(No Model.) 2 Sheets—Sheet 1.

W. A. LAIDLAW.

BALING PRESS.

No. 382,167. Patented May 1, 1888.

Fig. 1

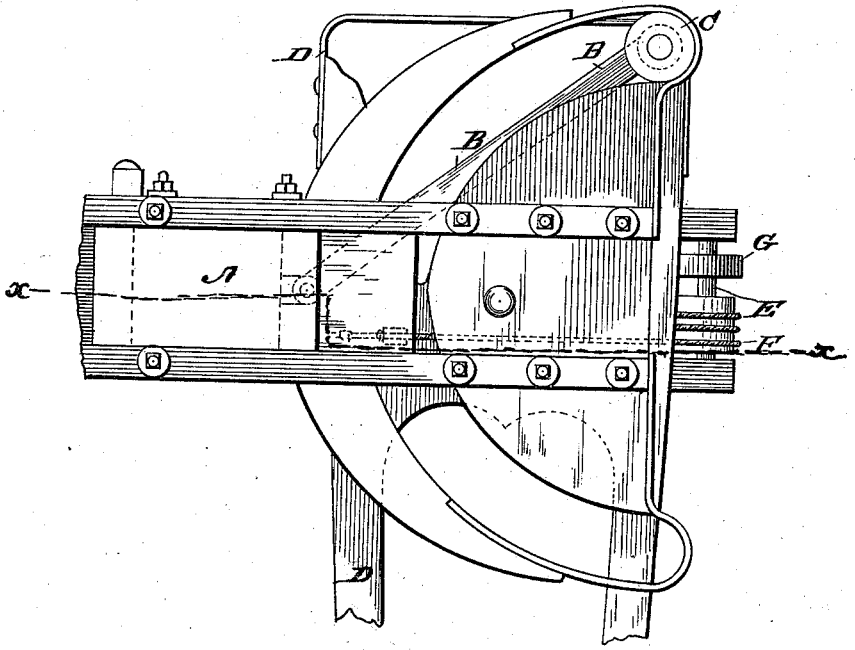
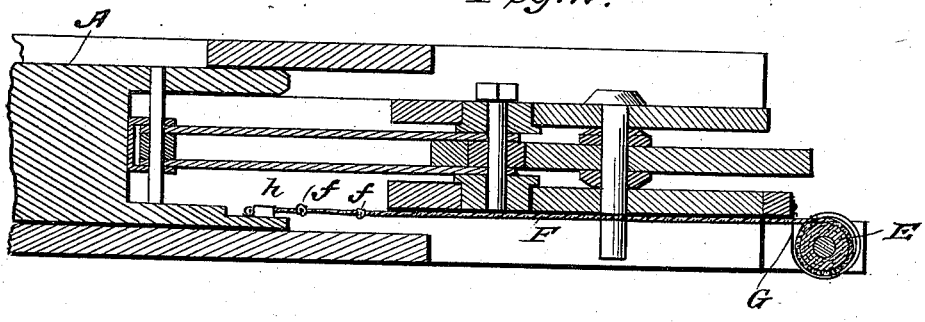


Fig. 2.



WITNESSES:
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P. B. Turpin.

INVENTOR:
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BY Munn & Co.
ATTORNEYS.

(No Model.) 2 Sheets—Sheet 2.

W. A. LAIDLAW.

BALING PRESS.

No. 382,167. Patented May 1, 1888.

Fig. 3.

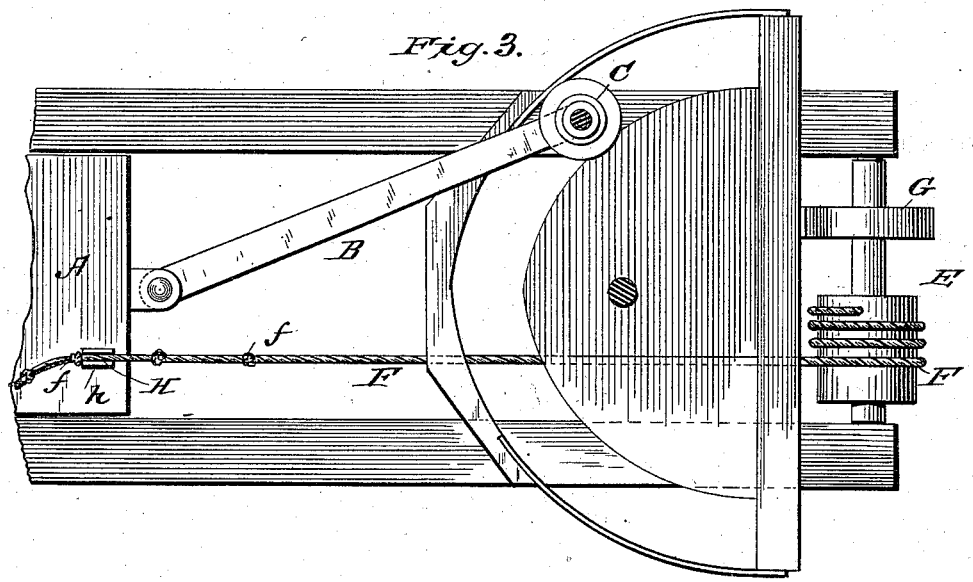
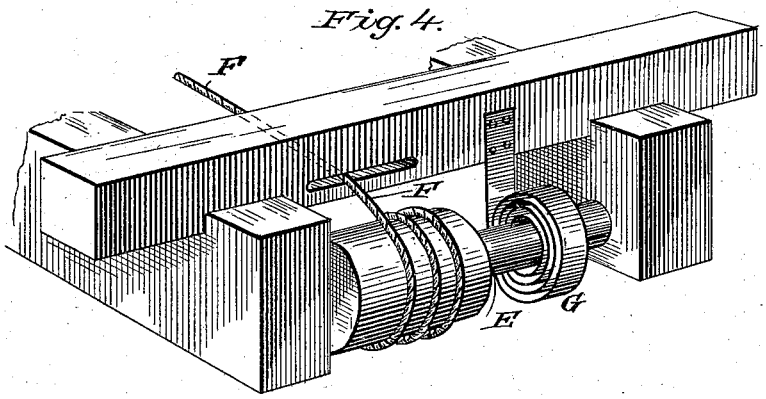


Fig. 4.



WITNESSES:
Fred G. Dieterich.
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INVENTOR:
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UNITED STATES PATENT OFFICE.

WILLIAM A. LAIDLAW, OF CHEROKEE, KANSAS.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 382,167, dated May 1, 1888.

Application filed September 8, 1887. Serial No. 249,171. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM A. LAIDLAW, of Cherokee, in the county of Crawford and State of Kansas, have invented a new and useful Improvement in Baling-Presses, of which the following is a specification.

This invention is an improvement in the class of presses having rebounding plungers—that is to say, plungers which rebound or spring back after each pressing impulse, this rebound being ordinarily caused by the spring or resiliency of the hay or other pressed material after the plunger has reached the limit of its forward or pressing movement.

The present invention seeks to provide novel constructions by which to supplement the expanding tendency of the pressed material when the latter possesses but a small degree of resiliency and to supply the desired backward tendency to the plunger when the pressed material is practically free of spring, as will be fully understood from the following description.

The invention consists in the novel constructions and combinations of parts, as will be hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a top plan view, and Fig. 2 a sectional elevation on about line *x x*, Fig. 1, of one end of a press provided with my improvements. Fig. 3 is a detail plan view of the improvements, and Fig. 4 is a perspective view illustrating the same, all as will be hereinafter described.

The main frame of the press, the follower A, pitman B, friction-rollers C, and the sweep D may be of the construction shown, which is similar to that illustrated in my former patent, No. 359,081, bearing date March 8, 1887, or they may be of other suitable construction without departing from the spirit of the present invention.

To the main frame, at or near the end of the press, I journal the roller or drum-shaft E, which is connected by a cord or rope, F, with the plunger, and which drum-shaft is given a rotary tendency by means of a spring, G, which operates to rotate the shaft E when the latter is free to turn in such manner as to wind up the rope F and retract the plunger or follower.

The cord or rope F is fixed to the drum-shaft and extends to and is connected with the plunger by fitting the cord in a slot, H, formed or supplied on the upper side of the lower section of the plunger, such cord being knotted and having a knot, *f*, fitted in front of the walls of the slot H to form a proper connection of the cord with the plunger. The slot H is usually and preferably formed in a block, *h*, secured to the plunger. The cord F is provided with a number of knots *f*, in order that it may be connected with the block at different points along its length, for the purpose of adjusting the tension of the spring to cause it to operate with more or less force on the plunger. The spring, as shown, and as preferred, is a spring-plate fixed at one end to the framing and at its other end to the shaft, being coiled around the shaft, as shown. It will be noticed that the shorter the length of cord or rope between the shaft and the plunger the greater the tension and operating force of the spring, as will be manifest.

Obviously the rope might have knobs or other projections on it instead of knots, and a chain constructed to engage in the slot of the plunger might be substituted for such rope without departing from the principle of my invention.

In pressing damp material with ordinary presses of this class the bales are ordinarily made too heavy, as there is not so much spring or elasticity in the damp material as in dry. By the aid of the improvements before described, however, hay or other fibrous material may be pressed to the density required, no matter what the consistency of the material being pressed, as any lack of spring in such material may be compensated for by a proper adjustment of the connection of the cord with the plunger.

It will be seen that the construction described serves to withdraw the plunger, and the degree of force exerted thereby on the plunger may be varied as desired.

As will be readily understood, the rope in its different adjustments operates with greatest force on the plunger when the latter is in its innermost position, and the force of the action of such spring gradually decreases until the plunger is in its extreme outer position.

Having thus described my invention, what I claim as new is—

1. In a press, substantially as described, the combination, with the plunger, of a shaft, a cord or rope connecting such shaft with the plunger, and a spring whereby to give such shaft a rotary tendency, all substantially as and for the purposes described.

2. In a press, substantially as described, a plunger and a shaft combined with a rope extended between and secured at its opposite ends to said shaft and plunger, and a spring coiled around the shaft and secured at one end thereto and at its opposite end to the framing, substantially as set forth.

3. The combination, in a press, of the plunger provided with a slot fitted to receive a rope, the shaft, the spring for giving such shaft a rotary tendency, and the cord or rope secured to the shaft and provided with a number of knots whereby its connection with the plunger may be adjusted, substantially as described, and for the purpose specified.

WILLIAM A. LAIDLAW.

Witnesses:
R. A. BOLICK,
CHRIS. KIEBLE.