

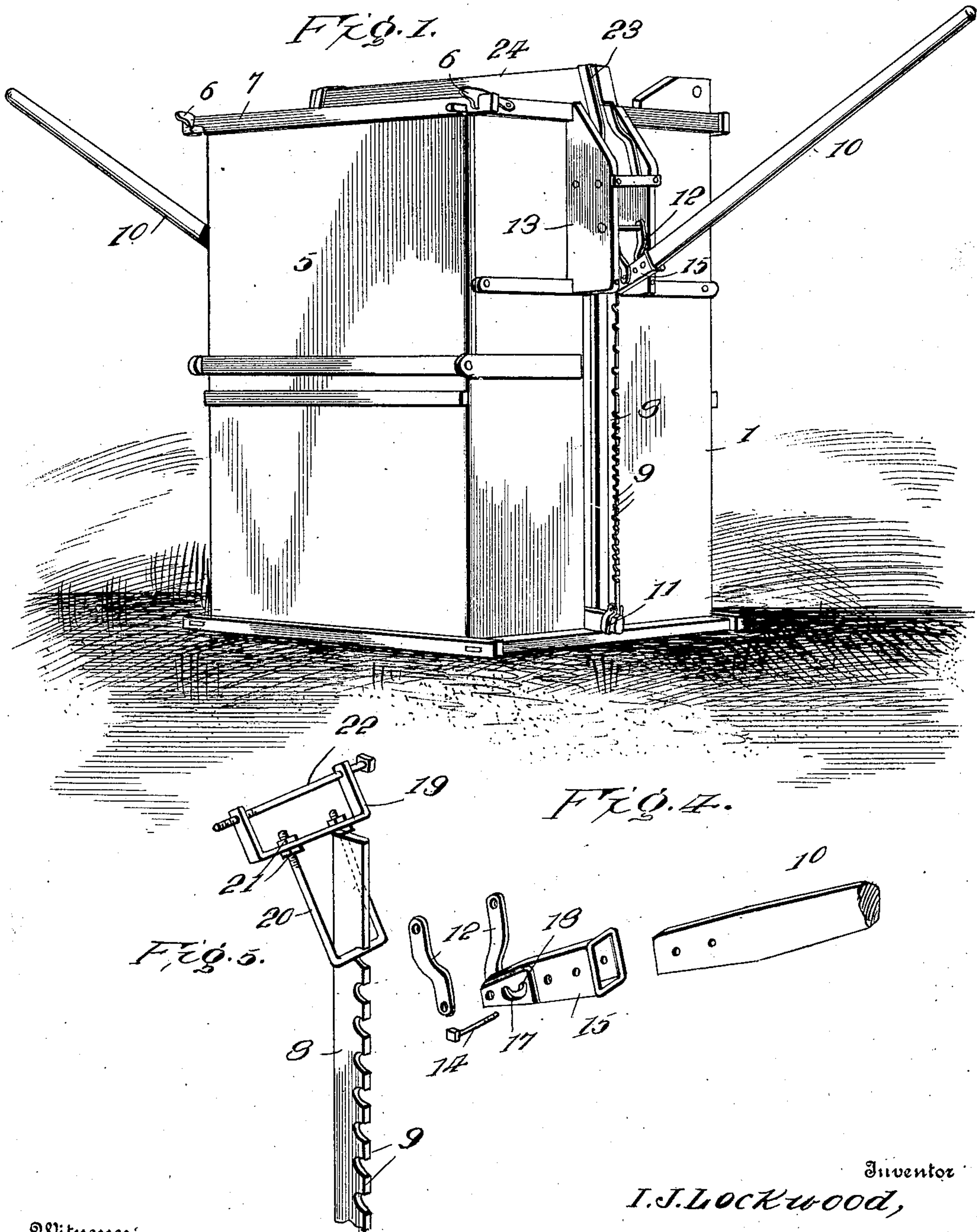
No. 828,325.

PATENTED AUG. 14, 1906.

I. J. LOCKWOOD.  
PRESS.

APPLICATION FILED OCT. 7, 1905.

2 SHEETS—SHEET 1.



Witnesses

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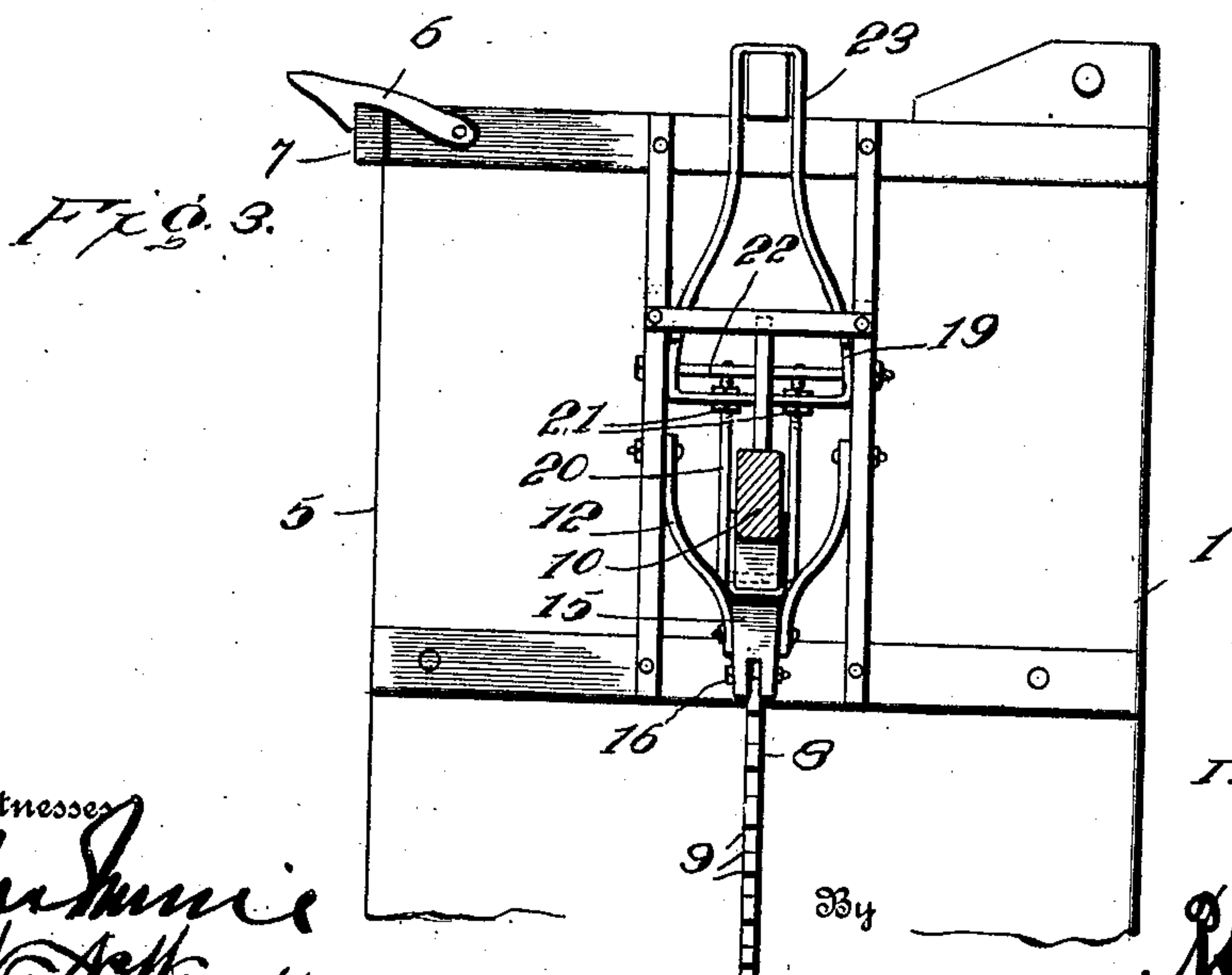
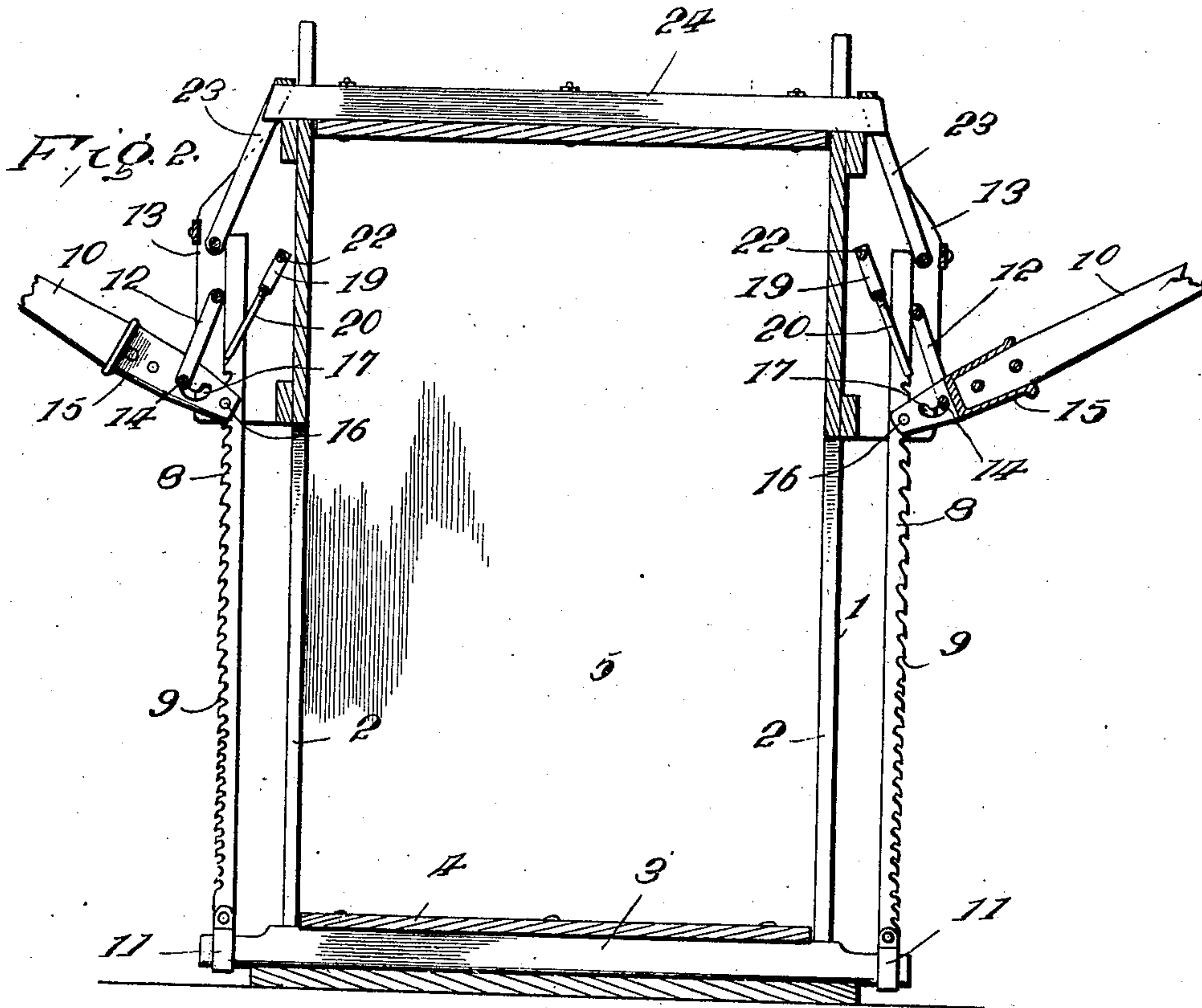
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# UNITED STATES PATENT OFFICE.

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## PRESS.

No. 828,325.

Specification of Letters Patent.

Patented Aug. 14, 1906.

Application filed October 7, 1905. Serial No. 281,845.

*To all whom it may concern:*

Be it known that I, IRVING JOHN LOCKWOOD, a citizen of the United States, residing at Weston, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Presses, of which the following is a specification.

This invention aims to devise a novel operating mechanism for the follower of presses for condensing hay, straw, fodder, cotton, or other material to be baled or compressed into a compact form to economize space and facilitate handling.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and accompanying drawings.

While the invention may be adapted to different forms and conditions by changes in the structure and minor details without departing from the spirit or essential features thereof, still the preferred embodiment is shown in the accompanying drawings, in which—

Figure 1 is a perspective view of a press provided with operating mechanism embodying the invention. Fig. 2 is a vertical central sectional view of the press. Fig. 3 is a side view showing the operating-lever in section. Fig. 4 is a detail perspective view of the inner end of the operating-lever, the metal tip therefor, and the swinging support, the parts being separated and arranged in the relative position which they will occupy when assembled. Fig. 5 is a detail perspective view of a portion of the toothed draft-bar and the detent cooperating therewith.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The baling-chamber 1 is provided in opposite sides with slots 2, in which operate the projecting ends of a beam 3, extending beneath the follower 4. A portion of one side of the baling-chamber is hinged, as shown at 5, and is held closed by means of catches 6, pivoted at one end to the baling-chamber and adapted to engage over the projecting ends of a batten 7, secured to the end of the hinged part 5.

The baling-chamber may be of any de-

sign and is illustrated simply to show the application of the invention which resides in the operating mechanism.

Draft-bars 8 are clipped or otherwise made fast at their lower ends to the projecting ends of the beam 3 and are provided along their outer edge with teeth 9, with which the engaging ends of operating-levers 10 cooperate to effect movement of the follower 4 in the operation of the press. The teeth 9 of the draft-bars are unequally spaced proportionate to the degree of compression of the bale. The teeth at the upper ends of the draft-bars are spaced a greater distance than the teeth at the lower ends thereof, the distance between the lower teeth being preferably one-half the distance between the upper teeth. The draft-bars are adapted to have a limited play at their upper ends, and to prevent straining they have pivotal connection at their lower ends with the beam 3, said connection being between the bars and the clips 11 or like fastenings.

The operating-levers are mounted upon a swinging support consisting of corresponding links 12, which are pivotally connected at their upper ends with a frame 13, secured to or forming a part of the baling-chamber, said links being connected at their lower ends by means of a pin or bolt 14, which constitutes the fulcrum upon which the operating-lever is mounted. In the preferable construction the operating-lever is of wood and is metal-tipped, the tip 15 having a socket at one end, in which the wooden portion of the operating-lever is secured, and having spaced members at the opposite end to embrace opposite sides of a draft-bar. A pin 16 is supported in openings provided in the outer ends of the spaced portions of the tip 15 and is adapted to engage with the teeth of the draft-bars and effect movement thereof in the operation of the press. The swinging support of each operating-lever has adjustable connection therewith to admit of varying the effective leverage. This adjustment may be accomplished in any manner. As shown, a slot 17 is provided in the spaced portions of the clip 15, and seats 18 project from said slot to receive the fulcrum portion 14 of the swinging support. In the event of the operating-lever having two adjustments, as shown, the slot 17 is curved, and the ends thereof constitute the seats 18, in which the fulcrum 14 obtains



a bearing. In the initial operation after the press has been filled with the material to be compressed the resistance is slight because of the loose condition of the material. Hence the leverage of the operating-lever may be great and the coarse teeth advantageously used to effect a rapid movement of the follower; but when the material has been compressed to a degree to require considerable force the leverage may be decreased by shifting the fulcrum 14 nearer to the point of engagement of the operating-lever with the draft-bar, and in the present instance this may be quickly effected by moving the fulcrum 14 along the slot 17 from the outer end thereof to its inner end. At this time the draft-bars would have moved to a position to bring the fine teeth in position to be engaged by the pin 16 of the operating-lever. Therefore a uniform movement of the operating-lever will insure its positive engagement with the draft-bar. It is to be understood that adjustment between the operating-lever and its swinging support may be effected in any manner and that provision other than illustrated may be resorted to for enabling positive connection being had between the operating-lever and the draft-bar. A detent coöperates with each draft-bar and is preferably adjustable in length and is shown most clearly in Fig. 5 and consists of a U-shaped frame 19 and a U-shaped frame 20, the latter having adjustable connection with the horizontal bar of the frame 19 and secured in an adjusted position by pairs of set-nuts 21, fitted to the threaded end portions of the side members thereof. A bolt 22 or like fastening connects the detent with the frame 13. The draft-bar 8 passes through the frame 20, and the cross-bar of the latter is adapted to engage with the teeth thereof. By having the parts pivotally mounted they are adapted to conform to the changing position of the pin 16 in the operation of the press without effecting binding or resulting in straining of the mechanism. Bails 23 connect the frames 13 with the projecting ends of a beam 24, arranged across the upper end of the baling-chamber. In practice the follower 4 occupies the lowest position in the baling-chamber, and the part 5 is swung outward and downward at its upper end to admit of the material to be baled being supplied to the press, and after the latter has been filled or charged the part 5 is turned back into normal position and made secure by means of the catches 6. The operating-levers are adjusted with reference to their swinging supports 15 to obtain a maximum leverage, so as to obtain a rapid movement of the follower in the initial operation of pressing the material. When great force is required, due to compression of the material, the operating-levers are changed, so as to decrease the lev-

erage between their engaging parts 16 and the fulcrum 14 in the manner stated, when the operation may be proceeded with without necessitating the expenditure of excessive manual force.

While the actuating mechanism herein disclosed is peculiarly adapted for presses designed for condensing fibrous material, nevertheless said mechanism may be embodied in the construction of presses for pressing the juices from fruit, such as employed in the manufacture of cider, wine, and like beverages. While the draft-bars 8 preferably have their teeth unequally spaced, yet it is to be understood that the invention is adapted to be applied to such presses as may embody draft-bars provided with teeth equally spaced. As a result of having the lower teeth spaced one-half the distance of the upper teeth the operating-lever may be moved a like distance throughout the operation of the press, and after the engaging ends of the operating-levers have cleared the upper set of teeth and begun to coöperate with the lower teeth one of the latter is skipped at each operation of said levers. Hence the degree of movement of the follower is the same for each movement of the said levers.

Having thus described the invention, what is claimed as new is—

1. In operating mechanism of the character specified, the combination of a draft-bar, an operating-lever having a slot and a series of seats in communication with said slot, and a fulcrum-support movable in said slot and adapted to enter in one of the seats in communication therewith.

2. In operating mechanism of the character set forth, the combination of a draft-bar, an operating-lever having spaced portions to embrace opposite sides of the draft-bar, means connecting said spaced portions and adapted to make positive engagement with the draft-bar, and a variable fulcrum-support for the operating-lever.

3. In operating mechanism of the character set forth and in combination with a draft-bar and actuating means for intermittently operating the same, a detent adapted to secure the draft-bar during the intervals between the operation of the actuating means, said detent comprising a pair of frames and means adjustably connecting said frames to admit of lengthening and shortening the detent.

4. In operating mechanism of the character set forth and in combination with a draft-bar and actuating means for intermittently operating the same, of a detent adapted to secure the draft-bar during the intervals between the operation of the actuating means, said detent comprising a pair of frames having adjustable connection, each of said frames being of substantially U form and one



of said frames having the end portions of its side members threaded and passed through the draft-bar of the other frame, and set-nuts fitted to said threaded ends for securing the frames when adjusted.

5 5. In operating mechanism of the character set forth, the combination of a draft-bar provided with teeth unequally spaced and having the distance between them decreasing from one end toward the other, and an operating-lever adapted to make positive engagement with said teeth.

10 6. In operating mechanism of the character set forth, the combination of a draft-bar provided with teeth unequally spaced and having the distance between them decreasing from one end toward the other, an operating-lever adapted to engage with the

teeth of the draft-bar, and a variable fulcrum-support for said operating-lever.

20 7. In operating mechanism of the character set forth, the combination of a draft-bar provided with teeth unequally spaced and having the distance between them decreasing from one end toward the other, an operating-lever for coöperation with the teeth of the draft-bar and mounted upon a shift-able fulcrum, and an adjustable detent for conjoint operation with the teeth of the draft-bar.

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

IRVING JOHN LOCKWOOD. [L. s.]

Witnesses:

CHAS. R. MOREHOUSE,  
CARRIE L. MOREHOUSE