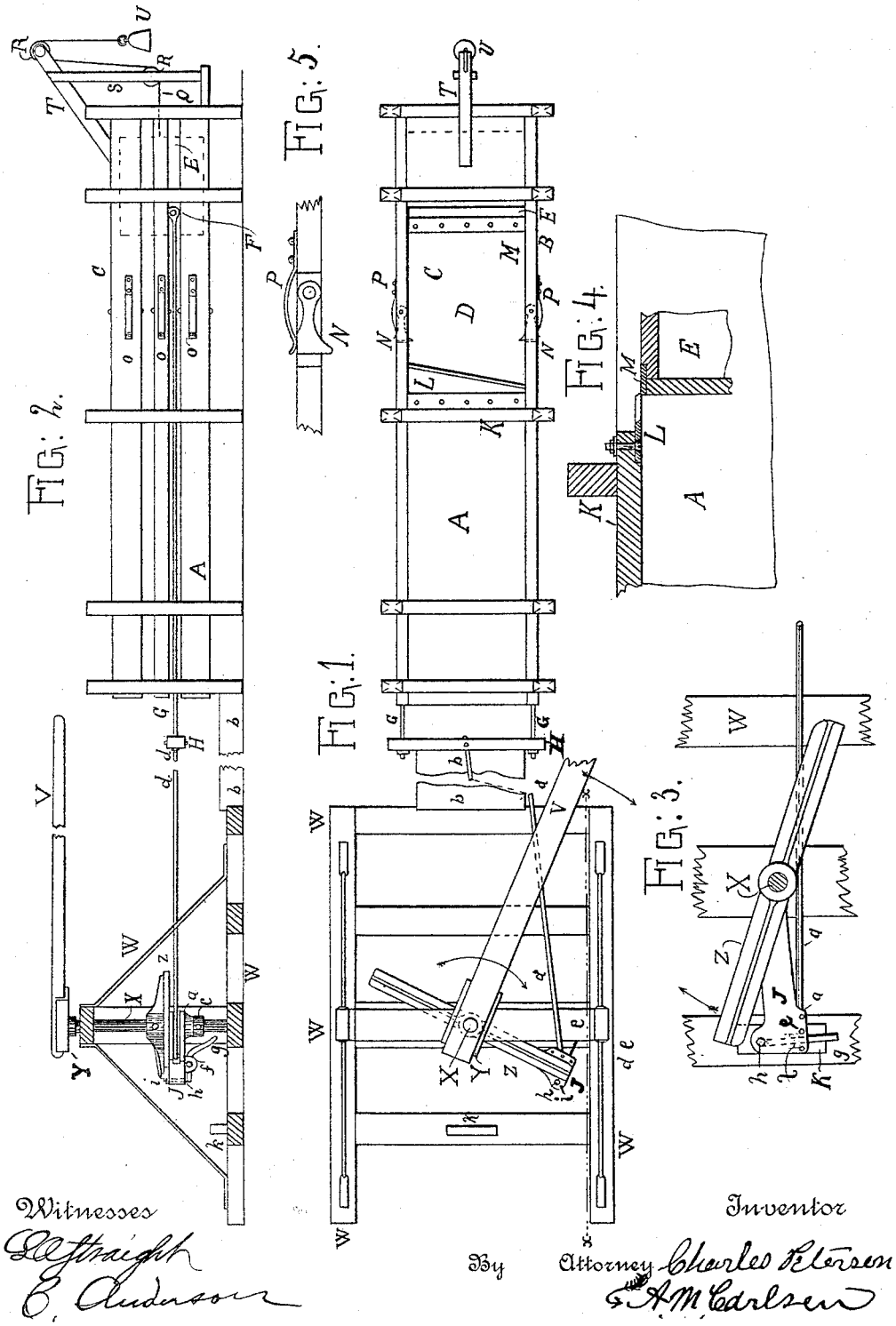
(No Model.)

C. PETERSON.

BALING PRESS.

No. 454,495. Patented June 23, 1891.



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CHARLES PETERSON, OF MAPLE PLAIN, MINNESOTA.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 454,495, dated June 23, 1891.

Application filed April 28, 1890. Serial No. 349,790. (No model.)

To all whom it may concern:

Be it known that I, CHARLES PETERSON, a citizen of the United States, residing at Maple Plain, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Baling-Presses; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

My invention relates to the so-called "continuous" baling-presses, in which a horizontal trunk or bale-chamber open at the delivery end is provided near the opposite end with a feed-opening and feed-chamber formed out of a part of the trunk and with an internal reciprocating plunger, by which the successive charges of hay are advanced against those which preceded them, and thus a body or mass accumulated or advanced from the feed-chamber toward and through the baling-chamber and its delivery end.

The machine is much the same as that covered by my United States Patent, No. 338,597, issued August 28, 1888; but, having made certain improvements and simplifications that render the machine more efficient in operation and much cheaper to manufacture, I desire to secure a patent on said improvements.

The invention consists in a mechanism of peculiar construction and arrangement for effecting the operation of the plunger through the instrumentality of a rotating sweep and a weighted contracting-cord, as will all be readily understood from the accompanying drawings, in which—

Figure 1 is a plan view of the press. Fig. 2 is a side view, with the horse-gear shown in section on the line X X of Fig. 1. Fig. 3 is a detail view showing in plan the operating and tripping mechanism at the point or position of tripping. Fig. 4 is a sectional side view of a portion of the bale-chamber and the plunger, with the shears or knives shown in contact for cutting the hay. Fig. 5 is an enlarged plan view of one of the spring-operated arms and springs, with the adjacent plank shown in section.

In Figs. 1 and 2 the drawings are shortened about one-third of their length by breaking out a portion of the plank *b* and the operating-rod *d*, as may be readily observed.

The press proper consists, essentially, of a bale-chamber A, with an extension B, that forms the feed-chamber C, with the feed-opening D at its top side, and the plunger E, having side extensions F, projecting through slots in either side of the chamber C, and to which are connected rods G, guided in the frame of the said bale-chamber and joined beyond the same by a suitable cross-piece H. To the cross-piece H is pivotally connected the operating-rod *d*, the opposite end of which connects pivotally with the single arm J of the horse-gear, hereinafter to be described, and which in the present instance is the motive power for operating the press. The cover or upper side K of the bale-chamber is provided at the under side of the end adjacent to the plunger and feed-opening D with a steel knife L, close under the edge of which passes the steel M, that is fixed at the front end of the plunger E, as best shown in Fig. 4.

The feed-chamber is further provided with several (in the present instance six) arms N, pivoted in slots O, three of them in each side wall of the feed-chamber. The free ends of said arms project partly into the feed-chamber, as shown in Figs. 1 and 5, and are held in that position by the springs P pressing them against stops. (Not shown.)

To the end of the press opposite the power mechanism are fixed the beams S and T, carrying the pulleys R R, over which passes a rope or chain Q, attached at one end to the plunger E and at the other end to a weight U, the arrangement being such that the weight tends at all times to draw the plunger in a direction away from the power mechanism, which will now be described.

The power mechanism, which in the present instance is shown as a horse-gear, being provided with a sweep V, to which horses are attached, but which may, of course, be operated by any other suitable power than horses, consists of a suitable frame W W, fixed by a retaining-plank *b* at the proper distance from the press. In the said frame W is mounted in suitable bearings the shaft X, to the upper end of which the sweep V is keyed or otherwise fixed through the means of a casting Y.

Upon the said shaft X is also a double-armed piece Z, keyed or otherwise fixed, so as to rotate together with the shaft and the sweep. Close below the double arm Z is further placed loosely upon the shaft a single arm J, which is formed with two lips or projections *a*, between which the end of the operating-rod *d* is pivoted by a pin or bolt passed through a hole near the end of it and through the lips *a*. The drawings show three such holes *e* in the lips *a;* but it is evident that any desired number of holes may be used, so as to admit of readily shortening or lengthening the stroke of the plunger, and thus by a change of leverage regulate the resistance to suit the motive mower at disposal. The single arm J is further provided with two downwardly-projecting lips *f*, between which is pivoted a trip-lever *g*, that carries at its shorter end the tripping-bolt *h*, which consists of a straight piece of steel or other hard metal loosely fitted in a hole in the arm J, wherein it may slide upward, so that its top end *i* engages with either end of the rotating double arm Z, as shown in Figs. 1 and 2; or it may slide downward, and thus disengage said double-armed piece and let the arms pass over its end, as shown in Fig. 3.

In operation the shaft X is by the sweep V or other power rotated in one direction only, which in the present instance is that of the arrows. As the shaft and piece Z rotate, both arms of the latter engage alternately with the end *i* of the tripping-bolt *h*, thereby swinging the loose arm J until the downwardly-bent end of the tripping-lever *g* engages with the lug *k*, projecting upward from the frame W, whereby it is lifted against the resistance of its weight, and thereby swings the opposite end of the lever downward, and the tripping-bolt carried thereby becomes disengaged from the arm of the piece Z. The arm J as soon as released is, through the means of the weighted cord Q, plunger E, and rods G and *d*, quickly returned to its normal position, pointing from the shaft toward the press. As soon as the tripping-lever *g* moves away back from the lug *k* its own weight draws it downward, and thereby brings the other end upward and the tripping-bolt *i* into position for engagement with the next arm of the piece Z, and the operation just described is repeated. In this way the rotary motion of the shaft is converted into an oscillating motion of the single arm J and the rod *d* and a reciprocating motion of the plunger back and forth through the feed-chamber, each time forcing a charge of hay or other materials that may have been put into the feed-chamber into the bale-chamber, where it is retained by the spring-operated arms N, while the plunger is retracted to give room for the next charge to be put into the feed-chamber. Said spring-operated arms are also used for retaining the dividing-boards (not shown) that divide the bales of hay in position until hay is accumulated on both sides of them to keep them in the vertical position required. Every time the plunger enters the baling-chamber the knife M passes so closely under the knife L that the two form a shear that cuts the hay outside the chamber entirely loose from the hay inside the chamber, and thus prevents wedging of the hay between the plunger and the end of the plank K of the bale-chamber.

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

1. In the herein-described baling-press, the combination of the rotary shaft X and double-armed piece Z with the oscillating single arm J, provided with the tripping-slide *h*, operated by the trip-lever *g*, the lug *k*, and the pulling-pitman *d* for operating the plunger of the press, substantially as described, and for the purpose set forth.

2. In the herein-described continuous baling-press, the combination of the rotary shaft X and the double arm Z, the single arm J, provided with the tripping-slide *h*, which is operated by the trip-lever *g*, actuated by its own gravity and by the lug *k*, said single arm J being also provided with a series of holes, and a pulling-pitman adapted to be connected to either of the said holes in the single arm J, thereby shortening or lengthening the stroke of the plunger of the press, substantially as shown, and for the purpose set forth.

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

CHARLES PETERSON.

Witnesses:
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