file at the State Historical Society of Iowa reveal construction details of period blackboards and chalk troughs for Henry County schoolhouses. Specifications for a 22 x 30-foot schoolhouse provided, "A black-board shall extend across west end of room four ft. in depth and the lower edge 2-1/2 ft. above level of platform. The black-board shall be on the best boards used for that purpose and shall be properly finished and permanently placed in the west end of room."  

A contract for blackboards to be placed in a Scott Township school provided that they be placed where the building commission may direct, and "be made of 3 in. ploughed & tongued and secret nailed, mold and bound with shelf at bottom for chalk and eraser." To be "painted two coats fleet and one coat lacquered slating."

Maintenance of blackboards constituted a large item in the budgets of the trustees of the West Branch and Springdale School Districts.

The trustees of the West Branch School in the period 1879-1882 paid for repair of blackboards:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>J.C. Chambers</td>
<td>December 31, 1879</td>
<td>$11.00</td>
</tr>
<tr>
<td>T. Coggleshall</td>
<td>December 12, 1881</td>
<td>1.85</td>
</tr>
<tr>
<td>T. Coggleshall</td>
<td>February 17, 1882</td>
<td>1.656</td>
</tr>
</tbody>
</table>

4. Specifications for 22 x 30-foot Schoolhouse, Henry County, Iowa, 1883, Ms. File, State Historical Society of Iowa.
5. Specifications for Schoolhouse in Subdistrict No. 1, Scott Township, Henry County, Iowa, Ms. File, State Historical Society of Iowa.
6. Records of the West Branch Independent School District, 1867-1885, files WBISD.
Trustees of the Springdale School on Jan. 3, 1876, paid J.E. Michener $2.40 for lumber for blackboards and $5 for construction and positioning of same. Subsequent disbursements of this nature included:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>H.C. Gill (repair of blackboards, etc.)</td>
<td>Sept. 17, 1880</td>
<td>$53.80</td>
</tr>
<tr>
<td>Wm. Mather (repair of blackboards)</td>
<td>Feb. 24, 1881</td>
<td>5.00</td>
</tr>
<tr>
<td>J.E. Michener (plastering blackboards)</td>
<td>Dec. 12, 1883</td>
<td>7.15</td>
</tr>
</tbody>
</table>

C. Platform (Rostrum)

Most one-room Iowa schools of the period had a raised platform (rostrum) at the teacher's end (front) of the room. Alice Money Lawrence recalled, "the teacher's desk was on a platform at the end of the room."^8

Contracts for construction of schoolhouses in Henry County in the 1880's called for: (a) "a rostrum to be built 6 ft. wide and raised eight inches above the level of the floor to extend from door to door";^9 and (b) "At the west end of the room shall be a platform 6 inches above level of floor and 4-1/2 ft. wide."^10

A thorough investigation of the fabric by Architect Wagner may reveal whether there was a platform at the north end of the room. If the physical evidence is inconclusive, it is reasonable to assume that the school, like others of the time, had a platform.

---

7. Records of the Springdale School, 1872-1885, files WBISD.


10. Specifications for 22 x 30-foot Schoolhouse, Henry County, Iowa, 1883, Ms. File, State Historical Society of Iowa.
D. Heating the Building

1. The Chimney

Structural evidence found by Architect Wagner locates the chimney at the apex of the gable, midway between the north and south elevations. Additional structural investigation is required to enable him to determine whether there was a chimney post.11

Typical chimneys were those built in Henry County in the 1880's. One contract called for the chimney "to run from top of ceiling joist to 4 ft. above roof, to be eight bricks to the course, to have a six inch thimble for stove pipe, and safe through ceiling at such place as desired for pipe."12 Another required the chimney to "be erected over center of house and . . . [to] extend 2-1/2 ft. above comb of house."13

2. The Stove

There was probably a coal-burning heating stove in the center of the room. Mrs. Alice Lawrence, who taught in a similar school in the 1870's and 80's, recalled, there was a heating stove in the middle of the room.14 Carl E. Seashore reported that in the mid-1870's the Boone County schoolhouse which he attended was heated by a coal stove, the coal being hauled directly from the mines on the Des Moines River, five miles away. The teacher cared for the fire, swept, and dusted.15


13. Specifications for 22 x 30-foot Schoolhouse, Henry County, Iowa, 1883, Ms. File, State Historical Society of Iowa.


Stoves and flues and repair thereof were reoccurring items of expense faced by the trustees of the West Branch and Springdale schools.

The trustees of the West Branch School in the period 1867-1883 paid the following vouchers:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>James Hirst (2 stoves &amp; trimmings)</td>
<td>Dec. 16, 1867</td>
<td>$140.00</td>
</tr>
<tr>
<td>C. Bean (stoves, etc.)</td>
<td>Oct. 27, 1880</td>
<td>21.36</td>
</tr>
<tr>
<td>C. Bean (stove &amp; pipe)</td>
<td>Dec. 30, 1880</td>
<td>26.25</td>
</tr>
<tr>
<td>J.C. Day (repair flue)</td>
<td>Oct. 2, 1883</td>
<td>6.4316</td>
</tr>
</tbody>
</table>

Trustees of the Springdale School in the years 1875-85 paid these vouchers:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>H.H. Hiatt (coal boxes)</td>
<td>Nov. 12, 1875</td>
<td>$4.50</td>
</tr>
<tr>
<td>Macy &amp; Smith (a base burner stove)</td>
<td>Feb. 15, 1876</td>
<td>38.00</td>
</tr>
<tr>
<td>J.E. Michener (coal boxes)</td>
<td>Jan. 3, 1876</td>
<td>4.00</td>
</tr>
<tr>
<td>H.C. Gill (stove &amp; repair of stove box)</td>
<td>Dec. 13, 1879</td>
<td>17.65</td>
</tr>
<tr>
<td>J.L. Spencer (work on stoves, etc.)</td>
<td>Dec. 11, 1882</td>
<td>3.63</td>
</tr>
<tr>
<td>G.S. Randall (repair stove, etc.)</td>
<td>March 15, 1885</td>
<td>2.50</td>
</tr>
<tr>
<td>Peter Thomas (repair of stove, coal boxes, etc.)</td>
<td>Sept. 7, 1885</td>
<td>8.5017</td>
</tr>
</tbody>
</table>

3. Fuel

The principal fuel used in the West Branch School in the period was coal. Small quantities of wood were bought on three occasions in the period 1880-83. The coal, as it was bought in large quantities, was stored in a coalshed and carried into the schoolhouse in a coal bucket.

16. Records of the West Branch Independent School District, 1867-1885, files WBISD.

17. Records of the Springdale School, 1872-1885, files WBISD.
The trustees of the West Branch School in the period 1868-1883 paid these vouchers for fuel:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>James Hirst</td>
<td>April 29, 1868</td>
<td>$14.03</td>
</tr>
<tr>
<td>Hammell &amp; Haines (coal)</td>
<td>March 31, 1879</td>
<td>29.72</td>
</tr>
<tr>
<td>Rich &amp; Maris (wood)</td>
<td>April 12, 1880</td>
<td>4.40</td>
</tr>
<tr>
<td>Hammell &amp; Haines (coal &amp; drayage)</td>
<td>April 23, 1880</td>
<td>6.15</td>
</tr>
<tr>
<td>Rich &amp; Maris (coal)</td>
<td>Oct. 27, 1880</td>
<td>64.52</td>
</tr>
<tr>
<td>Rich &amp; Maris (coal &amp; drayage)</td>
<td>March 29, 1881</td>
<td>42.25</td>
</tr>
<tr>
<td>Rich &amp; Maris (coal &amp; drayage)</td>
<td>Oct. 5, 1881</td>
<td>4.03</td>
</tr>
<tr>
<td>Hammell &amp; Haines (coal &amp; drayage)</td>
<td>Oct. 28, 1881</td>
<td>74.23</td>
</tr>
<tr>
<td>Rich &amp; Maris (kindling wood)</td>
<td>Dec. 21, 1881</td>
<td>2.00</td>
</tr>
<tr>
<td>William Steer (coal)</td>
<td>Nov. 28, 1883</td>
<td>65.45</td>
</tr>
<tr>
<td>Wm. Maris (wood &amp; repairs)</td>
<td>Nov. 28, 1883</td>
<td>6.65</td>
</tr>
</tbody>
</table>

4. Sand Box

To guard against fire, the stove was probably positioned in a sand box. On January 1, 1872, the trustees of the Springdale School adopted a motion of the School House Committee "to put something under the stoves to make them more secure from fire." To implement this decision sand boxes were built and filled.\(^{19}\)

E. Furniture

1. Double-Desks and Seats

The students, although it cannot be documented, probably sat at double-desks. Desks of this type were popular in the 1870's and 80's. For example on June 6, 1881, the trustees of the Fairview School in Jones County purchased for $127.50 from A.H. Andrews & Co. of Chicago 16 double-desks and seats.\(^{20}\)

18. Records of the West Branch Independent School District, 1867-1885, files WBISD.

19. Records of the Springdale School, 1872-1885, files WBISD.

20. Minutes of the Fairview School Board, June 6, 1881, files State Historical Society of Iowa.
Rosa Schreurs Jennings recalled that the Butler County school in which she taught in 1892 had a row of double seats, fastened tight to the floor, ... [running] along each side of the school room, leaving an open passage down the center. Those double seats! Each was a small apartment house in itself, requiring endless adjustments for the occupants to live happily together. Each desk had a round cut-out to hold an ink well, and since ink could never be used in freezing weather, the hole was a constant temptation for idle stuffing of this and that. A shelf under the top, open at the front, held schoolbooks, other supplies, and the contraband articles children always have.21

Mrs. Lawrence, who taught school in central Iowa at this time, recalled that "the heavy crude desks were arranged without regard for lighting fixtures."22

In the 1880-81 school year there were 48 enrolled in the primary department, which means that there would have been at least 24 double-desks and seats.23 These desks would probably have been arranged in three rows because of the number of students involved, with aisles between. The middle row, because of the stove, would be abbreviated.

2. Recitation Benches

Between the teacher's table and the front row of desks would probably be one or two backless benches used by the class currently in session.24


23. West Branch Local Record, Sept. 2 & 23, 1880.

3. **Teacher's Table and Chair**

The teacher had a table and chair. These would have been simple but functional. The table would have had at least one drawer.

4. **Tables or Benches for Water Pail and Lunch Buckets**

In the southeast corner there probably would be a table or bench on which a water pail was kept. A dipper hung with it. When a student became thirsty he raised his hand, and obtained permission to "go-for-a-drink," and walked to the pail, drank from the dipper, and returned it to the pail.  

Against the south wall, beneath the windows, were benches on which the children placed their dinner pails.

5. **Disbursements for Furniture by the West Branch and Springdale Schools in the Period 1867-1885**

The trustees of the West Branch School in the subject period paid the following vouchers:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>T. Coggleshall (desks, seats, table, chair, etc.)</td>
<td>Dec. 23, 1867</td>
<td>$297.01</td>
</tr>
<tr>
<td>Wm. Oliphant (book case)</td>
<td>Aug. 30, 1870</td>
<td>12.00</td>
</tr>
<tr>
<td>G.M.D. Hill (repair of seats)</td>
<td>Jan. 22, 1880</td>
<td>1.00</td>
</tr>
<tr>
<td>Geo. Bramtingham (table)</td>
<td>Oct. 5, 1881</td>
<td>4.00</td>
</tr>
<tr>
<td>Schneider Bros. (desks)</td>
<td>Oct. 29, 1885</td>
<td>19.00</td>
</tr>
</tbody>
</table>

Trustees of the Springdale School in the period 1874-1884 paid the following vouchers:


26. Ibid., pp. 392-93.

27. Records of the West Branch Independent School District, 1867-1885, files WBISD.
There was no partition separating the class room from a "cloak room" or vestibule. Hooks were secured to a plank fastened to the south wall, and from these, above the benches where they placed their lunches, the pupils hung their coats and hats.  


28. Records of the Springdale School, 1872-1885, files WBISD.

The trustees of the Springdale School in the years 1871-1885 paid the following vouchers:


30. Records of the West Branch Independent School District, 1867-1885, files WBISD. Unfortunately, no breakdown of the subject bills is given, and we have been unable to determine the percentages for curtains vs. those for matting. Charles Townsend was one of the proprietors of Townsend, Edmundson & Co., General Merchandisers, while T. Coggleshall owned a furniture store.
### Account

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>J. Chambers (curtains, etc.)</td>
<td>Aug. 26, 1871</td>
<td>$ 3.40</td>
</tr>
<tr>
<td>S.K. Beye (curtains, etc.)</td>
<td>Jan. 30, 1875</td>
<td>3.09</td>
</tr>
<tr>
<td>H.A. Hollister (curtain fixtures)</td>
<td>March 17, 1884</td>
<td>6.45</td>
</tr>
<tr>
<td>H.A. Hollister (curtains)</td>
<td>Aug. 21, 1885</td>
<td>3.97</td>
</tr>
</tbody>
</table>

### Miscellaneous Fixtures

1. **Clock**

   The trustees of the Springdale School on October 25, 1885, paid John Mather one dollar for cleaning the school clock.32

2. **Potted Plants and Pictures**

   Harriet Connor entered the first grade in Burlington's South Hill School in 1878. She recalled her classroom as a pleasant place, with "curtains at the windows, plants on the window sills, pictures on the walls, and a library collected by common effort."33

---

31. Records of the Springdale School, 1872-1885, files WBISD.

32. Ibid.

IV. SUPPLIES AND EQUIPMENT

A. Writing and Drawing Materials

1. Slates and Slate Pencils

Each student was required to have a slate and slate pencil. Most slates had plain wooden frames, but some students boasted frames whose edges were covered with heavy red flannel and bound with round shoestrings which passed through eyelets in the frame. Some fortunate ones had double slates which opened and closed like books. Some of the children cleaned their slates with small rags or sponges moistened with water from a little bottle which they kept on their desks; a few used spit.1

2. Crayons, Erasers, and Chalk

The school provided crayons, erasers, and chalk. In the period 1880-81, trustees of the West Branch School paid the following vouchers:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>C. Bean (crayons)</td>
<td>Aug. 21, 1880</td>
<td>$0.25</td>
</tr>
<tr>
<td>L.C. Branson (crayons &amp; erasers)</td>
<td>Dec. 6, 1881</td>
<td>$2.30</td>
</tr>
</tbody>
</table>

The trustees of the Springdale School in the years 1872-1885 paid the following vouchers:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.M. Cook (chalk)</td>
<td>Jan. 1, 1872</td>
<td>$4.40</td>
</tr>
<tr>
<td>S.K. Beye (crayons, etc.)</td>
<td>Jan. 30, 1875</td>
<td>3.09</td>
</tr>
<tr>
<td>J.M. Michener (crayons)</td>
<td>Jan. 3, 1876</td>
<td>2.25</td>
</tr>
<tr>
<td>Macy &amp; Faucett (crayons)</td>
<td>June 9, 1879</td>
<td>2.10</td>
</tr>
<tr>
<td>H.C. Gill (crayons, etc.)</td>
<td>Feb. 27, 1880</td>
<td>7.37</td>
</tr>
<tr>
<td>H.A. Hollister (crayons, etc.)</td>
<td>Oct. 26, 1883</td>
<td>4.00</td>
</tr>
<tr>
<td>Pilkington &amp; Sons (crayons, etc.)</td>
<td>March 15, 1885</td>
<td>$5.95</td>
</tr>
</tbody>
</table>

2. Records of the West Branch Independent School District, 1867-1885, files WBISD.
3. Records of the Springdale School, 1872-1885, files WBISD.
Trustees of the Henry County schools in the period 1888-89 paid the following vouchers:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>B.B. Lindley (2 boxes of crayons)</td>
<td>Sept. 17, 1888</td>
<td>.25c</td>
</tr>
<tr>
<td>B.B. Lindley (3 erasers)</td>
<td>Sept. 17, 1888</td>
<td>.60c</td>
</tr>
<tr>
<td>B.B. Lindley (2 boxes of crayons)</td>
<td>Dec. 10, 1888</td>
<td>.25c</td>
</tr>
<tr>
<td>B.B. Lindley (2 erasers)</td>
<td>Jan. 21, 1889</td>
<td>.30c</td>
</tr>
</tbody>
</table>


Pupils were required to provide their own paper (tablets) and pencils. In 1884-85 Allen Hoover purchased for Herbert Hoover's use:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scratch book and pencil</td>
<td>April 28, 1884</td>
<td>.07c</td>
</tr>
<tr>
<td>Paper and pencil</td>
<td>May 15, 1884</td>
<td>.05c</td>
</tr>
<tr>
<td>Arithmetic and paper</td>
<td>Jan. 9, 1885</td>
<td>.50c</td>
</tr>
</tbody>
</table>

4. Pen and Ink

Pupils in A Grade of the primary department were taught to write with ink in the spring term. Some of the desks would accordingly be equipped with covered ink wells.6

B. Lunch Buckets (Pails)

Children living some distance from school would bring their lunches in pails. As the Hoovers lived within easy walking dis-


5. Annual Report of Lawrie Tatum, Guardian of Herbert Hoover to the Court of Cedar County, Herbert Hoover Presidential Library, Reprint File.

tance, Herbert would have gone home during the one-hour lunch period.

A Marshall County student of this period recalled:

Lo, those dinner pails. Lift the lid and a mingling of characteristic odors arose. The smell of bread, pickles, cheese, pie, doughnuts—all the lunches of the past combined with the present in an indescribable mixture. No spinach, carrots, or orange juice for the youngsters of the sixties, nor any knowledge of vitamins or calories for his elders. The contents of a dinner pail of that period would make a modern dietitian faint! But the young pioneer stomach was strong, and much outdoor exercise and hard work produced a digestion that could cope with anything. Food was traded—a doughnut for a fat pickle, a dried apple shared or eaten in solitude. The child whose dinner pail held salt pork, corn bread, and cold potatoes, was likely to slip behind the schoolhouse and eat his meal furtively, while the favored ones who brought goodies liked to boast and display them.7

C. Janitorial Supplies and Labor

Positioned near the stove would be a coal bucket and shovel. In one of the corners of the room there would be a broom.

The trustees of the West Branch School in the period 1874-1881 paid the following vouchers:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Penrose Bros. (bucket)</td>
<td>Sept. 22, 1874</td>
<td>$ .30</td>
</tr>
<tr>
<td>Gruwell &amp; Butler (brooms)</td>
<td>Sept. 5, 1881</td>
<td>3.25</td>
</tr>
</tbody>
</table>


8. Records of the West Branch Independent School District, 1867-1885, files WBISD.
Trustees of the Springdale School in the period 1872-1884 paid the following vouchers:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>E.M. Cook (coal bucket and shovel)</td>
<td>Jan. 1, 1872</td>
<td>$4.40</td>
</tr>
<tr>
<td>J. Chambers (matches and brooms)</td>
<td>Aug. 26, 1871</td>
<td>3.40</td>
</tr>
<tr>
<td>S.K. Beye (stove polish &amp; alcohol for blackboards)</td>
<td>Jan. 30, 1875</td>
<td>3.09</td>
</tr>
<tr>
<td>J.E. Michener (ashpan &amp; fuel)</td>
<td>March 10, 1884</td>
<td>20.17</td>
</tr>
<tr>
<td>T. Faucett. (nails &amp; coal bucket)</td>
<td>April 19, 1884</td>
<td>2.77</td>
</tr>
</tbody>
</table>

George Tyler was paid ten dollars on Nov. 4, 1873, for cleaning three school rooms, two halls, three anterooms, and blackening three stoves; and P. Lloyd was paid $8.08 on Dec. 26, 1874, for putting up desks, painting blackboards, and glazing 9 lights.9

The trustees of the Henry County Schools in the period 1888-89 paid the following vouchers:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>J.C. Green (1 broom)</td>
<td>April 19, 1888</td>
<td>.30¢</td>
</tr>
<tr>
<td>Cubbison &amp; Co. (1 shovel &amp; 1 coal bucket)</td>
<td>Sept. 28, 1888</td>
<td>.65¢</td>
</tr>
<tr>
<td>Cubbison &amp; Co. (1 bucket &amp; 1 wash pan)</td>
<td>April 15, 1889</td>
<td>.65¢</td>
</tr>
<tr>
<td>Cubbison &amp; Co. (1 bucket &amp; 1 shovel)</td>
<td>May 13, 1889</td>
<td>.60¢</td>
</tr>
</tbody>
</table>

9. Records of the Springdale School, 1872-1885, files WBISD.

D. Water Bucket, Wash Basin, and Dipper (Cup)

Positioned on the table in the southeast corner of the room would be a water bucket, dipper or cup, and wash basin. There would have been an ironstone soap dish.\footnote{Lawrence, "A Pioneer School Teacher in Central Iowa," The Iowa Journal of History and Politics, Vol. 33, No. 4, p. 393.}

The trustees of the Lettsville Independent School District of Louisa County, Iowa, in the period 1877-78 paid the following vouchers:

\begin{tabular}{|l|l|l|}
\hline
Account & Date & Amount \\
\hline
Bucket & Jan. 26, 1877 & $1.50 \\
& & \\
Broom & April 18, 1878 & $.30 \footnote{Records of the Louisa County Schools, 1877-1880, files State Historical Society of Iowa.}
& & \\
& & \\
dipper & & \\
& & \\
tin cup & & \\
& & \\
\hline
\end{tabular}

E. Office Supplies

The teacher kept records of the pupils' attendance and progress. In the files of the West Branch Independent School District are attendance reports maintained by Miss Chandler, when she taught the primary department and Herbert Hoover was one of her students. Unfortunately, these reports are numerical and do not list the pupils by name.

Report forms were purchased by the Springdale School from H.H. Hollister.\footnote{Records of the Springdale School, 1872-1885, files WBISD.}
V. CURRICULUM, BOOKS, TEACHING METHODS, ETC.

A. Course of Study for the West Branch School—Primary Department

The West Branch School Board on May 30, 1883, announced the course of study to be pursued in school year 1883-84. The school's Primary Department was divided into three grades—the First Year (C Grade), the Second Year (B Grade), and the Third Year (A Grade).

The prescribed course of study for each of these grades would be:

First Year—C Grade

Chart Class—Word and sentence building, synthetic, phonetic and analytic reading and spelling of charts, punctuation marks, capitals, Roman notation, and reading in First Reader to page 60. Printing and writing words, short sentences, and lessons.

Number Lessons—Count objects. Read and write to 100. Add and subtract small numbers with objects and as slate exercises.

Science—Name and describe familiar objects from the animal, vegetable, and mineral kingdoms.

Geography—Conversational lessons about home, familiar places, etc.

Play—With blocks, picture cards, sliced pictures of birds and animals. Concert reciting of little verses and songs. Simple drawings on slate and blackboard, etc.

Second Year—B Grade

Reading—Finish First Reader. Continue punctuation, capitals, etc., to page 55 in Second Reader, writing and reading lessons and copying from blackboard on slate for exercises in reading.

Numbers—Continue reading and writing numbers to 1,000. Add, subtract, multiply, and divide small numbers. Continue
tables in each four rules to 6th table. Teach parts of objects and small numbers, as 1/2, 1/4, 1/5, etc. Local value of a figure or plan of increasing or decreasing by 10. Copy slate exercises from blackboard.

Writing--With paper and pencil.

Language--Oral and slate exercises continued from sentence building, etc., in First Grade and describing familiar objects. Writing names of objects, animate and inanimate. Use of capitals, periods, etc.

Science--Continued as in First Grade.

Five Senses--Exercised.

Geography--Continued, along with directions and distances, and cardinal points of the compass.

Play--Same as in the First Grade.

Third Year--A Grade

Reading--Finish Second Reader, spelling, etc., supplemented by papers on other readers. Continue copying reading lessons on slates, etc.

Spelling--Three hundred selected name words of persons, places, occupations, objects, etc.

Numbers--Continued as in the Second Grade in the five fundamental principles in arithmetic, through twelve lines of tables. Notation and numeration to 1,000,000. Roman numerals to one thousand. Slate exercises in each principle.

Language--Continued as in Second Grade. Lessons orally and placed upon blackboard from the first six chapters of Mrs. Knox's "Lessons in English." The subject text to be used as slate exercises, writing letters, etc.

Science--Continued as in Second Grade; observing familiar objects and classifying in some of the general sub-divisions.
of the animal, vegetable, and mineral kingdoms; writing and spelling names.

Writing--With paper and pencil, pen and ink during the spring term.

Drawing--From charts and copying from blackboard.

Geography--A study of county and state as to size and shape and "proof of shape of earth"; cause of day and night; divisions of land and water; names of continents, oceans, etc.; names of climatic zones; discussions on exports and imports, etc.

General Lessons--On objects to cultivate perception, memory, judgment; on habits of neatness, cleanliness, health and care of the body, etc.; ventilation; manners and morals; right and wrong; morning devotional exercises, etc.; conversational lessons on history, literature, calisthenics, songs, and intonations in concert, etc.; and gymnastics.¹

B. Text Books and Equipment Used in Primary Department

<table>
<thead>
<tr>
<th>Reading Charts</th>
<th>Baade's</th>
</tr>
</thead>
<tbody>
<tr>
<td>Readers (1st and 2d)</td>
<td>American Education and Cathart</td>
</tr>
<tr>
<td>Spellers</td>
<td>Swinton's</td>
</tr>
<tr>
<td>Writing</td>
<td>Spencerian System</td>
</tr>
<tr>
<td>Drawing</td>
<td>Smyth's</td>
</tr>
<tr>
<td>Blocks</td>
<td></td>
</tr>
<tr>
<td>Picture Cards</td>
<td>&quot;Sliced pictures of birds and animals&quot;</td>
</tr>
<tr>
<td>Language</td>
<td>Mrs. Knox's &quot;Lessons in English&quot;²</td>
</tr>
</tbody>
</table>


² 2. Ibid., pp. 8-10.
The trustees of the West Branch School in the period 1868-1885 paid the following vouchers:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Joel Bean (dictionary, etc.)</td>
<td>April 24, 1868</td>
<td>$18.00</td>
</tr>
<tr>
<td>N.W. Macy (globe)</td>
<td>March 22, 1879</td>
<td>15.00</td>
</tr>
<tr>
<td>John Henderson (geometrical blocks)</td>
<td>Dec. 28, 1883</td>
<td>16.50</td>
</tr>
<tr>
<td>Prang &amp; Co. (history cards)</td>
<td>Sept. 17, 1885</td>
<td>6.96</td>
</tr>
<tr>
<td>A. Andrews (maps)</td>
<td>Sept. 19, 1885</td>
<td>7.50</td>
</tr>
</tbody>
</table>

Trustees of the Springdale School in the period 1874-1885 paid the following vouchers:

<table>
<thead>
<tr>
<th>Account</th>
<th>Date</th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>M.A. Bemis (outline maps)</td>
<td>Dec. 26, 1874</td>
<td>$24.00</td>
</tr>
<tr>
<td>J.E. Michener (1 Kendall's globe, 1 set each of zoological charts and geometrical forms, and 1 graduated cylinder)</td>
<td>Dec. 12, 1883</td>
<td>35.28</td>
</tr>
<tr>
<td>H.C. Gill (set of Kennedy's geometrical blocks)</td>
<td>Jan. 9, 1884</td>
<td>17.00</td>
</tr>
<tr>
<td>H.A. Hollister (reading charts)</td>
<td>Oct. 30, 1884</td>
<td>11.00</td>
</tr>
<tr>
<td>Levi Pilkington (Yaggy's anatomical charts)</td>
<td>April 9, 1885</td>
<td>35.75$4</td>
</tr>
</tbody>
</table>

Of these items only the globe and reading charts would be used in the primary department.

C. Autograph Albums and Scrapbooks

Most of the children had autograph albums. A memorable day for Catherine Wiggins was when Gen. O.O. Howard visited Coin and wrote in her book, "Gen O O Howard, Brig Gen USA." Most autographs were accompanied by silly "verses" like:

Remember me when far far off
Where the woodchucks die of whooping cough.

3. Records of the West Branch Independent School District, 1867-1885, files WBISD.
4. Records of the Springdale School, 1872-1885, files WBISD.
When you are old and cannot see
Put on your specs and think of me.

When rocks and hills divide us
And you no more I see,
Just take a pen and paper
And write a line to me.\(^5\)

The last day of the school year brought forth the teacher's scrapbook. Alice Money Lawrence's scrapbook contained poems of all kinds, the melancholy verse of the Cary sisters, the poems of Whittier and Longfellow as they appeared in the newspapers, sketches of great men of the time, the account of Lincoln's assassination—a picture of the times, literary and historical. The pupils learned poems and recited them with zeal; they gave dialogues, the same ones over and over; they spelled down; and the trustees made speeches. It was a great day.\(^6\)

D. Teaching Methods

1. In the Primary Department

Catherine Wiggins, a daughter of James W. and Catherine McCollum Wiggins, was born in 1873, one year before Herbert Hoover. She spent her early childhood on the family farm, five and one-half miles northwest of Clarinda, Iowa. She attended the first grade at the Wolf School. There at the age of four, she learned her "ABC's, and began to spell by the A, b, ab, a, d, ad method, going on to three-letter combinations." She recalled the "fearful disorder in that school; it was 'confusion worse confounded.' Some of the larger boys were utterly unmanageable."\(^7\)

---


She transferred to the Elrick School after her first term. One of her most vivid memories there was of a "reading call." She recalled that she was reading a story about a hen and chicken drinking out of a pan, a picture of which was in the book.

I began, slowly and hesitantly, both because I wasn't sure of the words, and, in part, because I knew if I did make a mistake I'd be laughed at. "Do-you-see-the-,..." I began. Then I stopped. Chickens were in the picture, but f-o-w-l-s didn't spell "chickens." I looked to the teacher for help. "Fools," said he. "...Fools-drinking-out-of-the-pan," I concluded. "Ha, ha, ha!" loudly laughed both teacher and pupils, and I went to my seat in tears of rage and mortification. The incident probably seems very trivial, but it is indelibly stamped on my mind. I can see the teacher by his desk, the backward little girl with her tan-colored Wilson's Second Reader, the room full of grinning pupils—even the bucket of water with the dipper standing in the corner of the room.8

The other pupils liked the teacher and there was no question as to his ability to maintain discipline. He had a habit of putting a question to us, "Who invented the telegraph?" These were answered in concert.

Whenever someone was tardy, "every pupil had orders instantly to lay aside everything and shout at the late comer: 'Habit is a cable; we weave a thread of it each day until it becomes so strong we cannot break it.'"9

One of the teachers at Elrick was Catherine's aunt. While at the blackboard, her brother Sam "drew a picture of a horse. ... obviously engaged in contributing to the fertility of the soil on which it stood." The teacher saw the drawing before Sam could erase it and punished him. On the way home from school that evening, Sam described his teacher in uncomplimentary terms. Whereupon some of the girls declared, "We'll tell her!"

8. Ibid., p. 148.
9. Ibid.
He replied:

Tell her and tell her
And kick her down the cellar
And pick'er up and smell'er,
And she'll be as good as ever!10

Spelling classes were oral and written. Not only were the words to be spelled correctly, but they also had to be divided into syllables. Frequently, they were required to write or give orally the diacritical marks. For written work slates were used. In oral classes, they stood in line, toes on a mark drawn on the floor, and remained there until a missed word compelled them to go to the end of the line. At the end of each class, the pupil who stood at the head of the line received a "head mark," and each week the list of those getting marks, and the number was read by the teacher.11

Each reading lesson included a list of words to be spelled and defined.12

Carl Seashore's recollections of the spelling classes were similar to Catherine Wiggins Porter's. He recalled that when the spelling period arrived, the students stood in a row arranged alphabetically, and the recitation consisted of a spell down. As soon as the one at the head missed a word, the one who spelled it correctly took his place. Spelling thus became competitive, and "it was regarded as a mark of literacy and going the rounds of neighboring district schools became a sport." Those, like Carl, who were proficient would ride their ponies and go from spelling bee to spelling bee, their principal ambition to spell down the teacher. At that time "courtesy" required teachers to enter into the competition. Procedures were standardized, and all words were taken from McGuffey's and Swinton's spellers.13

10. Ibid., p. 149.
12. Ibid.
At Coin about 20 minutes per day were devoted to penmanship. The Spencerian system was in vogue and was much more difficult than the Barnes system which became popular in the late 1880's.14

Catherine Wiggins' favorite class was reading. Sometimes they stood in line for this class, but usually they occupied the recitation benches, and the "reader" took his place in front. Class members made the corrections, if any were needed, and "we were meticulous in our criticisms of such errors as mispronouncing a word, hesitation, using the falling for the rising inflection, and vice versa, monotone, etc. We had never heard of a rhetorical pause, and in correct reading the voice always fell at a period, colon, or semicolon, and never at a comma or question mark."

Volunteers who believed they could improve on the previous readers were sometimes called upon, and "someone was usually ready for performance sometimes resulting in chest expansion, sometimes in deflation."

There were a number of dialogues, the parts in which, as assigned by the teacher, "we would read with all the expression of which we were capable." There was, "The Discovery of America," which began:

First Speaker. "What is this wild story you have heard, sir? Columbus' return, the east discovery [sic] by sailing westwardly? Impossible!"

Second Speaker. "It is even so, Don Gomez. A courier has just arrived at the palace with the news."

Other selections were not in dialogue form. The speech of Patrick Henry, from, "It is natural for men to indulge in illusions of hope" to "as for me, give me liberty or give me death!" never lost its zest. "Will you walk into my parlor? said the spider to the fly," was in the reader used by one of Catherine's brothers.

Fifty years afterwards, she could still recite passages from "My Heart Leaps Up" by William Wordsworth; "On the Loss of the Royal George" by William Cowper; "Marco Bozzaris" by Fitz-Greene Halleck; "Break, Break, Break" by Alfred Lord Tennyson; "Childe Harold" by George Gordon, Lord Byron; "Elegy in a Country Churchyard" by Thomas Gray; and quote from the November 18, 1777, speech by William Pitt, Earl of Chatham.15

The multiplication tables were sung, so were the states and their capitals. When passing an Iowa schoolhouse in the 1870's or 80's one might hear "State of Maine, Augu-us-ta, Massachusetts, Bost-on," to the tune of Yankee Doodle."16

At Coin in the early 1880's, there was a morning and afternoon roll call. To the first, the students responded by repeating a verse, it might be from the Bible, or giving a maxim or motto. Popular were: "Lost, yesterday, somewhere between sunrise and sunset, two golden hours, each set with sixty diamond minutes. No reward is offered, for they are gone forever." "Our best friends are those who tell us our faults and teach us how to correct them." Following morning roll call there was sometimes singing, as also after lunch or even after recess, to help get the pupils into mood for study. A popular song was sung to the tune, "Johnny's So Long at the Fair."

Dear, dear, what can the matter be?
Oh dear, what can the matter be?
Dear, dear, what can the matter be?
Parents won't visit the school!

Now if they'd come in they'd find all in their places,
With neatly combed hair and clean hands and clean faces,
With all that is good, and none that disgraces.
Now why won't they visit our school?

In the afternoons, the pupils responded by giving the number of times they had whispered or otherwise misbehaved

15. Ibid., pp. 309-10.

during the day, or, if guiltless of any wrongdoing, by answering, "Perfect."\(^{17}\)

Carl Seashore recalled that in Boone County in the 1870's, they began the day with a prayer for which they had to kneel, and this was followed by the singing of religious songs. Seashore, many years later, could recall singing lustily:

I want to be an angel,
And with the angels stand.
A crown upon my forehead,
A harp within my hand.\(^{18}\)

E. Special Programs

1. On Fridays

Rules for the West Branch School provided that "pupils must attend all literary exercises in their respective rooms on each Friday afternoon."\(^{19}\) A copy of the rules and regulations for the West Branch School is found in Appendix A.

Typical of these "literary exercises" were those practiced in the Palo Alto and Page county schools in the 1870's and 80's.

On Friday afternoons, after recess, in the Palo Alto schools there was "usually a program of recitations and a spelling match to close the day." As the last "scholar" started for his seat, Mrs. E. May Lacey Crowder recalled, someone would sing out, "I Shall Never Learn to Spell." Everybody would then join in line for singing, which started with the following stanza:


Oh dear! Oh dear! I shall never learn to spell;  
I shall always be a dunce, I know very well.  
For the letters get mixed up in such a queer way,  
That I never can tell what they mean to say.20

On Friday afternoons at Elrick, there were ciphering matches, spell downs, and speaking "pieces." One of Catherine Wiggins' favorites began:

I love to go to Sabbath school  
But not to church upstairs;  
The sermons are so very long,  
So very long the prayers.

She recalled her younger brother "speaking" this one:

I wish I was an editor,  
I really do indeed;  
It seems to me that editors  
Get everything they need.  
They get the finest and the best  
Of everything that grows;  
They get in free to circuses  
And other kinds of shows.21

At Coin the programs were more sophisticated, Catherine Wiggins recalled, the "Literary Society" meeting every other Friday afternoon. The programs were attended by the community. Children from all the rooms participated and this brought out the parents. Friday after recess was devoted to preparing for "our literary performances," or, if no meeting was scheduled for that day, there were spelling and ciphering matches. The teacher appointed two captains who chose sides. Occasionally, the test was the speed with which the pupils could write the multiplication table correctly, both forwards and backwards.


The "Literary Society" program featured dialogues, declama­tions, and musical numbers, both vocal and instrumental. There were no "readings." Selections were memorized and there was usually a "prompter." Gestures were considered a mark of a good speaker. Parents would sometimes participate, and here Catherine first heard, "The Song of All Songs," sung by Elias Coleman. The idea behind this song was "to string together as many as possible of the titles" of popular songs.²²

2. At the End of the Year

On the last day of the spring term, there was usually a school picnic. Typical commencement exercises were those held by the Palo Alto county schools. A student recalled, there was, on the day in question, little or no studying or recita­tions, and in the afternoon many of the parents came by. Then there were "declamations and dialogues and an essay or two." The teacher read a report of the attendance, the work, and, sometimes, "the short comings of some whose work had not" measured up to standards. Next, the teacher gave each pupil "a picture card labeled 'Reward of Merit.'" Usually there were prizes for those who had done superior work in certain subjects. Some teachers gave an "Exhibition" at the close of the term.²³

F. Fun and Games

Catherine Wiggins recalled that in the late 1870's the smaller children before school and at recess played black­man, poison, crack-the-whip, blind-man's buff, froggie-in-the­meadow, London bridge, and drop-the-handkerchief. These games were played as follows:

(a) Blackman--One or two would be chosen to be "It." There were two bases and all save "It" lined up on one, while


"It" stood about two-thirds of the distance from the opposite base. At "It's" call of "one, two, three, here I come," the other players sought to reach the opposite base without being caught and slapped three times on the back. Anyone caught joined those already "It" and so on until all were caught. The game became very exciting when all but two or three had been caught and finally all joined in the effort to catch the last survivor.

(b) Poison--All joined hands in a circle. In the middle there was placed a stick, stone, or similar object. This was "poison." The players would pull, twist, turn, jerk--anything to get one of them to touch "poison." When they succeeded, they let loose and squatted before the person who had touched "poison," and who was now "poison" and could touch one of them. The squatters kept the game going by one or several of them rising to their feet, thus daring "poison" to touch them before they could again squat. Should "poison" succeed in touching one, he became "poison" and the game continued.

(c) Crack-the-whip--The larger and stronger players took their places at the end of the line, then the medium-sized, and finally the smaller. Joining hands they ran forward, and without warning, those at the head of the line would stop and pull with all their strength; those on the other end of the "whip" would be pulled off their feet and sent sprawling.

(d) Blindman's Buff--One of the participants would be blindfolded and attempt to catch anyone he could, and then tell who he was by feeling his features, asking questions to get him to laugh, etc. The players would touch the "blindman" while he was pursuing them, giving him a chance to catch them. After the "blindman" had caught and identified one of the players, he became the "blindman."

(e) Froggie-in-the-meadow--One of the players was either chosen or volunteered to be "froggie." The others then joined hands, formed a circle, and sought to keep "froggie" from escaping. If he escaped, the one judged responsible became "froggie." As the players circled "froggie," they sang:

Froggie's in the meadow
And can't get out;
Take a little stick
And stir him all about.
(f) London Bridge--A ring was formed by joining hands and the players circled about, passing under a "Bridge" formed by two players joining hands, held high. As the players circled, they sang:

London bridge is falling down,
Falling down, falling down,
London bridge is falling down,
My fair lady.

Whoever was under the "Bridge" as the last word was sung was caught as the "Bridge" fell, and he or she stepped aside. The game continued until several had been caught, "but not too many, for this is only part of the game; the second part is the paying of forfeits by those who have been caught."

(g) Drop-the-handkerchief--The players formed a circle by joining hands and then letting go. A volunteer became "It," and taking a handkerchief ran around the outside of the ring, dropping the handkerchief behind anyone he chose. The one selected picked up the handkerchief and sought to catch "It" before he could reach the spot where the handkerchief was dropped. If "It" outran him, the person behind whom the handkerchief was dropped becomes "It." Sometimes the one behind whom the handkerchief was dropped was so engrossed that he failed to look behind him, and "It" was able to make the circle, pick up the handkerchief, and "touch the careless one with it, whereupon the latter . . . becomes 'It'."

Sometimes as they formed the circle, the children sang:

Green gravel, green gravel,
The grass is so green.
Free mason, free mason,
Tis a shame to be seen. 24

At Coin, in the years 1880-85, the boys played baseball, and the girls skipped rope and played house, button-button, London Bridge, crack-the-whip, drop-the-handkerchief, along with two games heretofore unknown to Catherine Wiggins—"Old Witch" and "The Tizzle-ma-Tree" or "Rovers Arriving." The former featured a mother, her children, and a witch who stole the children one by one as the mother called:

Chickeny Chickeny craney crow,
Went to the wall to wash her toe,
And when she got back one of her chickens was gone.25

---

VI. GROUNDS

A. Picket Fence

A white picket fence in the late 1870's and early 1880's separated the school grounds from the boardwalk paralleling Downey Street.¹

B. Privies

Somewhere behind the schoolhouse were located two frame privies—one for the girls and one for the boys.²

C. Pump

On the schoolhouse grounds there were a well and pump.³

¹. See photograph found on plate xxxiv, Bearss, The Hoover Houses and Community Structures.
². Records of the West Branch Independent School District, 1867-1885, files WBISD.
³. Ibid.
PART TWO:

JESSE HOOVER'S BLACKSMITH SHOP
I. FURNISHING STUDY JESSE HOOVER'S BLACKSMITH SHOP

From 1871 until May 1879 Jesse Hoover owned and operated a blacksmith and wagon shop on Lot 41 in West Branch, Iowa. The construction history and significance of the smithy and wagon shop have been detailed by E.C. Bearss in Historical Base Map and Grounds Study: Herbert Hoover National Historic Site (Washington, 1968), pp. 11-13; and E.C. Bearss and Wilfred M. Husted, Buildings in the Core-Area and Jesse Hoover's Blacksmith Shop, Historic Structures Report, Herbert Hoover National Historic Site (Washington, 1971), pp. 183-243; and Bearss, The Hoover Houses and Community Structures (Denver, 1972), pp. 57-63.

Two archeological excavations of the shop area have been undertaken. In May 1970 Wilfred Husted undertook a preliminary excavation and succeeded in locating the north and south elevations of the smithy, and in the late summer of 1971 Adrain D. Anderson and a crew from Iowa University excavated the entire shop area. Husted's report was incorporated in the study he co-authored with Bearss in 1971, and Anderson submitted a preliminary draft detailing the comprehensive 1971 excavation of the smithy. Besides discovering a number of architectural details relating to the blacksmith shop, Anderson was able to locate the sites occupied by the forge, anvil, and coal bin. In addition, a huge assemblage of artifacts was uncovered and catalogued. Many of these were objects associated with a blacksmith shop floor, and provided information on the type of furnishings one could expect to find in the smithy.

In the preparation of this Furnishing Study of Jesse Hoover's Blacksmith and Wagon Shop, the author first studied the Husted and Anderson reports and reviewed Theodore Hoover's "Memoranda" and drawing, "Jesse Hoover's Blacksmith Shop about 1879." These documents constitute the core of this study. To determine what tools, etc., Jesse Hoover employed in his shop, a study was made of trade journals, catalogues, and manuals dating to the last 30 years of the nineteenth century. A number of secondary sources describing the blacksmithing art and focusing on the tools were consulted. Most of these were published in the 1960's and were sparked by revived interest by the reading public in a trade that had all but vanished from the American scene.
II. EQUIPMENT, FIXTURES, AND FURNISHINGS

A. Jesse Hoover's Forge

1. Location

The heart of Jesse Hoover's Blacksmith Shop was its forge, usually referred to by the smith as "his Hearth, or Fire." In the course of his archeological excavation in August-September 1971, Adrain Anderson located the forge site. It was about 28 inches from the northwest wall of the smithy and paralleled the north wall for seven feet. Constructed of stone, brick, and mortar, the forge was about 42 inches in width. The chimney, located at the west end of the forge, extended through the roof to a distance of several feet.1

2. The Hearth

As Jesse Hoover was of average height, the forge would have been about 30 inches in height. Set into the brickwork, constituting the top of the forge, fronting the chimney was the hearth—a square or rectangular receptacle. The hearth was usually as deep as it was wide; the deeper the fire the more oxygen from the bellows consumed, and the less oxygen to oxidize the iron being welded. The bottom of the hearth was formed of a slab of iron with a round hole in the middle to accommodate the tuyère.2

Most city shops had hoods of brick or metal over the forge connected with the chimney to carry off smoke and fine ash. In the countryside and villages, the smoke was frequently allowed to drift out through openings in the roof, and the ash permitted to settle about the shop.3

---


If Jesse Hoover’s forge had a hood to carry off smoke and fine ash, it would have been of boiler iron. Illustrations depicting this type of hood and method of construction are found in Practical Blacksmithing: A Collection of Articles Contributed at Different Times by Skilled Workmen to the Columns of “The Blacksmith and Wheelwright” …, compiled and edited by Milton T. Richardson, 4 vols. (New York, 1888), Vol. 1, pp. 40-2.

3. The Tuyère

The tuyère as it was called in sophisticated circles, or the "tweer" or "tue iron" as it was referred to by most smiths, was the hollow, slotted iron bulb "duck’s nest" attached to the end of a pipe leading from the round hole in the iron slab at the bottom of the hearth to the bellows. Its purpose was to direct a blast of air from the bellows to one side of the fire or the other. An iron rod, extending out to the front of the forge, was used to rotate and adjust the position of the tuyère.  

4. Working Space

The brickwork, constituting the top of the forge, extended beyond the hearth to form a flat table, on which the blacksmiths could place finished work to cool, or lay out pieces of iron to be forged.  

5. Tool Racks

On the front and sides of the forge were racks for tongs and tong rings to hold the handles of the tongs together when gripping a piece of iron in the fire. Frequently, it was an iron rail fitted to the upper edge of the brickwork and running the length of the side(s). Over this rail the smith hung his tongs downward.  

4. Bealer, Art of Blacksmithing, pp. 47-8; Hogg, Hammer & Tongs, pp. 31-2; Watson, Village Blacksmiths, p. 23. The "duck's nest" was designed to be cleaned periodically of ashes and cinders.


6. Bealer, Art of Blacksmithing, pp. 47-8; Hogg, Hammer & Tongs, pp. 31-2; see diagram and description found on pp. 33-35 of Practical Blacksmithing.
6. Pokers, Shovels, and Rakes

The smith required the following forge tools: pokers, shovels, and rakes. The poker was usually a 1/4-inch rod with a ring handle formed on one end. A small shovel was kept beside the forge, to be used to rearrange the coal or to pack the coal by pounding with the flat of the shovel. The rake, a poker with a crossbar and several teeth, was used to smooth "the surface of the fire or piling coal, especially charcoal, over the top of a piece of iron to be welded."  

B. The Bellows

1. Location

Theodore Hoover, in the 1940's, recalled that his father used a bellows, and it was located between the forge and west wall of the shop. This causes complications, because there is insufficient space between the west wall and the forge, as pinpointed by the archeologists, for the bellows. If the bellows were west of the forge as Theodore Hoover recalled, they would have been parallel to the shop's west wall. The tuyère leading from the nozzle of the bellows would pass through the south wall of the forge. In this position, the bellows would be protected on at least one side from having holes punched in the leather by careless on-lookers.

2. Description

The bellows preferred by most late nineteenth century smiths was "a combination of wood and leather and valve and pipes and levers and counterbalances." The bellows used by smiths from the sixteenth century consisted of three flat boards,


8. Theodore Hoover's drawing "Jesse Hoover's Blacksmith Shop about 1879," a copy of which is found in this report.
the lower and middle having air valves, and all connected at
the smaller end to the tuyère. When enclosed with leather, kept
taut by several ribs in each section, the bellows were divided
into an upper and lower chamber which together emitted a jet
of air.

The center board was fastened by a pin on either side to
uprights adjacent to the forge. Both upper and lower boards
were hinged to a box holding the tuyère. Valve holes, from
three to six inches in diameter, were cut in the bottom and
middle boards, each having a valve of leather or thin board
on its upper surface.

When mounted on uprights, the lower board fell of its
own weight, being held by the leather casing, and the upper
board rested on the middle partition. When the lower board
was pulled upward by means of a chain or rope fastened to a
lever above the bellows, the air was expelled through the middle
air hole to inflate the upper chamber and push a stream of air
through the tuyère.

Once the upper chamber was inflated, the lever was released,
and the lower board dropped, permitting the lower chamber to
inflate, and the upper board dropped by its own weight, closing
the middle valve automatically and forcing more air through the
tuyère. A piece of iron or a brick on the upper board would
increase the air pressure through the tuyère. An adjustable
counterweight prevented the board from descending too rapidly,
thus controlling the force of the blast.

Size of the bellows varied from six to seven feet for large
forges to three feet for village blacksmiths. A good bellows
had sufficient leather, so that when both chambers were extended,
the height of the leather at the back was equal to or greater
than the boards at their widest points.

By having only the upper chamber opening into the tuyère,
"blow-backs" were prevented. When the lower chamber was con-
ected to the tuyère and reinflated, small quantities of inflam-
ammable gasses from the fire were sucked through the lower valve.
Occasionally these gasses detonated in the lower chamber, bursting
the seams and compelling the forge to be shut down for repairs.
Blowbacks could be guarded against by lowering the bottom board gently, instead of permitting it to fall of its own weight, or by installing a counterweight lever to slow its action.

The bellows required maintenance. When the leather became old and stiff, the smith would wash it with a damp cloth and apply neat's-foot oil. Occasionally, the caulking between the joints in the boards had to be replaced to guard against loss of air pressure.  

3. Operation

The great advantage of a double-action bellows was that the blast was produced by both the upward and downward swing of the bellows arm, and as such was continuous, not intermittent. On a small job the smith could operate the bellows himself, one hand grasping the tongs that held the metal in the hearth, the other the "smooth cow-horn" which was "the traditional grip on the end of the overhead lever. The curve of the horn was downward, because the only pressure needed was in that direction, a counter-weight bringing the bellows back into position, discharging the blast and refilling them with air simultaneously." If the smith needed more heat, he pumped the lever vigorously. On most jobs, an occasional stroke was sufficient.

Whenever the smith was engaged in a two-handed job, the bellows had to be operated by his helper.

C. Jesse Hoover's Anvil

1. Location

Adrain Anderson, during his 1971 archeological excavation, identified the area where the anvil was positioned. "A generally


circular area of dark soil roughly two feet in diameter" was pinpointed near the southeast corner of the forge site.\footnote{11} Theodore Hoover's sketch places the anvil in this area.\footnote{12}

2. Description

A good anvil of the period weighed about 250 pounds, measured five inches across, was 20 inches in length, and had a 16-inch horn. Its top face was a slab of tool steel welded to a wrought iron base. Two holes were cut into the heel, or rear of the anvil, from the face through to the underside. The \textit{hardy hole} was square, made to fit the square shanks of the smith's forging tools, and the \textit{pritchel hole}, about three-eighths of an inch in diameter, was used for punching jobs, such as knocking nails out of horseshoes. The \textit{chipping block} was made of wrought iron. In cutting off a piece of hot iron, the smith laid the piece over the \textit{chipping block}, so that the sharp edge of the chisel would not be damaged, when it cut through to the \textit{chipping block}.

Many anvils had a slightly convex face. This made it easier to draw the iron to make it thinner and wider.\footnote{13}

3. Mounting the Anvil

There were a number of ways by which Jesse Hoover may have secured his anvil to its anvil block. Descriptions and illustrations of these are found on pages 114-115 and 120-124 of \textit{Practical Blacksmithing}.

Usually the anvil was mounted with a slight tilt, its face pitched away from the smith. This allowed loose slivers of scale

\footnote{11} Anderson, "The Jesse Hoover Blacksmith Shop--Preliminary Draft," Ms., p. 8, files HHNHS.

\footnote{12} Theodore Hoover's drawing "Jesse Hoover's Blacksmith Shop about 1879," a copy of which is found in this report.

\footnote{13} Watson, \textit{Village Blacksmith}, pp. 25-8.
which erupted on the surfaces of heated irons, to slide off onto the ground.\textsuperscript{14}

For heavy work the anvil should stand low to enable the smith "to come down on it with both hammer and sledge with force. When the smith had his hands closed the knuckles of his fingers should touch the face of the anvil and it will be the right height for all-around blacksmithing."\textsuperscript{15}

4. The Anvil Block

Before the archeological excavation was undertaken, it was presumed that Jesse Hoover, like most small-town blacksmiths, would have mounted his anvil on a post, the same size as the foot of the anvil, which would extend into the ground to a depth of several feet. As no evidence of such a post was found by Archeologist Anderson, Jesse Hoover must have mounted his anvil to a block of hard wood.\textsuperscript{16}

D. Water Tub and Tempering Bath

A tub of water was found in every smithy to cool hot iron so it could be handled or tempered. Usually the "slack tub," as it was called, was between the forge and anvil. Its rim constituted a handy place for storage of horseshoes.

A smith who made or sharpened tools, or fashioned springs or cutting implements, required a tempering bath and special slack tubs. Brine and oil cooled steel more slowly, thus providing "a more delicate temper." Brine was used for larger instruments, such as axes, and oil for knives and springs. Brine mixed in the shop carried a high proportion of salt. The oil used was whale oil.

\textsuperscript{14} Ibid., p. 28.


Many smiths used a double tempering bath, consisting of a small tub filled with brine, fastened between two sticks, which in turn rested on the rim of a large tub of clear water. The brine was used for tempering, the clear water for rinsing off the salt from the steel after immersion.17

As Jesse Hoover sharpened tools, he would have needed both a tub of water and a tempering bath.

**E. Mandrel**

A mandrel, a cone of cast iron two to four feet in height, would be positioned near the forge. Jesse Hoover used the mandrel to shape circular objects such as nose rings for oxen and hub bands for wagons. The better mandrels had a slot, running from point to base on one side, into which tongs could be inserted while holding the piece of work.18

**F. Grindstone**

Jesse Hoover would have had a foot-treadle grindstone.19

**G. Box on Which Boys Sat**

On the east side of the forge was a box on which Tad and Herbert Hoover sat to watch their father and his helper, while they worked at the forge.20

---


18. Ibid., pp. 80-1.

19. Watson, Village Blacksmith, p. 28; Practical Blacksmithing, pp. 34-5.

20. Theodore Hoover's drawing "Jesse Hoover's Blacksmith Shop about 1879," a copy of which is found in this report.
Years later, Theodore Hoover recalled:

Vivid memory begins with the forge in my father's shop. He had arranged a comfortable seat against the [east] wall of the forge and in front of the fire. Here I sat for many hours and watched him. There is no clearer picture in my memory than that of the forge, the fire, the bellows, the anvil, and the shower of flying sparks, as father and his helper would make the weld.21

H. Workbench and Vise

Theodore Hoover recalled that his father's workbench was against the south wall of the shop, and between the door opening on to Penn Street and the coal bin in the southwest corner. It would have been built of heavy planks that "would hold steady under pounding of heavy weight," and be strongly braced. The bench would be about two and one-half feet wide and ten feet long.22

Positioned near the east end of the bench was Jesse Hoover's box iron vise.23 Secured to the wall behind the bench were tool racks used for ironwork.24

I. Tool Bench

Jesse Hoover's tool bench was positioned between the anvil and the workbench, and to the right and within easy reach of


22. Theodore Hoover's drawing "Jesse Hoover's Blacksmith Shop about 1879," a copy of which is found in this report; Bealer, Art of Blacksmithing, p. 107; Watson, Village Blacksmith, pp. 28-9.

23. Theodore Hoover's drawing "Jesse Hoover's Blacksmith Shop about 1879," a copy of which is found in this report.

the former. Most blacksmiths preferred the top of their work benches to be a little lower than the top of the anvil.

A popular bench of this type in use in the 1870's consisted of a heavy wooden frame, "proportioned somewhat to the load" it was to carry. It consisted of a shelf, a few inches above the floor, used as "a receptacle for odd tools, bits of iron, and the general accumulation to be met with around any blacksmith's fire." The sides on the upper part were carried several inches above the top and were enclosed on three sides with a railing of 1-1/4-inch iron, with a space of about 1-1/2-inches between table and rail. Through these openings, the smith thrust handles of hammers and similar tools when not in use.

The top of the bench was frequently perforated by two slots and a number of odd holes into which tools were dropped. See pages 68-70 of Practical Blacksmithing for construction details of a tool bench of this type.

J. Coal Shed and Access Thereto

Adrain Anderson in 1971 located and identified the coal shed as adjacent to the south elevation of the blacksmith shop. The presence of "coal fragments inside the smithy" next to the coal shed addition "suggests access to the bin from inside." This would explain why the Theodore Hoover drawing locates a coal storage area in the southwest corner of his father's smithy.

25. Theodore Hoover's drawing "Jesse Hoover's Blacksmith Shop about 1879," a copy of which is found in this report.


29. Theodore Hoover's drawing "Jesse Hoover's Blacksmith Shop about 1879," a copy of which is found in this report.
K. Storage Area for Iron Bars

Bar iron was stored against the west wall of the shop.\textsuperscript{30} To keep it off the clay floor of his shop, Jesse Hoover used blocking.

\textsuperscript{30} Ibid.
III. TOOLS LIKELY TO HAVE BEEN FOUND IN THE BLACKSMITH SHOP

A. Background

During the 1971 archeological excavation, "7,552 fragmentary and complete artifacts" were recovered from the blacksmith shop site. "As expected," Archeologist Anderson reported, these objects reflected a wide range of activities in which Jesse Hoover engaged, and included "the shoeing of horses, the repair and manufacture of iron implements, and the maintenance of tools and hardware for customers."1

This information gives us a guide as to what sort and class of tools would have been used by Jesse Hoover in the period 1870-79.

B. Hammers

Most blacksmith shops had "a bewildering choice of hammers of every shape and weight." Some were hard and some soft, and while most were made of iron and steel, some were made of copper and lead. The most common hammer was probably the 4-pound cross-pein, "a mass of iron square or octagonal in cross-section, punched in the middle to receive a hickory or ash handle, with a flat face on one end and a wedge perpendicular to the handle on the other." Some smiths preferred the same weight hammer made with a straight pien, i.e., the axis of the wedge parallel to the axis of the handle.

Not all hammers had tempered-steel faces. Some had soft faces for special work, such as repairing cutlery, where a hard face would mar the finished surface.

Although a 4-pound hammer seemed "to provide the best force with the least acceleration," no two projects were alike. Consequently, the smith selected the proper hammer, ranging from a 1/2-pound leaf hammer to a two-handed sledge, weighing as much as 40 pounds. Popular sledges came in the straight pein pattern,

in weights of 8-, 9-, 12-, and 16-pound. For most work, the 8- or 9-pound sledge was sufficient.²

In addition to his sledges, Jesse Hoover would have had a selection of cross-peins, ranging in weight from 1-1/2 pounds to 3-1/2 pounds. Other hammers used were double-faced of different weights, and those designed for special jobs such as dressing tools, making chisels, and files.³

The handles, made of hickory, ash, or maple, were designed to fit "the smith's hand and peculiarities of his arm action." Any hammer over 5 pounds was usually considered a sledge, requiring two hands to wield, and had handles 30 inches in length or longer.⁴

C. Tongs

All blacksmiths had an assortment of tongs, "a heatproof extension" of the hands without which they could not remove red-hot pieces of metal from the hearth. Tongs came in as many or more different shapes than hammers. They varied in length from 15 inches for those used in light work to 36 inches for large two-handed tongs used to lift heavy pieces of iron from the fire, "the extra length being needed to keep the smith's hands away from the searing heat of white-hot metal." Great variation was found in the shape of the jaws.

For general work the jaws were straight, "like a pair of pliers," or they could be curved from the lips to the rivet. The subject curve, which formed a circle when the jaws were shut, provided a springy tension that allowed the lips to hold more steadily. It also allowed the lips to be easily adjusted for different thicknesses of metal, to improve the grip.

Straight-lipped tongs did not grip a round surface nor did they grip a flat surface tight enough. To cope with this situa-

² Bealer, Art of Blacksmithing, pp. 81-4; Holmstrom & Holford, American Blacksmithing, p. 37.
³ Bealer, Art of Blacksmithing, pp. 81-4.
⁴ Ibid., p. 84.
tion, the smith adapted his tools to his needs, and utilized a number of tongs, some made with curved lips, or nose, to hold round stock, some with squared lips to hold squared stock. Others had T-shaped lips with vertical extensions at each end to pick up heavy rectangular objects.

Special tongs were made for shaping hammers, axes, and other eyed tools. Usually these were designed to fit into the eye vertically so the smith could hold the object tightly, while he turned it from side to side as he shaped the face on the anvil. Sometimes the lips were offset to one side to grasp a long object extending beyond the rivet, parallel to the handles. Offset lips were employed to hold the blades of mattocks or adzes while being dressed. Most smiths had several pairs of plow tongs.5

Types of tongs found in a well equipped shop included:
(a) pickup tongs which were generally used by the helper to pick up tools and small pieces of metal; (b) flat tongs for holding flat iron; (c) box tongs for holding square or flat iron, the lip on each side preventing the iron from slipping around; (d) tongs with a box piece which could be made to fit several sizes of metal by making the box piece fit the size of iron to be worked; (e) round-bit tongs for holding round iron; (f) hollow-bit tongs for holding round iron and for pieces having a larger end than the body, such as bolts, etc.;
(g) tongs with square, hollow bits to hold square or round iron; (h) flat tongs for holding large pieces, "the diamond-shaped crease in the bits making them handy for holding large pieces of square or round iron"; (i) pincer tongs for holding work that had "a round piece raised off the main body," which could be more useful by cutting out the tops of the bits;
(j) tongs with bent bits used for work that could not be held in an ordinary pair of flat tongs, because the bits were too short. The bits were bent at right angles, so the work would pass by the joints. They could be made to hold either flat or round iron. (k) Crooked-bit tongs had the bits bent down instead of sidewise, and were used to handle rings of flat iron and for holding flat iron while bending flatways; (m) tongs for bending iron on edge had a bent lip to prevent the iron

5. Watson, Village Blacksmith, pp. 34-6; Bealer, Art of Blacksmithing, pp. 84-7; Practical Blacksmithing, Vol. 1, pp. 139-44.
from being pulled out of the tongs. (n) There was a set of tongs for holding chisels while sharpening them; and (o) there was a set of tongs for making bolts out of round iron.  

Drawings illustrating these tongs are found on pages 142-146, Volume I, Practical Blacksmithing.

D. Anvil Tools

1. "Hardie" or "Cutter"

Anvil tools used by the blacksmith included the "hardie" or "cutter," an inverted chisel which allowed him "to cut off or split barstock without a helper." There were hot cutters, ground with a sharp edge for cutting hot iron, and cold cutters, sharpened "to a more obtuse edge to stand up under cutting cold iron."  

2. Fullers and Flatters

All smiths were familiar with top and bottom fullers, used to make iron thinner. The former had some characteristics of a hammer, while the latter resembled a blunt "hardie" with a rounded edge. The smith would hold the iron to be shaped over the "fuller" and strike it with a heavy hammer, creating a dent, and then repeat this operation along the length of the stock to be thinned.

The horn on the bottom fuller prevented the piece to be fullerred from being knocked off the tool at every blow of the striker's sledge. For smoothing the object, the smith employed a flatter which took out the lumps and uneven places and gave the work a finished appearance.

---

6. Practical Blacksmithing, Vol. 1, pp. 139-44.
Illustrations of "fullers" and "flatters" are found on pages 152-153 of Vol. 1, Practical Blacksmithing.

If a piece were so bent that a flatter could not be used, the smith used a foot tool. The foot went inside the work, and the head outside. If there were to be rounded corners, he used a round-edge flatter. This tool was also useful in bending flat iron, the round edge preventing galling.9 Drawings of these tools are found on pages 153 and 154 of Volume 1, Practical Blacksmithing.

3. Swages

Another group of anvil tools were the "swages," of diverse sizes and shapes. They were usually used in sets. A well-equipped smithy had a set of round swages for making square rods into round rods in dimensions from 1/8 to 1-1/2 inches. There were also "oval swages, square swages, diamond swages, octagonal swages, hexagonal swages, etc." A special "bottom swage" could be fitted into a post vise instead of the anvil and constituted the "monkey tool" for forming tenon shoulders on a rod, and "nail-" and "boltheaders," for nail- and boltheads.10

Swages could be the full length of the anvil, or they might be very narrow. The short ones were called necking swages. A side swage had an eye punched in the opposite side from the ordinary swage. They were used for rounding off the ends of flat pieces, being handier than the ordinary swage. An anvil swage was fashioned on the end to overhand the edge of the anvil, so that "bent pieces needing to be swaged could be dropped over the edge of the anvil and swaged."11


On pages 150-151 and 155 of Volume 1, Practical Blacksmithing, are found a number of illustrations depicting various kinds of swages.

Jesse Hoover, like many blacksmiths, may have had a swage block of cast-iron and weighing about 150 pounds. It was usually about one and one-half feet square and six to eight inches thick. The edges of the swage block were provided with many semi-circular grooves so shaped and designed to take the place of a bottom swage. In the body of the swage block, there were a number of varied shaped holes to be used for forming depressions in sheet metal, bending iron, etc.12

4. Other Anvil Tools

To make a bend in his work, the smith might use a fork. There were also tools for bending flat pieces at right angles and for making T-pieces.

For fashioning nuts there was a nut swage and for making bolts several tools. There were heading tools and nut mandrels.13

Illustrations depicting these tools are found on pages 155-159 of Volume 1, Practical Blacksmithing.

E. Chisels and Punches

Blacksmiths employed diverse types of chisels and punches. Two kinds found in most shops were the hot chisel (hot set) and the cold chisel. The latter was somewhat thicker than the former, but the cutting edges were of equal width. A gouge chisel was used for "cutting off round corners at one operation." It could be ground inside or out, thus making an "inside and outside tool." The round punch could be used for a gouge, "where a good stiff one is required, by grinding it off bevel." A square chisel was also useful. A square punch could be ground bevel and used for a square or corner chisel.


There was an eye punch, while for countersinking holes a bob punch was needed. A cupping tool was used for rounding off the heads of bolts and nuts.

For setting down work and getting into small places, a set hammer was employed. It was made with square edges, and when made with the edges rounded off, it was called a round-edge set hammer. The subject hammers were also fashioned with the faces cut-off at an angle to enable the smith to "get down into corners and to settle work down very square." 14

A variety of chisels, punches, and set hammers are depicted in illustrations found on pages 146-150 of Vol. 1, Practical Blacksmithing.

F. Measuring Tools

For simultaneously taking the width and thickness of a piece of iron, Jesse Hoover would have employed a set of double calipers. He would also have had a set of single calipers, a pair of dividers, a two-foot T-square, and a good two-foot brass rule. 15

G. Bench Tools

1. Files

Either on the work bench or in adjacent tool racks would be found an assortment of files—single-cut, double-cut, and rasp. There would be triangular (taper) files and flat bastard files, the former found in lengths varying from 3 to 8 inches and the latter from 4 to 16 inches. 16


15. Ibid., 137-38. Illustrations depicting the type calipers, compass, and T-square likely used in the shop are found in figures 86-89, Vol. 1, Practical Blacksmithing.

2. **Pliers**

Pliers used in the shop would have been flat-nosed and range from 3 to 6 inches in length.\(^{17}\)

3. **Wedges**

Wedges would have been used by Jesse Hoover in both the smithy and wagon shop.\(^ {18}\)

4. **Blacksmiths' Plug (Taper Tap)**

Jesse Hoover would have had a number of these tools, ranging in size from 1/8 to 1-1/2 inches.\(^ {19}\)

5. **Clippers**

For clipping nail- and boltheads there were clippers, with the cutting edge perpendicular to the handles, so that the jaws could be easily forced under the nail- or bolthead.\(^ {19}\)

6. **Hacksaws**

Jesse Hoover would have had a hacksaw, a more accurate and convenient tool for cutting small bars and rods than the cold chisel.\(^ {20}\)

**H. Horseshoeing**

1. **Location**

Theodore Hoover recalled that there was an area at the east end of the shop where the horses stood when they were

\(^ {17}\) Anderson found and identified a "hinge section" from a pair of pliers in the 1971 excavation of the smithy.

\(^ {18}\) Four wedges were found by Archeologist Anderson in the 1971 excavation.

\(^ {19}\) Selvidge & Allton, Blacksmithing, p. 149; Bealer, Art of Blacksmithing, pp. 108-09.

\(^ {20}\) Bealer, Art of Blacksmithing, p. 109.
In excavating this area, Archeologist Anderson found large numbers of "horseshoe nail tip-fragments and heads," which corroborated Tad Hoover's recollections.  

2. **Tools Used**

a. **Farrier's Hammers**

In shoeing horses Jesse Hoover used several hammers. He would have had several 3/4-pound two-faced horseshoe hammers -- the head short and compact, with one end "slightly globular" for concaving. He would have had one or two horseshoers' turning sledges, weighing from 6 to 10 pounds, and perhaps several smaller turning hammers.  

b. **Tongs**

Jesse Hoover would have had several pair of farriers' tongs. The jaws were short and round "so as not to project far inside the shoe and be in the way of the horn of the anvil, and at the same time to allow the smith to shift the position of the tongs without losing their grip."  

c. **Stamps and Creasers**

Also found in the shop would be a set of horseshoe stamps and creasers. Popular creasers were those hollowed slightly on

---

21. Theodore Hoover's drawing "Jesse Hoover's Blacksmith Shop about 1879," a copy of which is found in this report.


23. *Practical Blacksmithing*, Vol. 1, pp. 186-87. Figure 179 in the subject publication depicts these two type hammers--No. 43 is the horseshoe hammer and No. 50 the horseshoe sledge.

24. Ibid., p. 192. Figure 182, item No. 64, in the subject publication shows a set of horseshoe tongs.
the inside face, thus allowing the smith to better follow the round of the shoe.25

d. Rasps

There would be several rasps, which came in three lengths—12-, 14-, and 16-inch, in the shop. These were used to level up the hoof.26

e. Blacksmith's Pincers

This tool was used to remove old shoes from a horse.27

f. Hoof Parer

The subject tool, with only one jaw sharpened to a cutting edge, was used to trim the outside of the hoof to size.28

g. Hoof-Cleaning Knife

With its hooked end, this tool was used to clean and trim the hoof around the frog. A popular hoof-cleaning knife in the midwest in the 1870's and 80's was the Wostanholm 1 x 6 farriers' knife.29

h. Buffer

A buffer was employed to cut off the clinched ends of old nails, and was frequently fabricated from a worn out rasp.30

25. Ibid., pp. 190-91. Figure 182, Nos. 58 and 59, of Practical Blacksmithing pictures the subject tools.


28. Ibid.


i. Punches and Pitchels

If Jesse Hoover made his own horseshoes, he would have employed two tools in fabricating the nail holes--a blunt punch and pitchel. The latter was a rectangular punch with a shank, a little smaller than the neck of the horseshoe nail.31

j. Cutting Nippers

Most late 19th century horseshoeing kits included a set of cutting nippers.32

I. Tools Jesse Hoover may have Owned

1. Post Drill

Jesse Hoover may have had a "post drill," a well-designed machine attached to a stout post and operated by turning a wheel, which became popular in the 1850's. A cast-iron frame gave rigidity to the post drill, and a system of cogwheels operated the 1/2-inch "chuck," in which drills were inserted and secured by tightening a screw. Downward pressure was exerted through a threaded spindle operated with a ratchet. A cammed lever, actuated by the operating wheel on the side of the frame, turned a cogwheel that threaded the spindle downward "an adjustable degree with each turn of the wheel."33

2. Bench Shears and Shear Cutters

Many shops were equipped with bench shears for cutting sheet iron up to 1/4-inch thick, and with shear cutters mounted on the floor for cutting heavy bars and rods, either cold or hot. Often two men were needed to operate bench shears, one to hold the sheet material and the other to close the shears.34

31. Watson, Village Blacksmith, p. 76.
33. Bealer, Art of Blacksmithing, p. 104.
34. Ibid., p. 109.
PART THREE:

JESSE HOOVER'S WAGON SHOP
I. FURNISHING STUDY JESSE HOOVER'S WAGON SHOP

A. Location

Jesse Hoover's wagon shop, in which he repaired but did not build wagons, adjoined the blacksmith shop on the north. It was there as early as 1872, as it is shown on figure 43, "Map of West Branch, Iowa, 1872," found in Harris & Warner's Atlas of Cedar County. In depicting its configuration, the Harris & Warner draftsman pictured its east-west dimensions (length) about two-thirds that of the blacksmith shop and its north-south dimensions (width) a little less than those of the smithy. Theodore Hoover's drawing pictures the wagon shop as having the same length as the smithy but with a lesser width.

Efforts by Archeologists to pinpoint the wagon shop and establish its dimensions and type of construction have been frustrated by subsequent intrusions.¹

B. Recollections of

Theodore Hoover recalled that for his fourth birthday his father made him a wonderful sled, and wisely, to make the gift more appreciated, allowed me to watch the process of its manufacture. He fashioned the runners of steel and devoted much care to the making and ornamentation thereof; the wagon-maker made the top, and it was painted red with green stripes, and my father's love name for me, "Taddie," painted across the front in large letters.²

¹ Anderson, "The Jesse Hoover Blacksmith Shop—Preliminary Draft," Ms., p. 13, files HHNHS.
The wagon shop next door, Theodore Hoover recalled, was "a place of interest, and the wagon-maker was a worker of miracles." On the sketch which he prepared in the 1940's, Mr. Hoover wrote on the diagram locating the shop, "wood working, wheel repairing shop. Eli Hoover's pumps, the first one or two made here."

C. Work Bench

Located in some part of the structure, probably against the north wall, was a work bench, made of heavy planks that "would hold steady under pounding and heavy weight." A popular bench in shops of this size was about ten feet long by two and one-half feet wide.

D. Tool Rack

Secured to a wall, in a corner adjacent to the work bench, would be a rack for carpenter tools.

E. Major Tools

1. Vise

Jesse Hoover's combination vise, weighing about 45 pounds, would be secured to the work bench.

3. Ibid.

4. Theodore Hoover's drawing "Jesse Hoover's Blacksmith Shop about 1879," a copy of which is found in this report.


7. Ibid.
2. **Tire-Bender Press**

Pressure from the centre gears of this machine, which may have been positioned parallel to the west wall, forced the metal being fabricated into a curve for a tire.8

3. **Tire Upsetter**

To remove tires a tire upsetter was employed.9

**F. Other Tools**

1. **Tools for Replacing a Felloe**

To replace a felloe, the following tools were needed: a tire bolt remover, rim clamps, and spoke clamps.10

2. **Bench Tools**

Necessary bench tools were: (a) a set of wood bench planes to include smooth planes, jack planes, fore planes, and joiner planes; (b) spokeshavers; (c) a set of saws to include felloe saws, rip saws, handsaws, and panel saws; (d) wood rasps; (e) wood chisels; (f) augers from 1/4 to 1 inch and brace; (g) draw knives; (h) hammers (both bell and adze eye); (i) hickory or lignum vitae mallets; (j) hatchets; (k) tenon cutters; and (l) tire- and spokedogs.11 For descriptions of these tools and others used by wheelwrights and carriage makers the reader should consult Practical Carriage Building: Comprising Numerous Short Practical Articles upon Carriage and Wagon Woodwork . . . , compiled by M.T. Richardson (New York, 1892).

3. **Measuring Tools**

In addition to compasses, dividers, calipers, carpenters' squares, chalk lines and awls, Jesse Hoover would have needed

---


a "traveler," a 6-inch iron wheel on an oak handle. The traveler was run carefully around the perimeter of a wagon wheel and the revolutions counted. This measurement was transferred to the tire iron so that the tire could be cut accordingly before welding.

Some travelers were more elaborate than others. Many were homemade, some with a wooden wheel, and these usually had only a single mark on the wheel's rim that was placed on a premarked position on the wagon wheel. The revolutions of the traveler were counted, and any excess portion of a revolution was marked with a piece of soapstone. Others had the wheel marked every 1/8-inch around the rim, with a pointer marked on a pivot to show the distance over a full revolution.

For hub bands many wheelwrights used a small 3-inch traveler with offset handle, which allowed him to insert the traveler inside the hub band to check the size after welding.\(^\text{12}\)

4. Millstone and Cooling Trough

Outside many shops there was an old millstone laying flat on the ground for use in shrinking a tire on a wheel. The wheel would be brought out and blocked up on chunks of wood, while the finished tire was laid atop a pile of old lumber and sticks, and a fire started. As the tire became a cherry red, the smith and his helper seized it with tongs and lifted it aside and onto the wheel, where it was hammered down flush. Spirals of white smoke erupted from the cracks, whereupon the wheel was thrust into a cooling trough, usually a big tub of cold water.\(^\text{13}\)

5. Foot-Treadle Lathe

Jesse Hoover may have had a foot-treadle lathe for turning wheel hubs, although factories after 1870 were supplying hubs, spokes, and felloes. These came in standard sizes, which the wheelwright had only to bore and fit.\(^\text{14}\)

---


APPENDIX A

RULES AND REGULATIONS FOR THE WEST BRANCH SCHOOL
APPENDIX A

Pupils.

I. All pupils will be required to remain on the school premises from nine A.M. until four P.M. except by permission of teacher.

II. Pupils when in the schoolroom will occupy their respective seats, except at the discretion of the teacher.

III. Any pupil who is absent from school four half days in any four consecutive weeks shall be suspended or expelled for the remainder of the term unless he brings a valid, written excuse from his parent or guardian. Sickness or inclement weather constitutes a valid excuse. Two tardy marks are equivalent to one half day's absence.

IV. No pupil shall be permitted to attend school for the purpose of recitation only, without permission from the President.

V. No pupil will be suffered to remain in the school longer than one week without the proper text books. Every pupil must pursue a regular course of study, except on recommendation of the Principal and approval of the President.

VI. Pupils must attend all literary exercises in their respective rooms on each Friday afternoon and a failure to perform when required to do so, unless prevented by sickness, will render the pupil liable to suspension from the school.

VII. Whenever a pupil inflicts damage upon the building or other school property, prompt payment there for must be made by himself, parent, or guardian.

VIII. No non-resident pupil will be admitted for longer than one week, without procuring the Treasurer's receipt of the payment of the tuition fee.

IX. Non-resident pupils shall pay tuition at the following rates:
   Primary Grades--$1.00 per month.
   Intermediate "--$1.50 " "
   Grammar and High school Grades--$2.00 per month.
X. A suspended pupil may be restored to school by the Principal
at his discretion or by the Board.

XI. Any pupil wilfully and repeatedly violating any of the
above rules, shall be suspended or expelled.
Principal and Teachers.

I. The Principal shall be responsible for the guidance and direction of the teachers and for the observance and enforcement of the rules and regulations of the Board.

II. The teachers will be held responsible for the preservation of the furniture and apparatus in their rooms. They will be expected to exercise a constant care over the general conduct of their pupils not only while at school, but also on their way to and from school and they are specially enjoined to inculcate the observance of neatness, cleanliness, correct manners, habits and principles.

III. The teachers are expected to devote the school hours to school duties exclusively, and as much time outside as possible to general and special preparation for their duties.

IV. The teachers must be in their respective school rooms at least twenty minutes before the coming session and remain until the close of the afternoon session.

V. The teachers must not allow disorder in their rooms or in the halls at any time nor falsehood, profanity, cruelty or any other form of vice.

VI. The hours of study shall be from nine until twelve o'clock in the forenoon and from one until four o'clock in the afternoon, with a recess of fifteen minutes in each session.

VII. The several teachers shall open their respective schools by reading a portion of the Scriptures.

VIII. The Janitor shall keep the buildings under his charge neat and clean, seasonably build the fires, open and close the buildings at the proper time and under the direction of the Principal take charge of the bell, yard and outbuildings and discharge such other duties as may be prescribed by the Board.

IX. The first bell will ring at one half hour and the second bell at five minutes before the opening of each session of
school. The first bell shall be rung five minutes and the second bell two minutes.

The rooms will be opened to pupils at the ringing of the first bell.
General Rules.

I. The studies pursued and textbooks used shall be such as may be prescribed by the Board.

II. Eight copies of every book, atlas or other production and one copy of every extended map sought to be introduced into the school, must first be donated to the District for the use of the school before the same shall be passed upon by the Board.

III. Any parent or guardian feeling aggrieved by the administration of the government of the school may apply for redress to the Principal or Board.

IV. No building owned or employed by the District shall be used, leased or rented for any other purpose than the sessions of the school, meetings of Teachers and Board, Teachers' Institutes and the examination of teachers and pupils, without consent of the President, except as the law provides.

V. The holidays shall be every Saturday, all Fast and Thanksgiving days appointed by the State or General Government, and no school shall be dismissed on any other day except by permission of the Board.

The school year.

Fall Term begins on the 2nd Monday of Sept. and continues eight weeks.
Winter Term begins on the 3rd Monday of Nov. and continues sixteen weeks.
Spring Term begins on the 2nd Monday of April and continues ten weeks.

N.W. Macy  
T. Coggleshall  

Com.

87
BIBLIOGRAPHY

PRIMARY SOURCES

1. Manuscript Materials

Annual Report of Lawrie Tatum, Guardian of Herbert Hoover to the Court of Cedar County, Herbert Hoover Presidential Library, Reprint File.

Minutes of the Fairview School Board, June 6, 1881, Manuscript Files, State Historical Society of Iowa, Iowa City, Iowa.

Records of the Henry County Schools, 1888-89, Manuscript Files, State Historical Society of Iowa, Iowa City, Iowa.

Records of the Louisa County Schools, 1877-1880, Manuscript Files, State Historical Society of Iowa, Iowa City, Iowa.


Specifications for Schoolhouse in Subdistrict No. 1, Scott Township, Henry County, Iowa, Manuscript Files, State Historical Society of Iowa, Iowa City, Iowa.

Specifications for 22 x 30-foot Schoolhouse, Henry County, Iowa, 1883, Manuscript Files, State Historical Society of Iowa, Iowa City, Iowa.

2. Report of Archeological Excavation


3. Memoirs

Hoover, Theodore, "Jesse Hoover's Blacksmith Shop about 1879," drawing; a copy is found in Bearss, Historical Base Map & Grounds Study Herbert Hoover National Historic Site.

4. Published: Reminiscences


Seashore, Carl E., "The District School," The Palimpsest, Vol. 23, No. 3.

5. Published: Atlas


6. Published: Measured Drawings

7. Published: Catalogues

Catalogue of Officers, Teachers and Students of West Branch High School for Academic Year 1882-83, West Branch, 1883.

Montgomery Ward & Company Catalogue No. 56, Fall and Winter 1894-95, Chicago, 1894.

8. Published: Manuals and Trade Journals


Practical Carriage Building: Comprising Numerous Short Practical Articles upon Carriage and Wagon Woodwork . . ., compiled by M.T. Richardson, New York, 1892.


SECONDARY SOURCES


93

The West Branch Consolidated Schools: Its Beginning, Growth, Characteristics and Alumni Record, West Branch, 1935.


9. Newspapers

Iowa City Press-Citizen

West Branch Local Record
ILLUSTRATION
Theodore Hoover's Drawing of "Jesse Hoover's Blacksmith Shop about 1879."
Wood working wheel repainting shop
Eli House as pumped the first one or two small here

Bellow
Forge

Building about 25' x 30' yd
25 x 35

Coal
Work Bench

Large door

House stood

Back view

Small

Barn

Large door

North

Downey Street

Alley

Wicket fence
Large gate

House 20 feet from fence