(No Model.) 2 Sheets—Sheet 1.

A. J. BEAMAN

HAY PRESS.

No. 354,457. Patented Dec. 14, 1886.

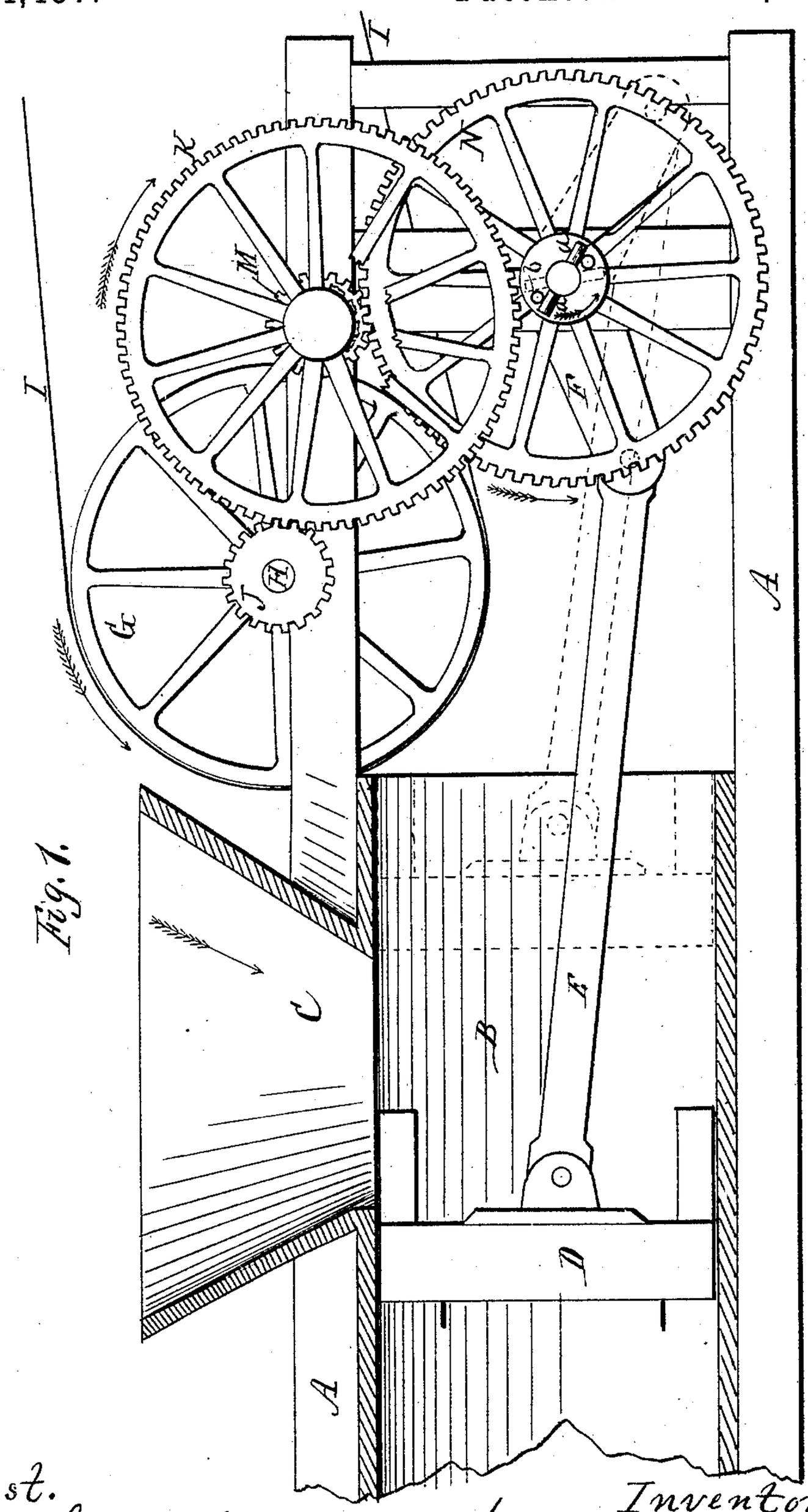

Fig. 1.

Attest.
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(No Model.) 2 Sheets—Sheet 2.

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HAY PRESS.

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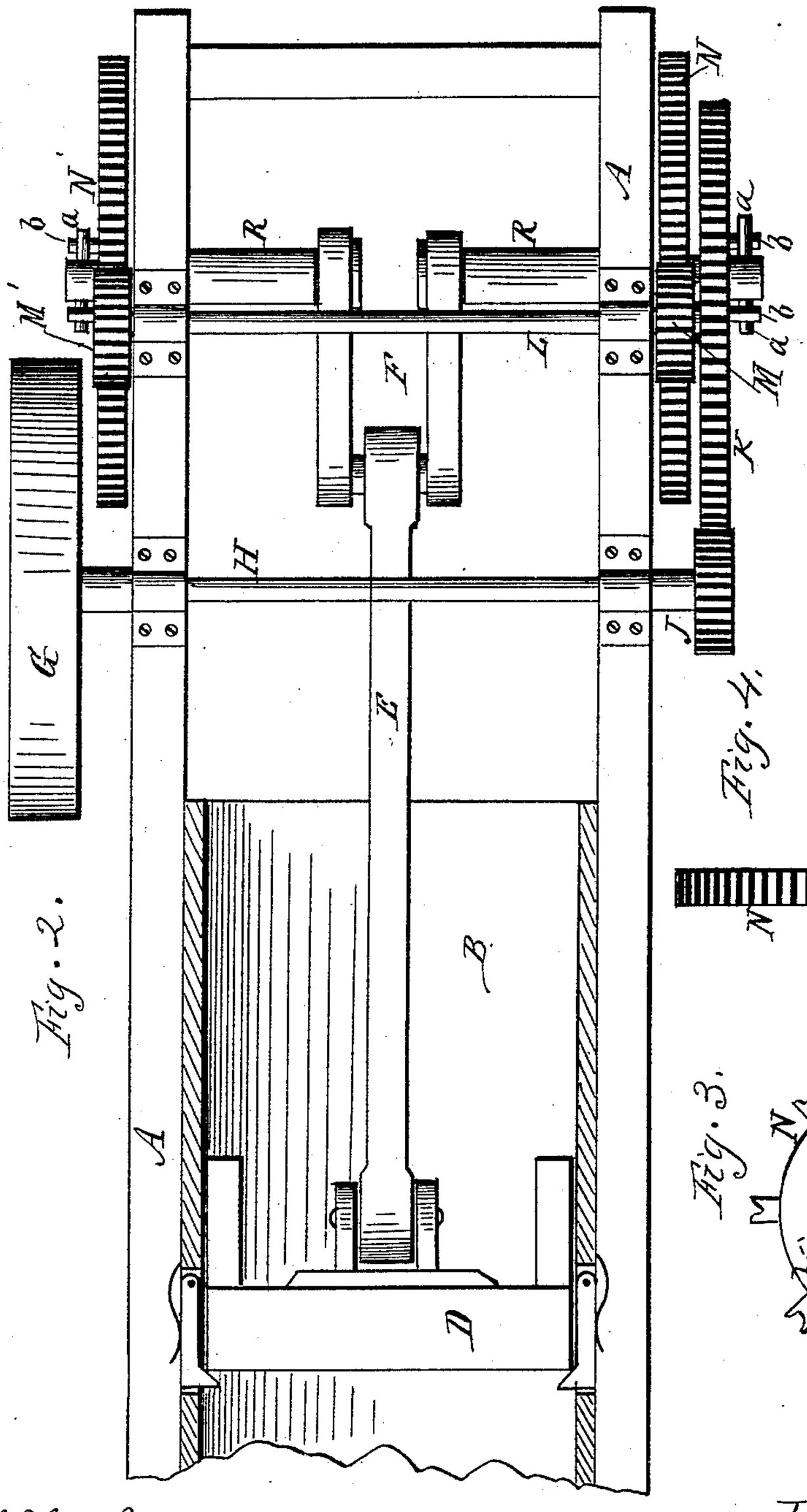

Fig. 2.

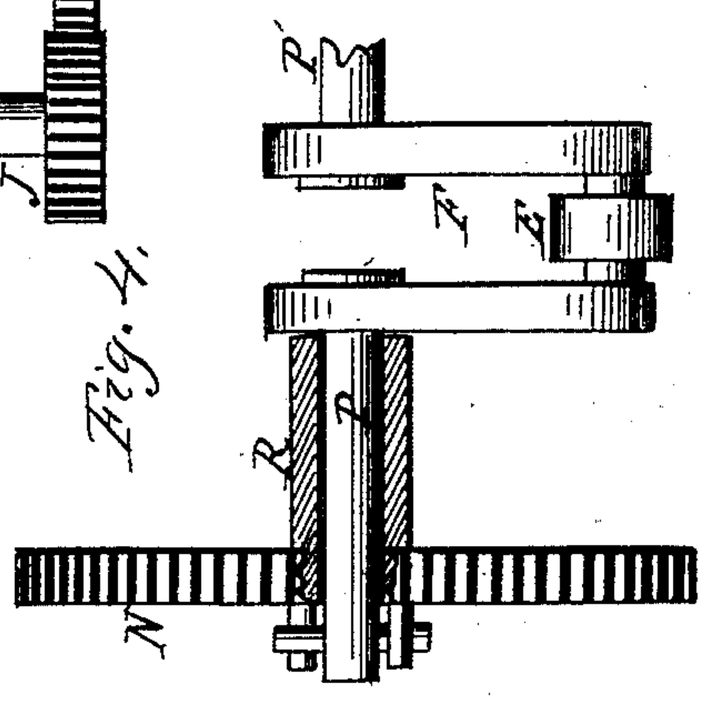

Fig. 4.

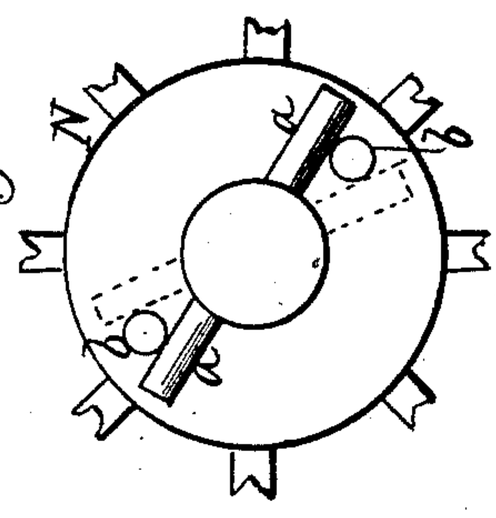

Fig. 3.

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UNITED STATES PATENT OFFICE.

ANDREW J. BEAMAN, OF OGDEN, NEW YORK, ASSIGNOR OF ONE-HALF TO CHARLES E. LOTT, OF SAME PLACE.

HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 354,457, dated December 14, 1886.

Application filed September 29, 1886. Serial No. 214,814. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. BEAMAN, of Ogden, in the county of Monroe and State of New York, have invented a certain new and useful Improvement in Hay-Presses; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the drawings accompanying this application.

My improvement relates to gearing for running hay-presses by steam-power. The object is to so connect the gearing with the plunger that when the latter has been forced to the extent of its inner stroke to compress the hay and has started back, the reaction of the compressed material will throw the plunger back, provision being made by a loose movement of the crank to allow this to be done without waiting for a full turning movement of the gearing.

In the drawings, Figure 1 is a side elevation of the machine, a portion being shown in section. Fig. 2 is a plan view, a portion also being shown in section. Fig. 3 is an enlarged end view of the shifting mechanism for allowing the follower to run back. Fig. 4 is a sectional elevation of one of the gear-wheels, the crank, and the shifting mechanism.

The drawings exhibit only a portion of the machine, consisting of a part of the press-box, the hopper for feeding in the hay, the plunger, its pitman-rod, the crank, and the gearing by which the machine is operated.

A is the frame. B is the press-box, of usual form. C is the hopper in which the hay is placed, fork full by fork full. D is the plunger that works in the press-box. E is the pitman, and F is the crank, the pitman being pivoted at one end to the plunger and at the other to the crank, so that as the crank revolves reciprocating motion will be given to the plunger.

My improvement is as follows: G is a band-wheel on a shaft, H, driven by a band, I, running from the pulley of a steam-engine. J is a pinion on the opposite end of the shaft H, engaging with a gear-wheel, K, on one end of the shaft L. M M′ are two pinions at opposite sides of the machine, located on shaft L, and engaging, respectively, with two gear-wheels, N N′, that drive the crank F. The crank is attached to half-shafts P P′, and the latter extend through tubular bearings or hubs R R, to which the wheels N N′ are attached, said tubular bearings and wheels turning freely on the half-shafts. Therefore the crank and its shafts can turn independently of the gear-wheels N N′. The half-shafts P P′ extend through and project beyond the face of the gear-wheels, and are each provided with two cross-pins, *a a*. The gear-wheel also has two projecting pins, *b b*, that stand crosswise of the pins *a a*, the two sets of pins interlocking, as shown in Fig. 3.

The operation is as follows: The hay is fed in through the hopper, and the plunger in its forward movement forces it into the press-box, where it is caught and held by the retainers. The gearing as it revolves causes the pins *b b* on wheels N N′ to strike the pins *a a* on the ends of the crank-shafts and propel the latter. As soon as the crank turns below the horizontal line, as indicated by the full lines in Fig. 1, the reaction of the compressed material against the plunger forces the plunger back independently of the gearing, as indicated by the dotted lines. This shifts the pins *a* from the position shown in full lines to that shown in dotted lines, Figs. 1 and 3. It will be seen that the pins can react nearly a half a circle. As soon as the gearing has turned forward sufficiently to cause the pins to catch up and engage again, the crank will again receive forward movement. During the interval the crank stands still. The plunger is drawn back from under the hopper, and stands still while the hay is being fed in front of it. This movement is timed so that the hay inserted by forks full is pressed successively forward till the bale is complete.

This invention is applicable not only to pressing hay, but also other material of a similar light nature.

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

1. In a hay-press, the combination of the crank F, its shafts P P′, the wheels N N′, and bearings R R, turning loosely on the shafts, and the interlocking pins *a b*, connected, respectively, with the shafts and gears, as shown and described, and for the purpose specified.

2. In a hay-press, the combination, with the

plunger and crank connected by a pitman, of the gears J K M M′ and N N′, the shafts of the crank resting loosely in the hubs of the wheels N N′, and said shafts and wheels provided with the interlocking pins *a b*, constructed and arranged to operate in the manner and for the purpose specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

A. J. BEAMAN.

Witnesses:
R. F. OSGOOD,
WM. J. MCPHERSON.