(No Model.) 3 Sheets—Sheet 1.

P. LORD.

PRESS.

No. 280,840. Patented July 10, 1883.

Fig. 1.

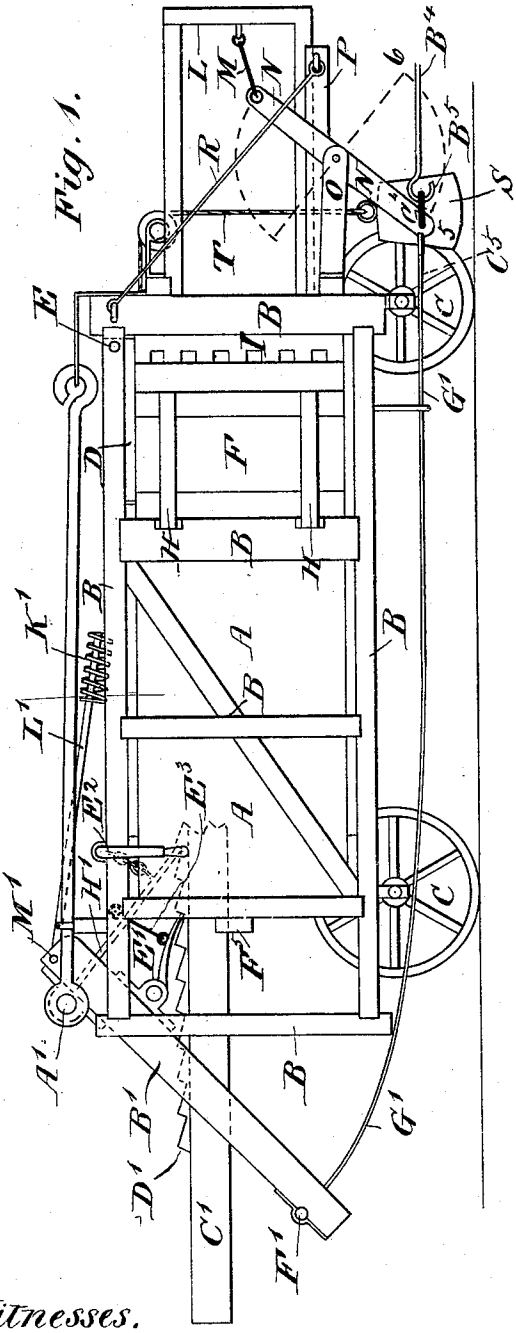
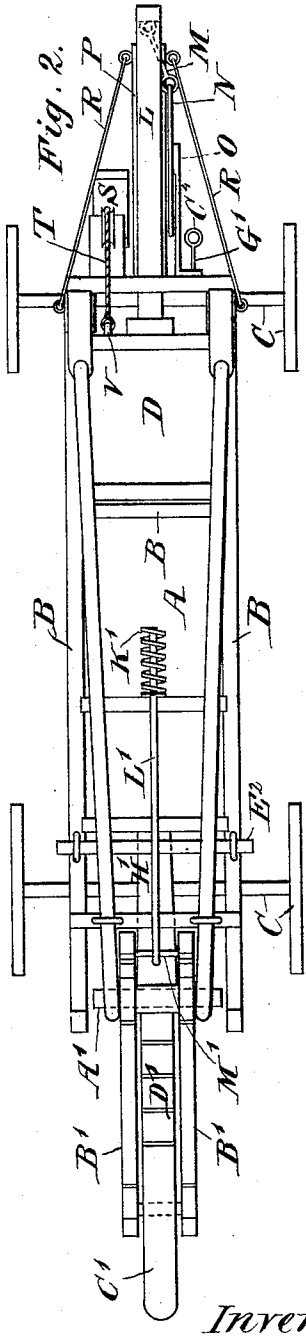


Fig. 2.



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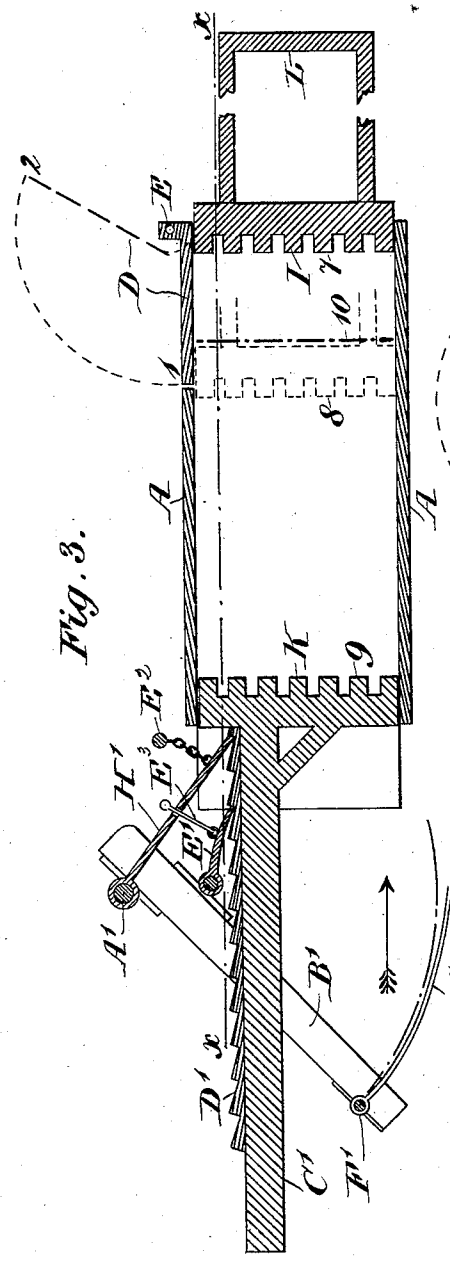


Fig. 3.

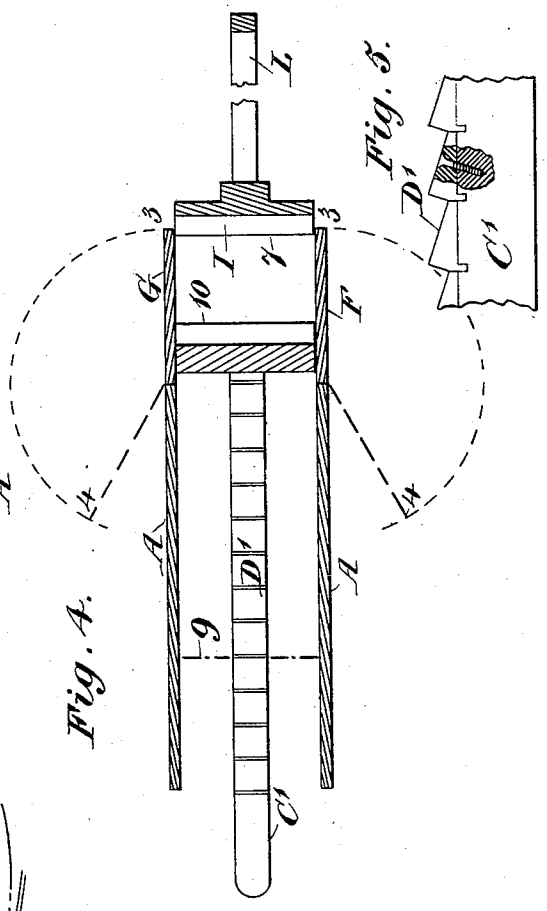


Fig. 4.

Fig. 5.

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(No Model.) 3 Sheets—Sheet 3.

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Fig. 6.

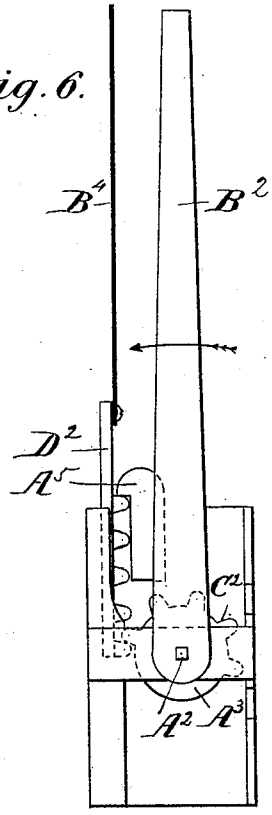


Fig. 7.

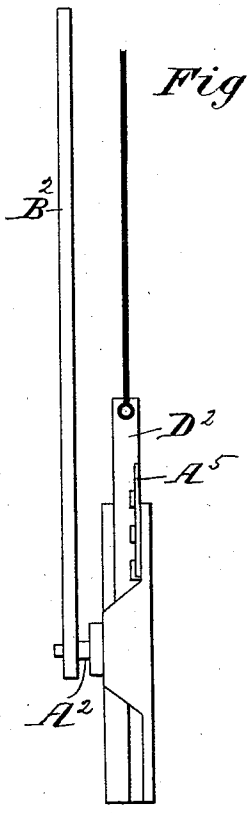
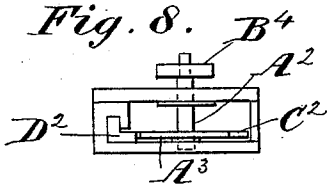


Fig. 8.



Witnesses.

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UNITED STATES PATENT OFFICE.

PETER LORD, OF MONTREAL, QUEBEC, CANADA, ASSIGNOR OF TWO-THIRDS TO JEAN BAPTISTE VINET AND AVILA SERAPHIN VINET, BOTH OF SAME PLACE.

PRESS.

SPECIFICATION forming part of Letters Patent No. 280,840, dated July 10, 1883.

Application filed April 17, 1883. (No model.)

To all whom it may concern:

Be it known that I, PETER LORD, of the city of Montreal, District of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements in Presses; and I do hereby declare that the following is a full, clear, and exact description of the same.

This invention has reference more particularly to improvements in hay-presses, or presses used for other such like substances, providing certain improvements in the construction and consequent operation of the press. The casing in which the pressing is performed is provided with two rams, which alternately fulfill the functions of follower-blocks and bed-blocks, the whole arrangement thus enabling pressing to be done with less manual labor. The other improvements will be fully described by the following description, and set forth in the claims.

In the drawings hereunto annexed similar letters of reference indicate like parts.

Figure 1 is a side elevation of a press embodying my invention. Fig. 2 is a plan of Fig. 1. Fig. 3 is a vertical central section of casing and rams, &c. Fig. 4 is a horizontal section of casing and rams on line *x x*, Fig. 3. Fig. 5 is a detail, showing a preferable manner of attaching the rack-teeth to one of the projections of one of the rams. Fig. 6 is a plan of a capstan motion, through which power is applied to operate the press. Fig. 7 is a side elevation of Fig. 6. Fig. 8 is an end view of Fig. 6.

Letter A is a casing of ordinary construction, preferably made rectangular, surrounded with a suitable and ordinary frame-work, B, to assist and support the casing to withstand the strains the said casing will be subjected to; also for attaching various of the working parts, &c., upon. The frame-work is shown only in Figs. 1 and 2.

C are wheels and axles of any ordinary construction, which may be provided when a perambulating press is required, and will be omitted in a stationary press.

The casing A, consisting of a rectangular boxing, has three doors, one, D, on its upper side, pivoted at E to the frame-work, so that it can be turned from the position (marked 1) shown in solid lines in Fig. 3 to that shown by a dotted line, (marked 2,) so that in the position 1 this door forms a continuation or completion of the top of the casing, while when in the position 2 a considerable opening is given by which to introduce within the casing the matter or substance to be pressed.

F and G (see Figs. 1 and 4) are doors in the sides of the casing, which, when in the position 3, form a continuation or completion of the sides of the casing, and when opened to the position 4 expose the pressed substance for binding and removal from the press, as will be hereinafter described. Each of the doors F and G are attached by hinges H to one of the bars of the frame B. The means by which the above-mentioned doors D, F, and G are secured when they are shut are not shown, as these may be of any of the ordinary forms in use for similar doors. Now, from what has been above said it will be understood that by the casing proper, A, and the said doors a rectangular tube is formed, and of this tube two rams, I and K, form the ends and complete the surfaces between which the gathering and compressing of the hay or other substance is to be performed.

I will now describe the means by which the ram I is operated.

To I is attached a projection or frame, L, to which is attached a link, M, and lever N. This lever is pivoted to a bracket, O, secured on the frame-work B. P is a guide, the inner end of which is attached to a bar of the frame-work B, and the outer end is carried by stays R, arranged as shown. Therefore by P and I sliding within the casing the whole is guided to move in a straight line with the line of the center line of the casing. By operating the lever N and turning it from the position shown by solid lines at 5 (see Fig. 1) to the position marked 6 (indicated by the dotted line) the ram I is at the same time moved from the position 7 to that marked 8. (See Fig. 3.) The return of the ram I from the position 8 back to 7 is caused by a weight, S, attached by a cord or chain, T, to an eye, V, on the outside of I, the cord passing over a pulley, as shown. In providing a motor or machine for moving

the lever N by power, it is only necessary to employ such a one as will move the lever N from the position 5 to that 6, and then release it and allow the weight to bring it back again to 5. It is necessary for the satisfactory working of the machine that the strokes given to the lever N should be equal. I wish to call attention to this point, and to have it borne in mind, because the peculiar arrangement of the capstan motion, hereinafter described, is particularly adapted for moving the lever N a given amount and then releasing it. It will be observed that when I is at the position 7 (see Fig. 4) it is not quite withdrawn from being between the doors F and G.

The ram K is provided with an extension, C′, upon which rack-teeth D′ are secured for pushing forward the ram from the position at 9 (shown in solid lines in Fig. 3 and by a chain line in Fig. 4) to near or about the position at 10. (Shown in solid lines in Fig. 4 and by a chain line in Fig. 3.) The projection C′ is guided by the bar F^5, being arranged for that purpose.

A′ is a pivot-pin, carried as shown, or by any suitable means by which it is secured in a relative position as regards the casing A. This pin forms the fulcrum of the lever B′, or, it might be more proper to say, the levers B′, because there are two of them, which, however, are attached and work together as one. To these levers is attached a pawl, E′, to act upon the rack-teeth D′. The levers B′ are attached together by a pin or other connection, F′, to which is also attached the rod G′, by which they are operated. The size of the rack-teeth D′ will be regulated in their length, so that the pin F′ moving an equal distance to that moved by the end of the lever N it will move the pawl E′ the amount of one rack-tooth. This enables the levers B′ to be operated by the same capstan motion by which the lever N is operated.

On the pin A′ is placed a retaining-pawl, H′, which retains the ram in position while the pawl E′ is moving back to take the next rack-tooth. As it is necessary to keep these pawls up while the ram K is returning from the position 10 to that 9, a chain and handle, E^2, are attached to H′, and a connection, E^3, is provided between E′ and H′ for accomplishing this purpose.

As before remarked, the capstan motion, hereinafter to be described, is arranged to pull only in one direction and then release. Therefore its pulls the ends of the levers B′ in the direction of the arrow in Fig. 3 and then releases, when they are brought back to the position shown by a spring, K′, attached to a rod, L′, connecting the spring with a pin, M′, in the upper ends of the levers B′. I prefer to make and attach the rack-teeth separately on the projection C′, as shown in Fig. 5.

The capstan motion by which the above-described press is operated is constructed as follows: To a shaft, A^2, is attached a lever, B^2, or other appliance, by which power may be communicated to revolve the shaft A^2, on which is secured a disk, A^3, having teeth C^2, extending, as shown, on only a part of the periphery of the disk. These engage with the teeth of a rack, D^2, guided in the base by which the shaft A^2 is supported, or in any other desired manner, so that the teeth of the two properly engage and the rack is able to slide freely and fairly. The disk A being revolved continuously in the direction indicated by the arrow in Fig. 6, it draws the rack back until the teeth C^2 have cleared those of the rack, when, by the action of the spring K′ or weight S, as the case may be, the rack returns to the position shown in Fig. 6, its distance of return being governed by the stop A^5, where, resting against this stop, it is in the proper position for the teeth C^2 to engage with the rack the next time they come round by the continued revolutions of the shaft A^2.

To the rack is attached a rod, B^4, the end of which is provided with a hook, (see Fig. 1) B^5, for engaging with the ring or link C^4 in the end of the lever N; also for engaging with an eye, C^5, formed on the end of the rod G′.

The press and capstan having been secured in the proper relative position with regard to one another, they are operated in the following manner: The doors F and G are shut and secured and the door D placed in the position 2—that is to say, open. The pawls E′ and H′ are raised to allow the ram K to retire to the position 9, if it is not already there. The hook B^5 is engaged with the lever N and the capstan set in motion, by which the ram I is now operated as a ram or follower-block. Through the door D the substance to be pressed is introduced, as desired, at each time the ram I is drawn back by the weight to the position 7. This charging of the casing is carried on until the desired quanity to form a bale is contained within it. By the action of I the substance is so far compressed or formed into a compact mass. The hook B^5 is now disconnected from the lever N and the door D shut and secured. The hook is then connected to the eye C^4 of the rod G′ to operate the levers B′ and pawls E′, which force K forward, which acts as a ram or follower-block, while I remains stationary at 7 and performs the functions of a bed-block. When the pawl has forced the ram back the desired amount, the hook B^5 is disengaged, the doors F and G are opened, and the binding and removal of the bale is accomplished, and the press is arranged again for the next bale.

What I claim, and wish to secure by Letters Patent, is as follows:

1. The combination of a casing arranged substantially as described, with two rams operated alternately as rams or follower-blocks, and as bed-blocks, said rams being provided with an operating mechanism, the whole substantially as described.

2. The combination of the ram I, lever N,

and actuating-capstan, as described, weight S, casing A, and now stationary bed-block K, substantially as described.

3. The combination of the ram K, having projection, provided with rack-teeth D′, levers B′, pawls E′ and H′, and actuating-capstan, as described, spring K′, and now stationary bed-block I, substantially as described.

4. The combination of the casing A, having doors D, F, and G, with rams I and K, operated as described, substantially as set forth.

PETER LORD.

Witnesses:
CHARLES G. C. SIMPSON,
WM. F. LIGHTHALL.