(No Model.) 2 Sheets—Sheet 1.

N. W. HERRING.

BALING PRESS.

No. 262,043. Patented Aug. 1, 1882.

Fig. 3.

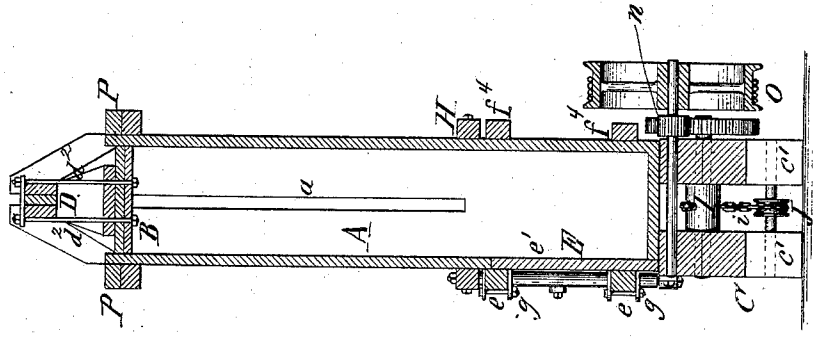


Fig. 2.

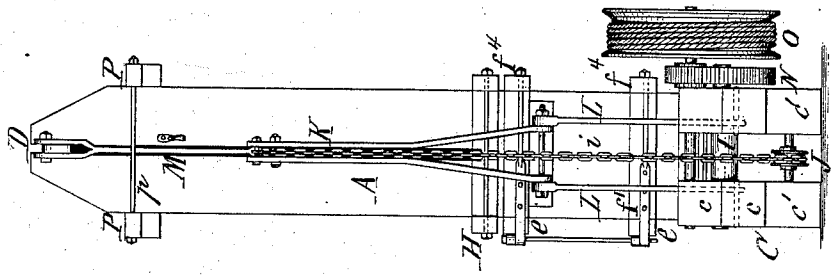
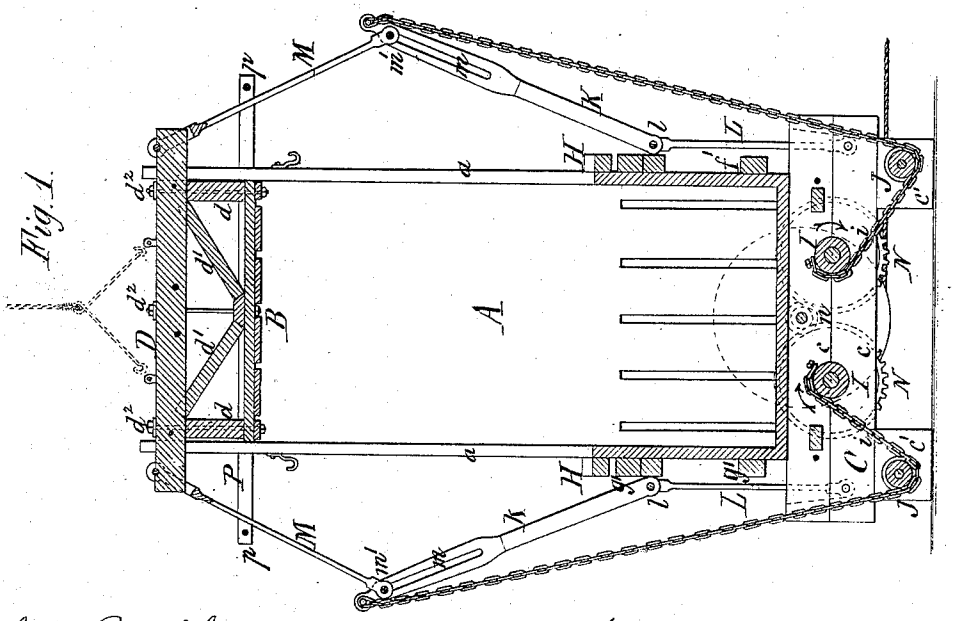


Fig. 1.



Witnesses.
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(No Model.) 2 Sheets—Sheet 2.

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Fig. 6.

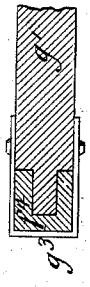


Fig. 7.

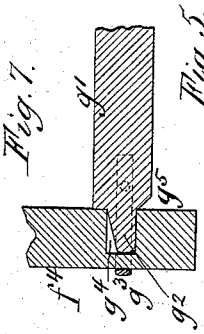


Fig. 5.

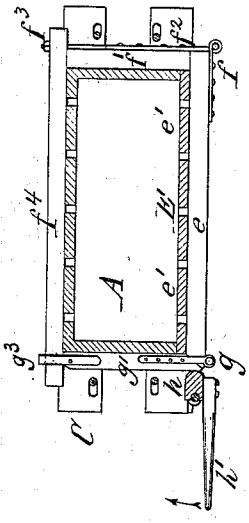


Fig. 8

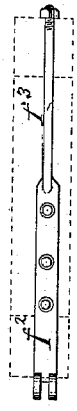
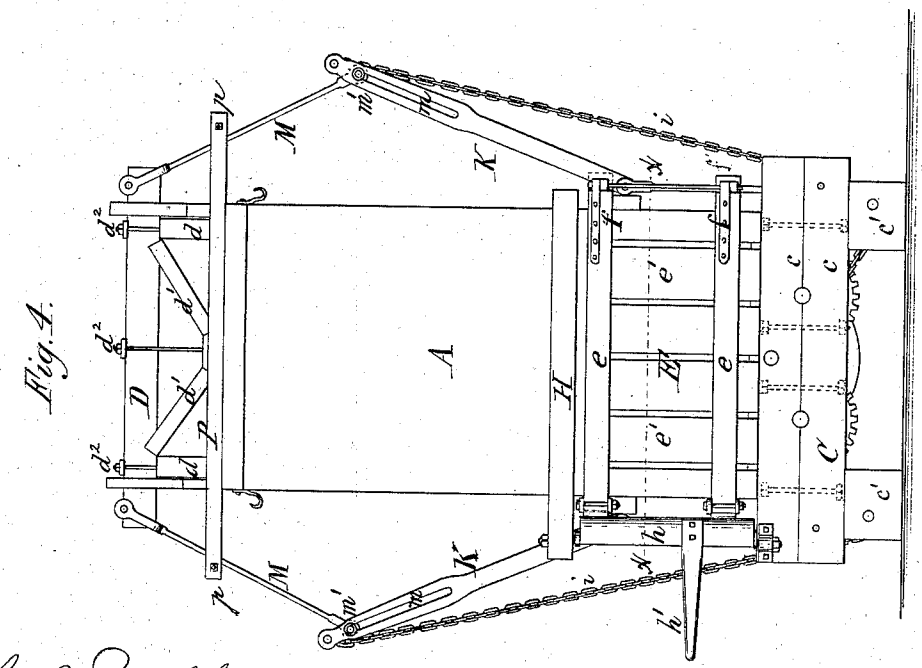


Fig. 4.



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UNITED STATES PATENT OFFICE.

NATHAN W. HERRING, OF MILLPORT, PENNSYLVANIA, ASSIGNOR OF ONE-HALF TO FRED B. KEENEY, OF WARSAW, NEW YORK.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 262,043, dated August 1, 1882.

Application filed April 11, 1882. (No model.)

To all whom it may concern:

Be it known that I, NATHAN W. HERRING, of Millport, in the county of Potter and State of Pennsylvania, have invented new and useful Improvements in Baling-Presses, of which the following is a specification.

This invention relates to certain improvements in a baling-press for which Letters Patent of the United States No. 240,707 were granted to me on the 26th day of April, 1881; and it has for its object to expedite the operation of compressing the material and to render the press stronger and more reliable.

My invention consists of the particular construction of the press, as hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, consisting of two sheets, Figure 1 is a vertical section of my improved press. Fig. 2 is an end elevation thereof. Fig. 3 is a central vertical section at right angles to Fig. 1. Fig. 4 is a side elevation of the press. Fig. 5 is a horizontal section in line x x, Fig. 4. Fig. 6 is a vertical section, and Fig. 7 is a horizontal section, of the rear ends of one of the locking-timbers. Fig. 8 is an elevation of one of the leaves of the hinges.

Like letters of reference refer to like parts in the several figures.

A represents the press-box, B the follower, and C the bed-frame upon which the press-box is supported. The upper portion of the ends of the press-box are each provided with a vertical slot, a, through which the beam D of the follower moves. The lower portion of the press-box is provided on its front side with a door, E, which can be opened for the removal of the bale after the operation of compressing is completed. The door E is composed of horizontal bars e, connected by vertical planks e'. The bars e of the door are connected at one end by hinges f with horizontal timbers f', secured to the end of the press-box. The leaves f^2 of the hinges f are attached to the timbers f', and are provided with bolts f^3, forming a continuation of the leaf and extending through horizontal timbers f,[4] secured to the rear side of the press-box, where a very strong connection of the hinge with the press-box is obtained. The opposite ends of the bars e of the door are rounded off on their outer sides, and are secured by bails g, which are attached to the front ends of horizontal timbers g', arranged against the end of the press-box. The rear end of each timber g' is secured to the timber f^4 by means of a tenon, g^2, and a bail or strap, g^3, which surrounds the timber f^4. The tenon g^2 is chamfered off at its inner corner, as shown at g^4, and the timber g' is chamfered off at its outer corner, as shown at g^5, and the tenon is sufficiently loosely fitted in its socket to permit a slight lateral movement of the timber g' toward and from the press-box on the bolt by which the bail g^3 is secured to the bar g'.

H represents a frame which surrounds the press-box above the door E, and h is a vertical locking-cam, which is pivoted with its upper end in the frame H and with its lower end in the supporting-frame C. This cam is arranged opposite the front ends of the bars g', and is provided with a hand-lever, h', whereby it can be turned. Upon closing the door E and turning the bars g' so as to engage the bails g over the ends of the bars e of the door, and then turning the locking-cam h until it assumes the position shown in Fig. 5, the bails g are forced over the rounded ends of the bars e, and the door is thereby firmly locked in place. Upon swinging the cam h away from the bars g' the front ends of the bars having the bails g attached thereto can be readily swung away from the bars e to release the door.

The bed-frame C consists of two parts, arranged side by side lengthwise of the press, and each part consists of two horizontal timbers, c c, arranged one upon the other and secured together by screw-bolts, as indicated by dotted lines in Fig. 4. The ends of the bed-frame are supported by legs or blocks c'.

The follower B is connected with its beam D by vertical end pieces, d, and diagonal intermediate braces, d', the parts being secured together by vertical screw-bolts d^2. By this construction a light and very strong follower is secured.

I I represent two horizontal drums arranged between the side pieces of the frame C, and i are chains, ropes, or cables which are attached to the drums I, and which run from said drums down-

ward over guide-pulleys J, which are journaled in the legs c' of the bed-frame. The shafts of the drums turn in journal-boxes seated in the contiguous faces of the two horizontal timbers $c\,c$, which constitute each side of the bed-frame C, so that upon separating said timbers the journal-boxes can be readily removed for making repairs. The chains i are attached with their opposite ends to the outer ends of levers K, which are arranged at both ends of the press. The inner ends of the levers K are pivoted at l to upright rods or arms L, which are pivoted with their lower ends to the bed-frame C of the machine. The levers K are connected with the ends of the beam D of the follower by rods or links M. The levers K are each provided with a longitudinal slot, m, in which slides the bolt m', which connects each bar M with the lever K.

The shafts of the drums I are each provided with a gear-wheel, N, and both are rotated simultaneously by a pinion, n, which is mounted on the shaft of a rope-pulley, O, whereby power is applied to the pinion n. Any other suitable mechanism for rotating the pinion may, however, be employed, if desired.

Upon rotating the drums I in the direction of the arrows in Fig. 1 the chains i are wound upon the drums and the outer ends of the levers K are drawn down by the chains. The levers K in turn draw down the follower B by means of the rods M. As the levers K swing downward the bolts m', by which the rods M are attached to the levers K, move inwardly in the slots m, thereby increasing the leverage by which the power acts upon the follower in the same measure as the material is compressed. By locating the guide-pulleys J below the drums I, as shown in Fig. 1, the direction in which the chains stand with reference to the levers K is such as to apply the power to the levers most advantageously.

P represents horizontal bars secured to the sides of the press-box, near its upper end and projecting beyond the ends of the press-box, so that the rods M are confined between the side bars, P. The ends of these bars are connected outside of the rods M by horizontal screw-bolts p, whereby the box is prevented from spreading at the top when the pressing commences.

I claim as my invention—

1. In a baling-press, the combination, with drums I, chains or ropes i, and the follower B D, of the pivoted levers K, provided with slots m, and rods M, attached to the follower with their upper ends, and having at their opposite ends a sliding connection with the slotted portions of the levers K, substantially as set forth.

2. The combination, with the press-box A, provided with timbers $f'\,f^4$, of the door E and combined hinges and bolts $f\,f^3$, whereby the door is attached to the timbers $f'\,f^4$, substantially as set forth.

3. The combination, with the press-box A, provided with timbers f^4, of the locking-timbers g', provided with tenons g^2, constructed as described, and straps or bails g^3, substantially as set forth.

4. The combination, with the press-box A, of the supporting-frame C, composed of horizontal timbers $c\,c$, arranged one above the other, and supported on legs c', drums I, journaled between the contiguous faces of the timbers $c\,c$, and guide-rollers J, supported in the legs c' below the drums I, substantially as set forth.

5. The combination, with the press-box A, follower D, actuating-levers K, and connecting-rods M, of the side pieces, P, secured to the press-box near its upper end, and transverse bolts p, connecting the side pieces, P, on the outer sides of the connecting-rods M, substantially as set forth.

NATHAN W. HERRING.

Witnesses:
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