(No Model.)

2 Sheets—Sheet 1.

J. A. SMITH.

BALING PRESS.

No. 424,367.

Patented Mar. 25, 1890.

Fig. 1.

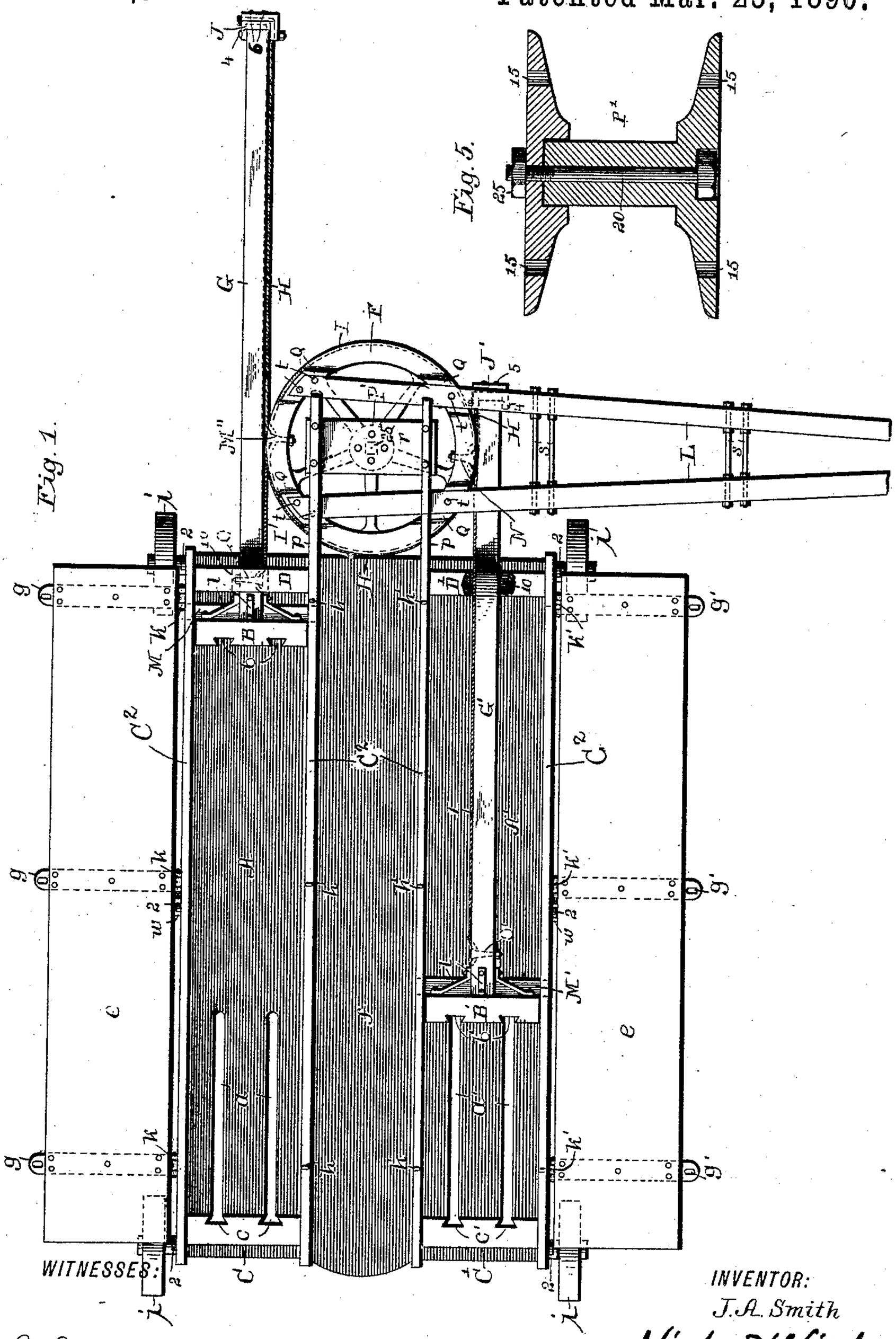

Fig. 5.

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(No Model.) 2 Sheets—Sheet 2.

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Fig. 2.

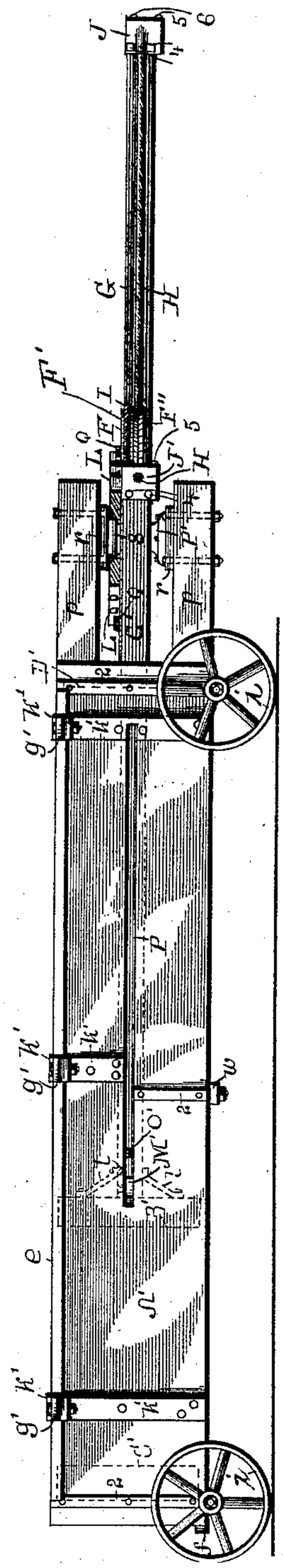

Fig. 3.

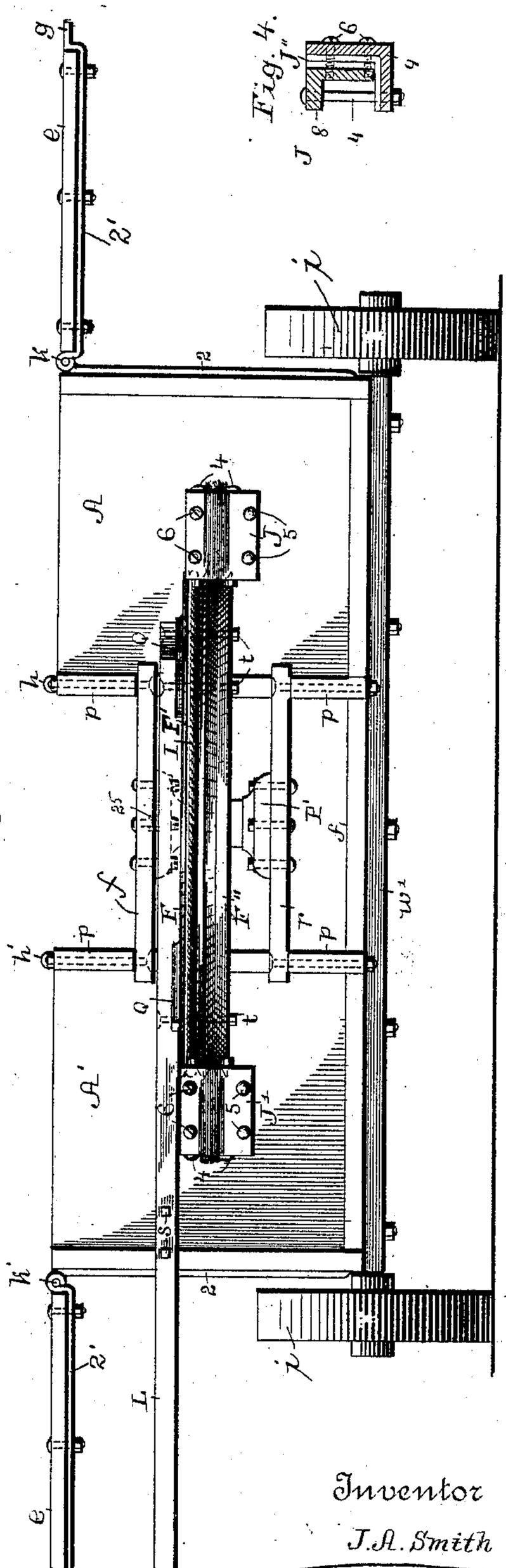

Fig. 4.

Witnesses

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UNITED STATES PATENT OFFICE.

JAMES A. SMITH, OF KANSAS CITY, KANSAS.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 424,367, dated March 25, 1890.

Application filed July 27, 1889. Serial No. 318,810. (No model.)

To all whom it may concern:

Be it known that I, JAMES A. SMITH, of Kansas City, Wyandotte county, Kansas, have invented certain new and useful Improvements in Baling-Presses, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

This invention relates to baling-presses; and it consists in certain peculiarities in the construction, arrangement, and combination of the various parts thereof, as will be more fully described, and particularly pointed out in the subjoined claims.

In the accompanying drawings, illustrating my invention, Figure 1 is a top plan view with the lids of the baling-chambers opened to show the interior construction of said baling-chambers and also the plungers operating therein, one of said plungers being shown in the position it occupies in the act of compressing hay, while the other plunger is shown retracted to permit filling of the chamber within which it operates with hay. Fig. 2 is a side elevation of the press. Fig. 3 is a front end view enlarged. Fig. 4 is a detail sectional view of the clamp which serves to secure the ends of the cables to the stems of the plunger-heads. Fig. 5 is a vertical section of the shaft upon which is mounted the double-grooved pulleys.

The same letters and figures of reference are used to designate the same parts in the several views.

The frame of my baling-press is supported by the wheels *i*, which are mounted upon the extremities of the axles *w'*.

A and A' designate baling-chambers, which are located at opposite sides of the main frame and extend longitudinally from end to end thereof. These baling-chambers are formed by the side pieces C^2 and the vertical blocks C C' D D', which are located as shown best in Fig. 1. A platform *f* serves to separate the baling-chambers, and upon this platform stands the workman who charges said baling-chambers. For convenience this platform is located a suitable distance below the top of the baling-chambers, as shown in Fig. 3. The baling-chambers are closed at their tops by lids *e*, to the upper surface of which are secured by bolts or rivets rods 2', having their inner extremities bent to form eyes which receive bent ends of vertical rods 2, secured to the sides of the press, whereby said lids are pivotally connected at *k k'*, Fig. 3. Operating within these baling-chambers A A' are plungers, which plungers serve to compress the hay into bales and comprise the heads B B' and forwardly-extending rods or stems G G', said rods or stems operating through apertures 10 in the center of rear walls D and D' of the baling-chambers. The plunger-heads are provided with horizontal cross-pieces M M', the ends of which operate in longitudinal slots P, cut in the side walls C^2 of the baling-chambers. These cross-pieces M M' act both to strengthen and guide the plunger-heads in their operation, and said plunger-heads are further braced at *l l* to their stems G G'.

The inner side walls of the baling-chambers extend forward of the front end of the machine and have secured to them a plate *r*, provided with a central perforation, through which passes a vertical bolt 20, which connects together and supports the casting P'. This casting consists of a lower circular flange cast integral with the shaft, and an upper circular flange or cap which fits upon the end of said shaft, the two being secured by means of said bolt 20, provided with nut 25. The lower circular flange and upper circular flange are each respectively provided with suitable bolts or rivets passing through apertures 15, by which they are secured in position, as is fully shown in Fig. 5. Said casting also serves as a bearing for a pulley F, the periphery of which is formed with double grooves F' F'', the upper of which F' receives a cable I, the ends of which are secured, respectively, to the plunger-stems G G' at the rear of the plunger-heads B B' by means of clips O O', while the lower groove F'' receives a larger cable H, which is secured to the forward end of the plunger-stems by means of clamps J J'. These clamps are formed in two right-angled sections 8 and 9, which are secured to the plunger-stems by means of bolts 4. The sections are so arranged that a space J'' is left between them, in which the ends of the cables rest. The bolts 4, together with screws 5 and 6, serve to tighten these clamps, and thus hold the cables firmly in position. This construc-

tion and arrangement of parts causes the plungers to operate alternately, so that while the hay in one chamber is being compressed and the bales formed the other chamber can be charged with hay. It will be obvious, therefore, that the operation of my device is continuous and that no time is lost by necessity of charging the chambers with hay after the bale is compressed.

The pulley F is operated by a sweep L, which is bolted or otherwise suitably secured thereto, the said sweep being shown as consisting of two converging arms connected together and braced at *s*. It will be obvious, however, that any other suitable means may be substituted for this sweep without departing from the spirit of my invention.

The cables H and I are secured to the pulley F and prevented from slipping thereon by means of clips M″ and N, respectively.

To permit binding of the bales of hay with wire, I have formed the rear walls C C′ of the chambers with grooves *c c′*, which extend the entire length thereof and communicate with slots *a a′*, formed, respectively, in the floor of each of the chambers A A′ and extending forwardly therein a suitable distance. The rear surfaces of the plunger-heads B B′ are also formed with grooves *b b′*, respectively, which register with the grooves *a a′*. A complete passage-way is thus formed around three sides of the bale for the purpose stated.

The operation of my press is accomplished in the following manner: After the chamber has received its charge of hay lid *e* is closed by means of its hinges *k k′* and is secured by means of hasps and staples *g g′* and *h h′*, respectively. The sweep is then revolved, and as one of the plunger-heads is drawn back by the small cable I the other is forced forward by the large cable H. As soon as the charge of hay is baled and tied the lid of the chamber is then opened and the bale removed, while the opposite baling-chamber is receiving its supply. In this way a charge of hay is baled at each semi-revolution of the sweep. Said sweep does not complete a full circle, but simply makes a semi-revolution, and is then reversed, thus operating both plungers.

Having now described my invention, what I believe to be new, and desire to secure by Letters Patent, and what I therefore claim, is—

1. In a baling-press the combination, with two baling-chambers and plungers operating therein, of a pulley journaled at the end of the press, means connecting the forward end of said plungers with opposite sides of the pulley, and cables connecting the rear ends of the plungers with said pulley, whereby said plungers will be alternately advanced and retracted, for the purpose set forth, and means for operating said pulley.

2. In a baling-press, the combination, with two baling-chambers and plungers operating therein, of a pulley journaled at the end of the press and having double grooves, cables extending from the plunger rods or stems and passing through said grooves in the pulley, the said cables being respectively secured to said plunger rods or stems at the rear of the plunger-heads and to the forward extremities of said plunger rods or stems, for the purpose set forth, and means for operating said pulley.

3. In a baling-press, two baling-chambers and plungers operating therein, in combination with a pulley journaled between said plungers at the end of the press and having double grooves, cables extending from the plunger rods or stems to said pulley, clamps for securing the cables to the pulley, and means for operating said pulley.

4. In a baling-press, two baling-chambers and plungers operating therein, in combination with a pulley journaled at the end of the press and formed with double grooves, cables H and I, one of which is secured to the plunger rods or stems immediately to the rear of the plunger-heads, and the other secured to the opposite free extremities of said plunger rods or stems, and clamps for securing said cables to the pulley.

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

JAMES A. SMITH.

Witnesses:
F. G. FISCHER,
A. A. HIGDON.