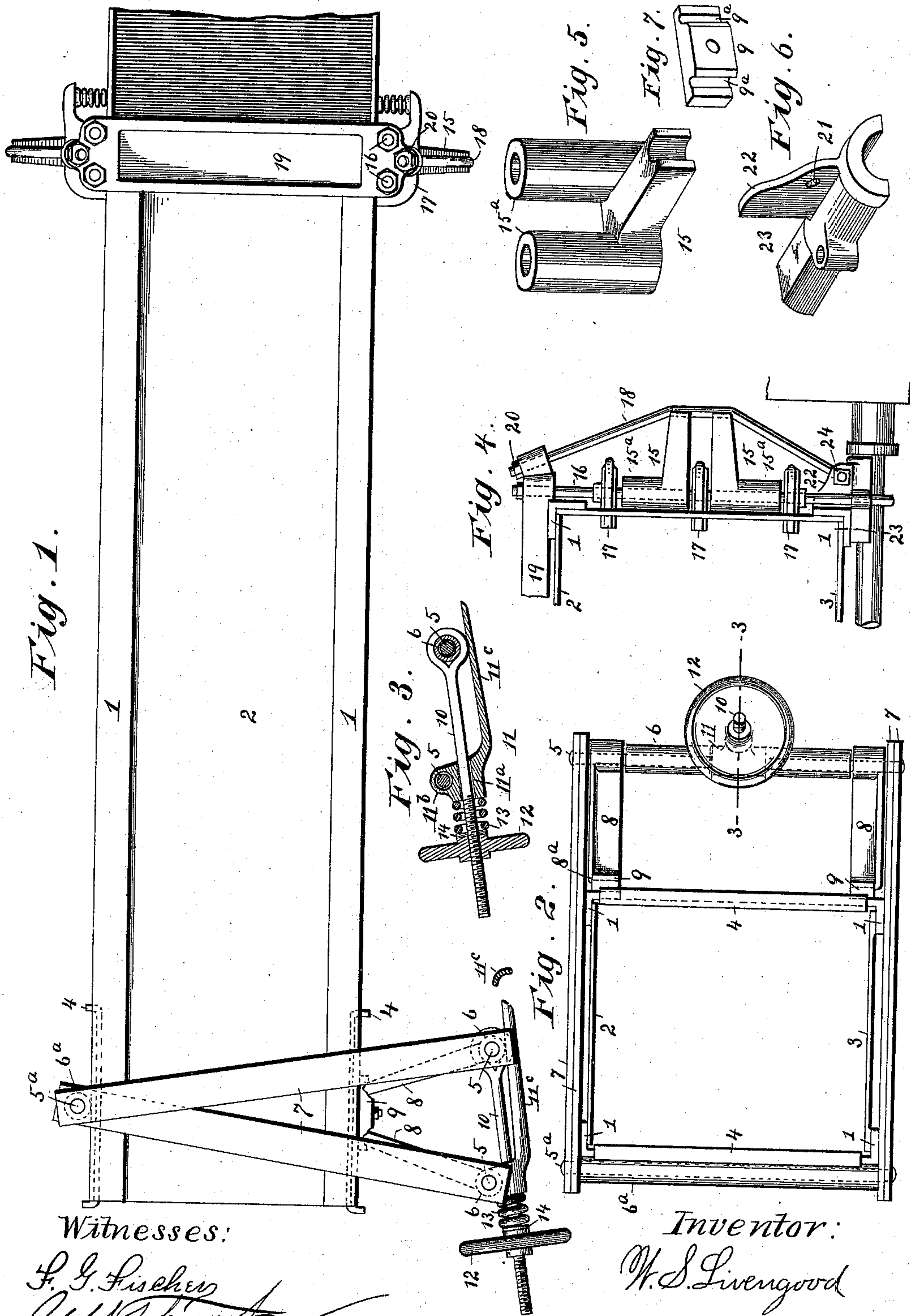


(No Model.)

W. S. LIVENGOOD.
HAY PRESS.

No. 568,203.

Patented Sept. 22, 1896.



Witnesses:

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UNITED STATES PATENT OFFICE.

WINFIELD S. LIVENGOOD, OF KANSAS CITY, KANSAS.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 568,203, dated September 22, 1896.

Application filed August 5, 1895. Serial No. 558,300. (No model.)

To all whom it may concern:

Be it known that I, WINFIELD S. LIVENGOOD, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Hay-Presses, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to hay-presses; and it may be said to consist of the novel arrangement and combination of parts hereinafter described, and particularly pointed out in the claims.

Referring to the drawings which illustrate the invention, Figure 1 represents a plan view of a baling-chamber embodying my improvements. Fig. 2 is a side elevation of same. Fig. 3 is a sectional detail view taken on line 3 3 of Fig. 2. Fig. 4 represents a broken front elevation of the baling-chamber. Fig. 5 is a detail perspective of one of the braces forming part of the invention. Fig. 6 is a detail perspective of the shoe forming part of my invention. Fig. 7 is a detail perspective of the casting against which the toggles bear.

In constructing my invention I employ a baling-chamber of usual form, consisting of angle-irons 1, which are disposed at the corner of the chamber, and the sheet-iron top and bottom 2 and 3, respectively. The tension-plates 4 at the rear sides of the chamber are also of ordinary make, but what I wish to call attention to more particularly is the mechanism employed whereby said tension-plates are adjusted to exert the necessary pressure upon the bale during its forced passage between said plates. The means whereby this is accomplished are so arranged as to best resist the enormous pressure concentrated at this point, and also with a view to convenience in operating said parts, as explained in the following description.

5 and 5^a indicate three vertical rods, the latter being located on the opposite side of the chamber from the other two. Said rods are reinforced by sleeves 6 and 6^a, in which they are incased. The latter bears against one side of the chamber, while the other two are held a suitable distance from its opposite side by four flat bars 7, which extend across

the top and bottom of the chamber and connect with the single rod, which acts as their pivot.

Pivotally connected with rods 5 are toggles 8, the inner ends of which rest in grooves 9^a of shoes 9. To better secure them when operated, said shoes are bolted to the angle-irons upon that side of the press. The inner ends of the toggles are also provided with lips 8^a to obviate any possibility of their leaving a horizontal plane while in use.

The above-mentioned toggles are operated by a horizontal rod 10, the forward end of which is looped to encircle one of sleeves 6. Its opposite threaded end, extending rearwardly, passes through a longitudinal opening 11^a in casting 11, and is engaged by the female threaded hub of hand-wheel 12. Casting 11 is provided at its rear end with a hub 11^b, which loosely encircles one of rods 5, and is also provided with a finger-like projection 11^c, which, extending rearwardly, bears against the loop of rod 10, and thus prevents vertical rods 5 from being drawn too close together, in which case the pressure of the toggle would be destroyed. In cross-section projection 11^c is quadrant-shaped that it may the better fit the side and top of that portion of the loop against which it bears.

To avoid any sudden strain, to which the threads of the hub and rod may be subjected, I interpose a coiled spring 13 between the hub on casting 11 and a washer 14, placed in front of the hub of hand-wheel 12. Said spring prevents the stripping off of the threads and also creates a steady pressure on the toggles when the wheel is screwed up.

The above-described tension embraces mechanism of simple construction, but which has been found by actual use to be powerful and easy of operation.

Another important feature of my invention is the manner in which the baling-chamber is reinforced near its forward end. As is well known by those experienced in the manufacture of hay-presses, one of the greatest strains is exerted near the forward end of the baling-chamber when the plunger starts to compress the newly-fed hay into a bale, causing the sides of the chamber to spring or bulge out at this point, after which it is impossible to make a clean bale, as a portion of

the hay gets into the space thus formed between the sides of the chamber and plunger. To avoid so serious an objection, I reinforce the sides of the chamber at this point by means of truss-frames, which consist of four horizontal arms 15, located on opposite sides of the chamber. These arms are secured in position by their sleeve portions 15^a to stirrups 16 at a point between retainers 17 and have their outer ends recessed to form a bearing for truss-rods 18, the upper threaded ends of which pass through openings in top casting 19 and are engaged by nuts 20. Their lower threaded ends, being bent at right angles, pass through openings 21 in flanges 22 of shoes 23 and are secured by nuts 24 in a like manner to their upper ends, thus forming a brace which for lightness, strength, and rigidity cannot be surpassed.

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is—

1. In a hay-press, a tension device consisting of vertical rods located on opposite sides of the baling-chamber, flat bars which connect said rods together, arms which are pivotally connected to two of said rods, recessed shoes for receiving the inner ends of the arms, a rod the looped end of which encircles one of the vertical rods, a casting having a hub portion through which another of the vertical rods pass, said casting also having a finger-like projection, and a hand-wheel the hub of which is internally threaded to receive the threaded end of the looped rod after passing through the above-mentioned casting, substantially as shown and described.

2. In a hay-press, the combination of a baling-chamber with the tension-plates, vertical rods located on opposite sides of the chamber, arms which are pivotally connected to two of the vertical rods, flat bars which connect the vertical rods together, a casting having a hub which encircles one of the vertical rods, said casting also having a reduced projecting portion, a rod one end of which is looped around another of the vertical rods, a hand-wheel the hub of which is internally threaded to receive the threaded end of the looped rod, and a coil-spring which is interposed between the hub of the hand-wheel and the hub of the above-mentioned casting, substantially as set forth and described.

3. In a hay-press, the combination with the baling-chamber of a brace comprising arms with sleeve portions formed integral therewith, located at opposite sides of the press, stirrups which extend through said sleeve portions, rods which extend from the bottom of the baling-chamber up past the outer ends of the arms to the top of the chamber, a casting which extends across the top of the chamber having openings through which the upper ends of the truss-rods pass, and shoes located on the rear axle having flanges containing openings to receive the lower ends of the truss-rods, substantially as shown and described.

In testimony whereof I affix my signature in presence of two witnesses.

WINFIELD S. LIVENGOOD.

Witnesses:

HENRY A. GRAY,
WILLIAM H. STEWART.