(No Model.) 3 Sheets—Sheet 1.

W. F. & G. W. SHAFER.

BALING PRESS.

No. 385,207. Patented June 26, 1888.

Fig. 1.

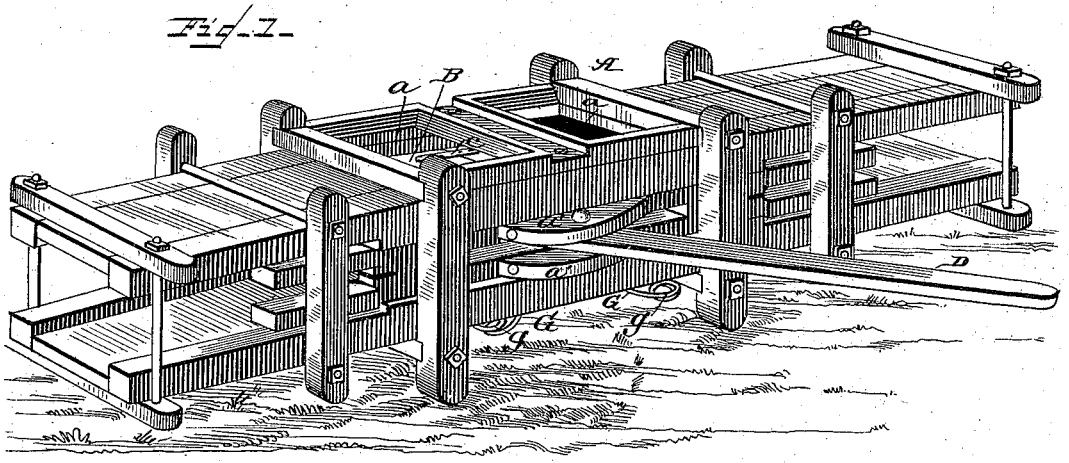
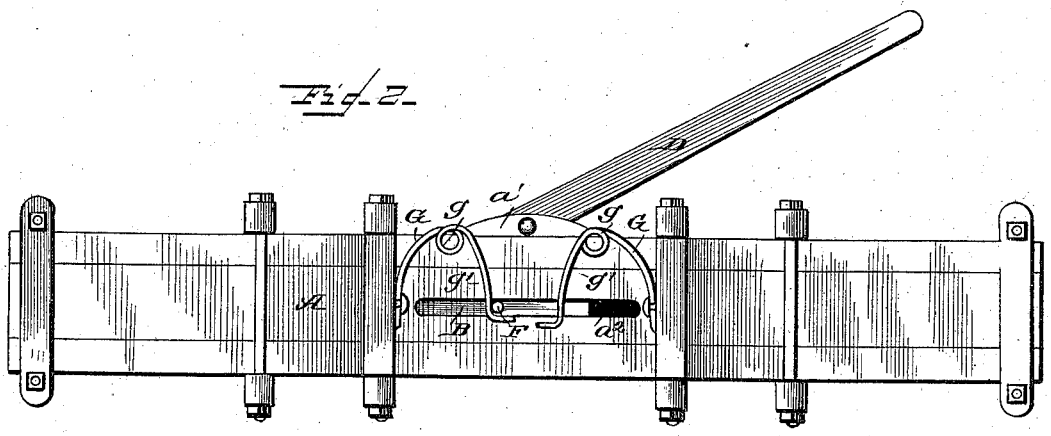


Fig. 2.



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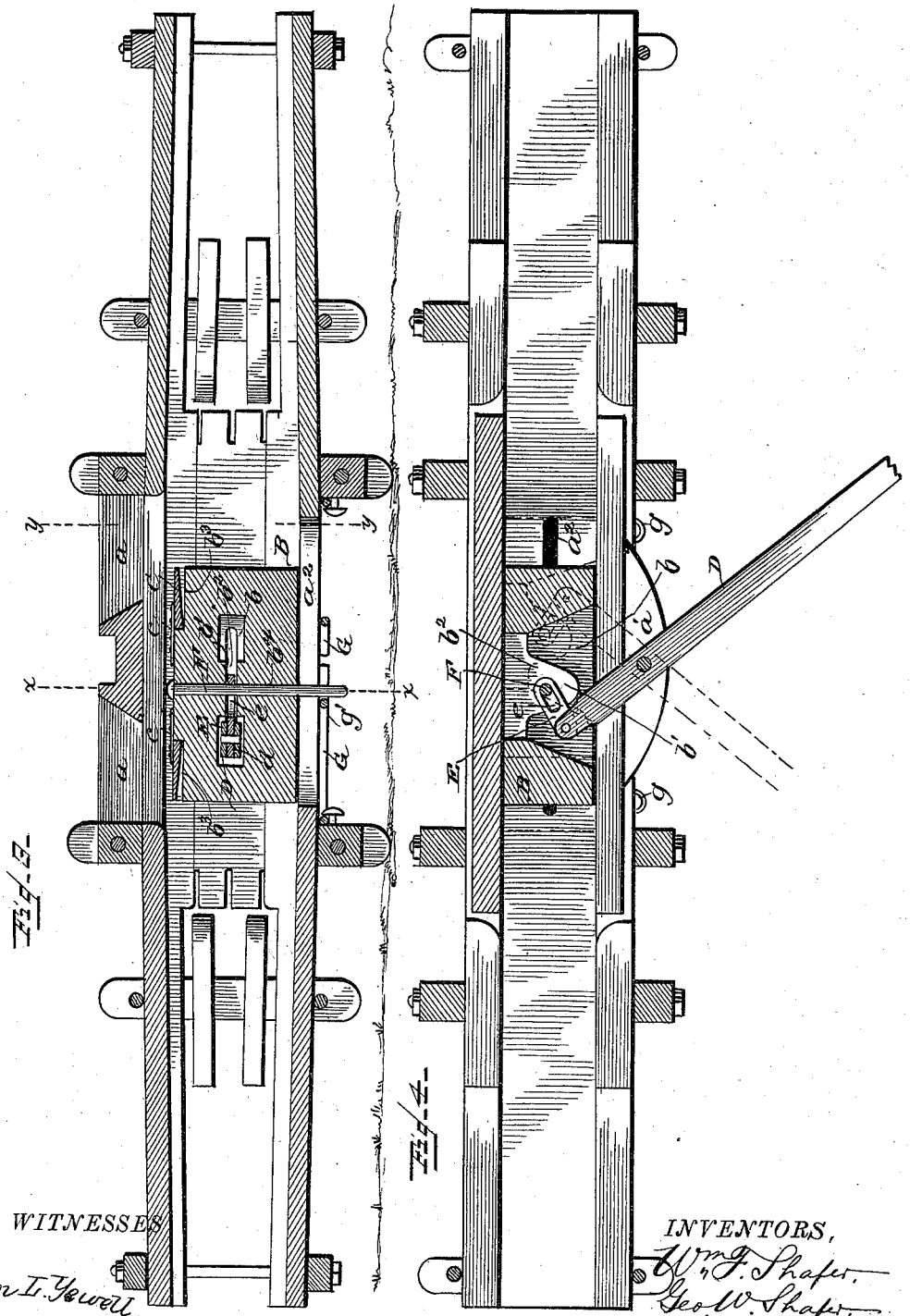

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BALING PRESS.

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Fig. 5.

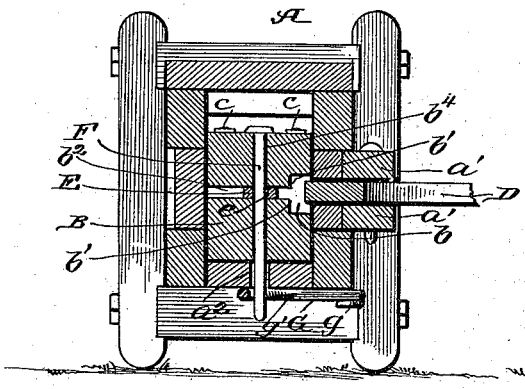


Fig. 6.

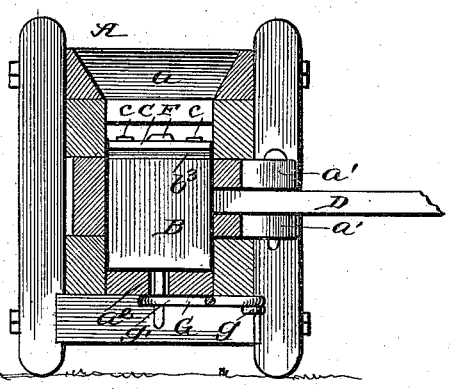


Fig. 7.

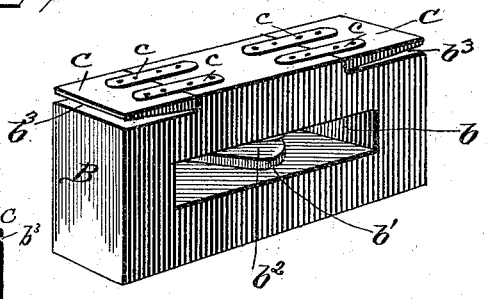


Fig. 9.

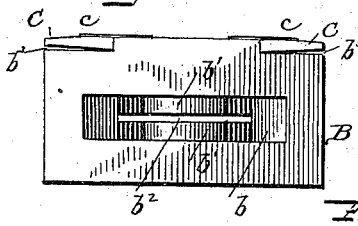
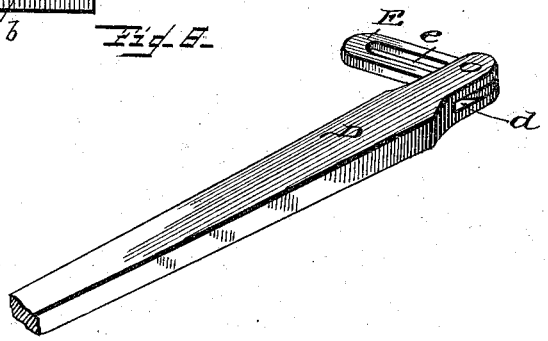


Fig. 8.



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UNITED STATES PATENT OFFICE.

WILLIAM F. SHAFER AND GEORGE W. SHAFER, OF RICH HILL, MISSOURI.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 385,207, dated June 26, 1888.

Application filed December 3, 1887. Serial No. 256,899. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM F. SHAFER and GEORGE W. SHAFER, citizens of the United States, residing at Rich Hill, in the county of Bates and State of Missouri, have invented certain new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention relates to baling-presses of that class in which a baling-chamber is provided at each end and a centrally-located plunger is adapted to alternately compress the material in first one and then the other chamber; and its object is to provide a simple and improved press of this character which will possess advantages in point of durability, inexpensiveness, ease of operation, and general efficiency.

In the drawings, Figure 1 is a perspective view of a baling-press embodying our invention. Fig. 2 is a bottom or inverted plan view of the same. Fig. 3 is a vertical longitudinal sectional view. Fig. 4 is a horizontal sectional view, the operation of the plunger being shown in dotted lines. Fig. 5 is a vertical transverse sectional view on the line *x x*, Fig. 3. Fig. 6 is a vertical transverse sectional view on the line *y y*, Fig. 3. Fig. 7 is a detail perspective view of plunger. Fig. 8 is a detail perspective view of lever and connecting-link. Fig. 9 is an elevation of the plunger.

Corresponding parts in the figures are denoted by the same letters of reference.

Referring to the drawings, A designates the baling-box, which may be, in the main, of any suitable construction, and in which a baling-chamber is provided at each end, said box having a feed-opening, *a*, at each side the center, upon the top of the box.

B designates the plunger, which is rectangular in shape and is adapted to fit closely within the walls of the baling-chamber. The plunger is provided upon one side with a recess, *b*, formed in such a manner as to leave a semicircular projection, *b'*, within the plunger, midway between its ends. This projection *b'* is slotted horizontally, as shown at b^2, the purpose of which will be hereinafter set forth. At each end of the plunger, upon its top surface, a recess is provided for about one-fourth the length of the plunger, as shown at b^3, and within these recesses are provided spring-boards C, inclined upon their under sides toward the outer ends, thus leaving a space between them and the plunger. These spring-boards are held in position and given a spring movement by two steel spring-plates, *c c*, upon each board, having their inner ends secured to the plunger and their outer ends to the spring-boards.

A lever, D, is fulcrumed between two brackets, *a'*, projecting from the front side of the box, and this lever is connected with the plunger by a link or plate, E, pivoted at one end in a slot, *d*, in the inner end of the lever, said inner end being rounded and adapted to engage with the projection *b'*. The other end of this bar or plate is slotted, as shown at *e*, and this end is loosely secured within the slot b^2 by a pin, F, passing through a perforation, b^4, in the center of the plunger and through the slot *e* in said bar or plate.

Upon the bottom of the box are secured at their outer ends two approximately U-shaped springs, G, having coils *g* at their central portions and the ends turned inwardly, as shown at *g'*. These springs are alternately engaged by a pin projecting downwardly from the plunger through a longitudinally-disposed slot, a^2, in the box, said pin being preferably formed by an extension of the pin F. The springs are adapted to force the plunger back when the pressure upon the plunger is relieved.

The operation and advantages of our invention will be readily understood by those skilled in the art to which it appertains. The hay or other material to be compressed is first fed to one of the baling-chambers, and the lever is then drawn toward the opposite end of the box, causing the plunger to move against and compress the material in the chamber into which it has been fed. During the stroke the rounded inner end of the lever engages one side of the semicircular projection within the plunger, forcing the plunger in the opposite direction to which the lever is drawn, against the tension of one of the springs upon the bottom of the box. When the lever is near the end of the stroke, its rounded inner end passes out of engagement with the projection *b'*. The

plunger is then thrown back by the tension of the compressed spring and resilience of the hay, thus allowing the lever to assume a position behind the projection *b'* on the other side ready for the return stroke. It will thus be seen that the material is alternately compressed in one and the other chamber by the respective strokes of the plunger.

It is obvious that by providing the spring-boards upon the top of the plunger, if any of the material to be compressed should remain on top of the plunger, the spring-boards will "give," thus preventing the plunger from binding and damaging the press.

We claim as our invention—

1. The combination, in a baling-press, of the box, a plunger located within said box, a pin projecting from the plunger through a slot in the floor of the box, springs adapted to engage said pin, whereby a recoil action is given to the plunger at the completion of the stroke, and a lever for operating the plunger, substantially as set forth.

2. The combination, in a baling-press, of the box, a plunger located therein and recessed upon one side and having a slotted semicircular projection within said recessed side, a lever pivoted to the box and having a rounded inner end engaging said recessed portion of the plunger, and a link or plate connecting the plunger and lever and having a slotted end loosely secured within the slotted projection in the plunger, and its other end pivotally secured to the inner end of the lever, substantially as set forth.

3. The combination, in a baling-press, of a box, a plunger located therein and having spring-boards secured in recesses on top of same, said plunger being recessed on one side and provided with a projection within said recessed portion, a lever pivoted to the box, a link or plate connecting the inner end of the lever and plunger, said inner end of lever engaging the projection, and a pin projecting from the plunger through a slot in the floor of the box and adapted to engage springs upon the under side of the box, whereby, when the lever has nearly completed a stroke, the inner end of the same is disengaged from the projection and is caused to recoil by the tension of one of the springs, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WM. F. SHAFER.
GEORGE W. SHAFER.

Witnesses:
J. B. HARVY,
C. L. FULKERSON.