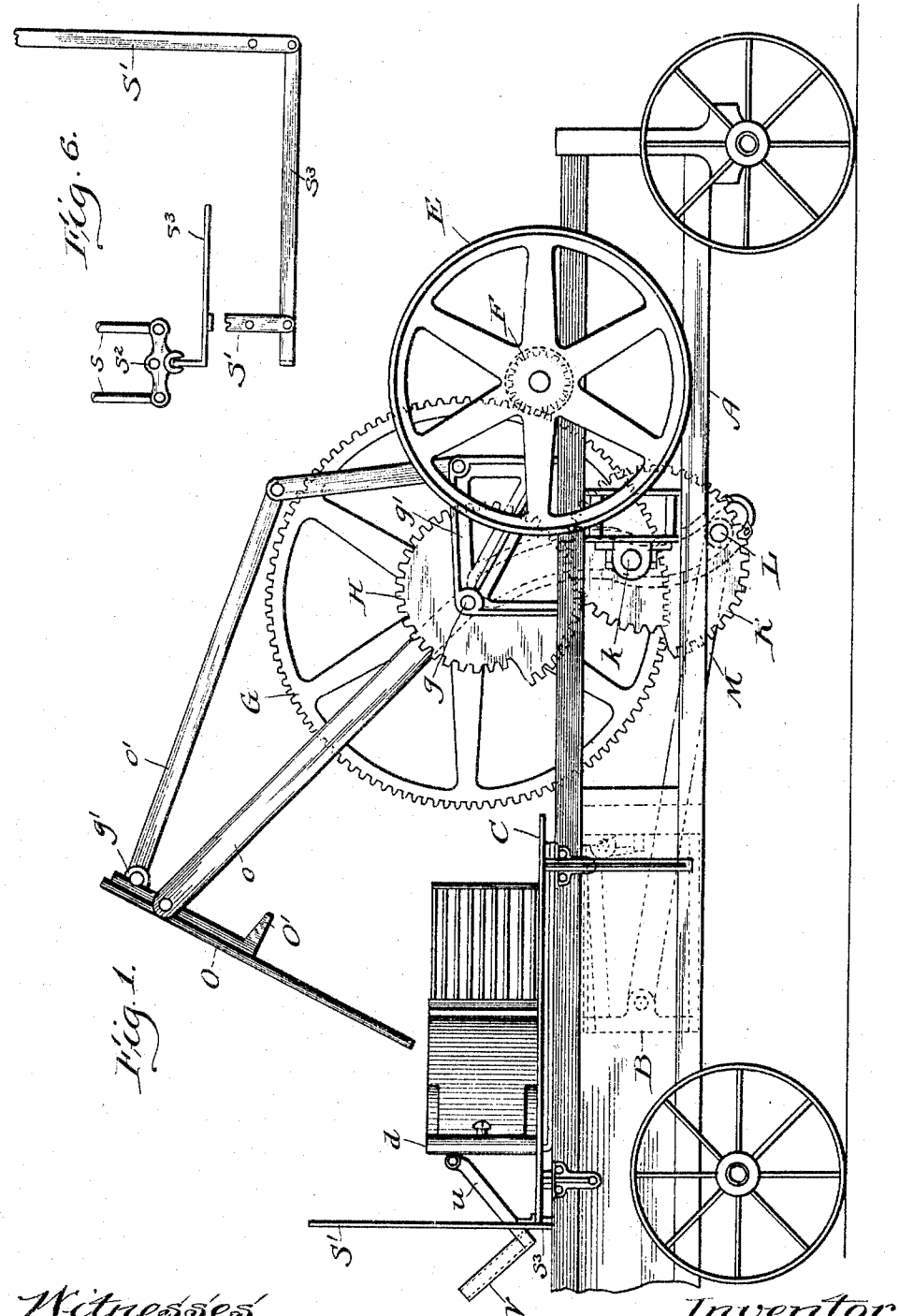
No. 783,588. PATENTED FEB. 28, 1905.

M. C. NIXON.

BALING PRESS.

APPLICATION FILED JAN. 24, 1898.

2 SHEETS—SHEET 1.



Witnesses
W. C. Coolidge
A. Shumtree

Inventor
Moses C. Nixon

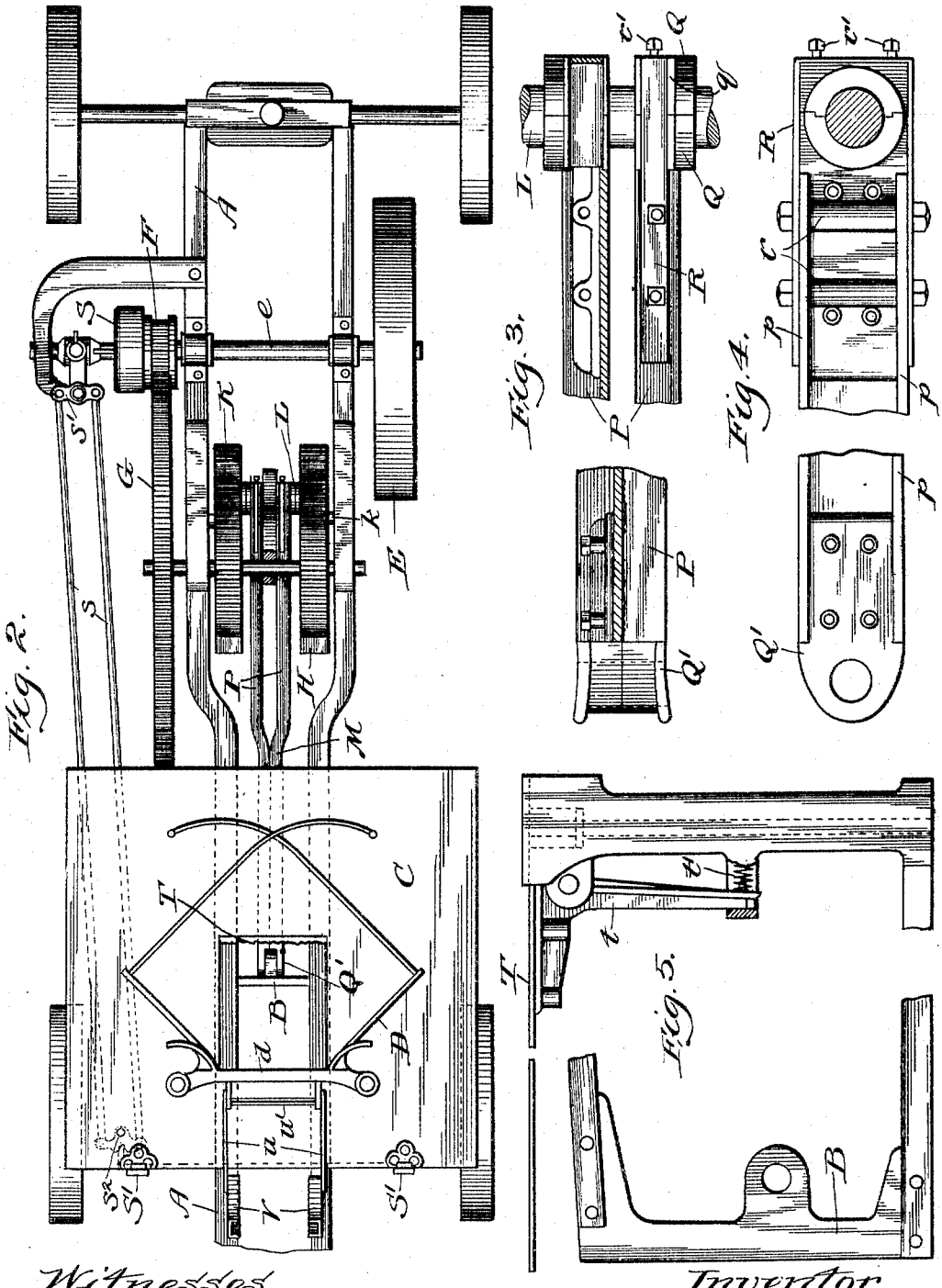
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Witnesses
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C. Stuntzes

Inventor
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No. 783,588. Patented February 28, 1905.

UNITED STATES PATENT OFFICE.

MOSES C. NIXON, OF FORT WAYNE, INDIANA.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 783,588, dated February 28, 1905.

Application filed January 24, 1898. Serial No. 667,732.

To all whom it may concern:

Be it known that I, MOSES C. NIXON, a citizen of the United States of America, residing at 412 East Berry street, Fort Wayne, Indiana, 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.

The invention relates to that class of baling-presses known as "perpetual," in which a reciprocating plunger is employed in which there are separate feed and discharge apertures and which is provided with a feeder for forcing the material into the compression-chamber.

The objects of the invention are to simplify, and consequently cheapen, the construction and to increase the general efficiency of the machine; and it consists in the various parts and arrangement of parts, as hereinafter fully set forth.

In the drawings, Figure 1 is a side elevation of a baling-press. Fig. 2 is a plan view of the same, some of the parts being broken away. Figs. 3 and 4 are details of the pitman for driving the plunger. Fig. 5 is a detail of the plunger, and Fig. 6 is a detail of the clutch-operating mechanism.

The body or case of the press is designated A and is shown as being mounted upon a running-gear, as is common in this type of machines. The plunger is shown at B, the feeding-platform at C, and a condensing mechanism for gathering the charge into a reduced mass over the feed-aperture is shown at D.

At E is shown a drive-pulley, which in this case constitutes also a balance-wheel, this pulley being mounted upon a shaft *e*, journaled in suitable boxes mounted upon the frame A. Power is transmitted from the shaft *e* by means of a geared pinion F intermeshing with a gear-wheel G, mounted upon a shaft *g*, journaled in brackets *g'*, rising from the top of the frame A. A pair of scroll-gears H, being modifications of an involute curve, are mounted upon the shaft *g*, one near each side of the frame A, and these gears intermesh with a similar pair of gears K, mounted upon the stud-shafts *k*, projecting inwardly from the side walls of the frame A. A wrist-pin L is carried by the gears K K, having its ends set one in each of said gears. A pitman M connects the wrist-pin L to the plunger B.

An oscillating feeder O, playing in and out of the feed-aperture of the compression-chamber within the frame A, is carried by a lever-arm *o*, which may be pivoted upon the shaft *g*, and the power-receiving end of this arm is curved to give proper movement and longitudinally slotted to receive and ride upon the wrist-pin L, the end of the pitman M being bifurcated for its accommodation. The feeder O is pivoted to the lever-arm *o*, and its oscillation upon such pivot is controlled by a jointed arm *o'*, connecting its upper end with the bracket *g'* back of the shaft *g*. In earlier patents I have shown similar scroll-gears and a somewhat similar arrangement of feeder, as well as the same form of condensing mechanism, as are illustrated in this application. The novelty in the present construction, however, resides in part in the use of two pairs of the scroll-gears and of a wrist-pin fixed between the members of one pair and taking the place of the crank shown in the said earlier patents, No. 575,660 and No. 372,636. A further improvement on the old construction is shown in the peculiar manner of mounting and actuating the lever-arm of the feeder, as above described, whereby I am able to considerably shorten the machine and increase its length by making it more compact. The pitman M is also of novel construction, its body portion being composed of a pair of channel-irons P P, secured together back to back, their rearward or crank ends being spread apart, as plainly shown in Figs. 2 and 3, in order to accommodate the lever-arm *o*. A journal-box Q for engaging the wrist-pin L is secured to the rearward end of each of the channel-irons, and a cap *q* coöperates with each box and is held in place by a strap R, looped over it and having its ends securely bolted to the flanges *p p* of the channel-iron. Set or pres-

sure screws r' r' pass through the loop of the strap R, so as to bear upon the back of the cap q, whereby its adjustment to the box Q may be regulated. The shank of the box Q may be provided with transverse ribs or bosses r, longitudinally drilled to receive the bolts by means of which the strap R is secured to the flanges p p of the channel-iron P. A further advantage in spreading the two members P P of the pitman at its rearward end is found in the fact that the strain is thereby transferred from the middle portion of the wrist-pin L nearer to its ends.

The forward end of the pitman is provided with a suitable apertured connecting-block Q', by means of which it is pivotally attached to the plunger. I have further improved the press by interposing between the balance wheel E and the transmitting-gears of the press a clutch S. This is preferably accomplished by mounting the gear-wheel F loose upon the shaft e and employing any suitable form of clutch (indicated at S) for engaging it with the shaft. This clutch is controlled by hand-levers S' S', rising one at each side of the feeding-table C, so as to be in convenient reach of the operator when working at either side of the machine, and these hand-levers are connected with the clutch by means of a cross-bar s^3, a bell-crank s^2, connecting-rods s, and a second bell-crak s', directly engaging the clutch mechanism.

The plunger B is provided at its top with a movable plate T, as is common in machines of this kind. I have improved upon the construction of these devices by pivoting the plate to the top of the plunger at its rearward end and providing it with a downwardly-depending arm t, between the end of which and a portion of the plunger is located an expansion-spring t', which tends to throw the forward end of the plate T upwardly.

A further improvement consists in a special form of division-block inserter shown, which comprises the parallel arms V, each having a longitudinal groove or channel in its inner face, these arms being carried by a pair of lateral arms u, secured together and pivoted, by means of the rod u', to a pair of lugs which may be formed upon the framework d of the condensing mechanism D, the length of the arms u being such that the inserter may be thrown over so that its channeled arms V will be over the feed-aperture of the compression-chamber. The arms V are spaced apart a distance equal to the width of the division-block used in connection with the machine, so that the block may be inserted into their channels and carried over into the compression-chamber. The feeder O is provided with a lateral lug O', adapted to bear upon the upper end of the division-block so as to dislodge it from the inserter.

The operation of the machine is as follows: A charge of hay having been condensed in the condensing mechanism D is forced into the compression-chamber by the descent of the feeder O as the plunger B recedes, the rearward end of the lever-arm o being raised by the crank-pin L during the recession of the plunger. At the end of the back stroke of the plunger those portions of the scroll-gears in which the radius is most rapidly gradually changed is reached, and the advance movement of the plunger is made at a rapidly-decreasing speed, so that at the time of greatest resistance a maximum of power is attained. As the pitman reaches the center at the end of the instroke the scroll-gears pass the step at which their radii are abruptly changed, and the recession of the plunger is made at high speed. As the bale in the process of compression nears completion a division-board is inserted between the arms V of the inserter, and at the completion of the bale the inserter is overturned, so as to drop the division-board into the compression-chamber. This is done, of course, as the plunger recedes and before the feeder O has entered the chamber. Should the division-board not fall freely, the lateral lug O' comes into contact with its upper edge and forces it downwardly. The machine is controlled by the operator by means of the levers S' S', it being immaterial upon which side of the machine the operator stands.

I claim as my invention—

1. In a baling-press the combination with a frame, stud-shafts standing in from each side of the frame and being in axial alinement, a driving-wheel mounted upon each shaft, a wrist-pin set in the two wheels, of a compressing-plunger, a pitman connecting the wrist-pin with the plunger and having its end connected with the wrist-pin forked, an oscillating feeder, a lever-arm carrying such feeder and having its end slotted and engaging the wrist-pin between the two branches or forks of the pitman.

2. In a baling-press of the kind described, the combination with a frame inclosing a compression-chamber, a reciprocating plunger moving within the chamber, a forked or branched pitman connected to the plunger and crank mechanism for driving the pitman, of an oscillating pivoted lever-arm with one end slotted to receive and ride upon the wrist-pin of the crank mechanism between the two branches or forks of the pitman, and the other end of the lever carrying a feeder.

3. In a baling-press of the class described, a compression-chamber with a feed-aperture in the top thereof; and a division-block inserter comprised of arms arranged to receive and hold a division-block, and with projecting arms secured to the former arms and pivoted in connection with the framework, the said division-block inserter being adapted to be swung from one side of said pivotal connection to the opposite side thereof and convey said division-block to the feed-aperture.

4. In a baling-press having a feed-aperture in its upper wall, the combination with the case, of a frame pivoted across the top of the case back of the feed-aperture, a pair of parallel arms projecting from such frame so as to project upwardly when the frame is turned back upon the top of the case and to enter the feed-aperture when the frame is turned over on its pivot, the arms being adapted to receive and hold a divisional block.

5. In a baling-press of the class described, a compression-chamber with a feed-aperture in the top thereof; and a division-block inserter arranged to receive and hold a division-block, and having pivotal support adjacent to feed-aperture and being adapted to be swung from one side of said pivotal support to the opposite side thereof and convey said division-block to the feed-aperture.

Signed by me at Chicago this 20th day of January, 1898.

MOSES C. NIXON.

Witnesses:
LOUIS K. GILLSER,
HESTER B. BAIRD.