(No Model.)

W. W. SEELEY.

BALING PRESS.

No. 332,292. Patented Dec. 15, 1885.

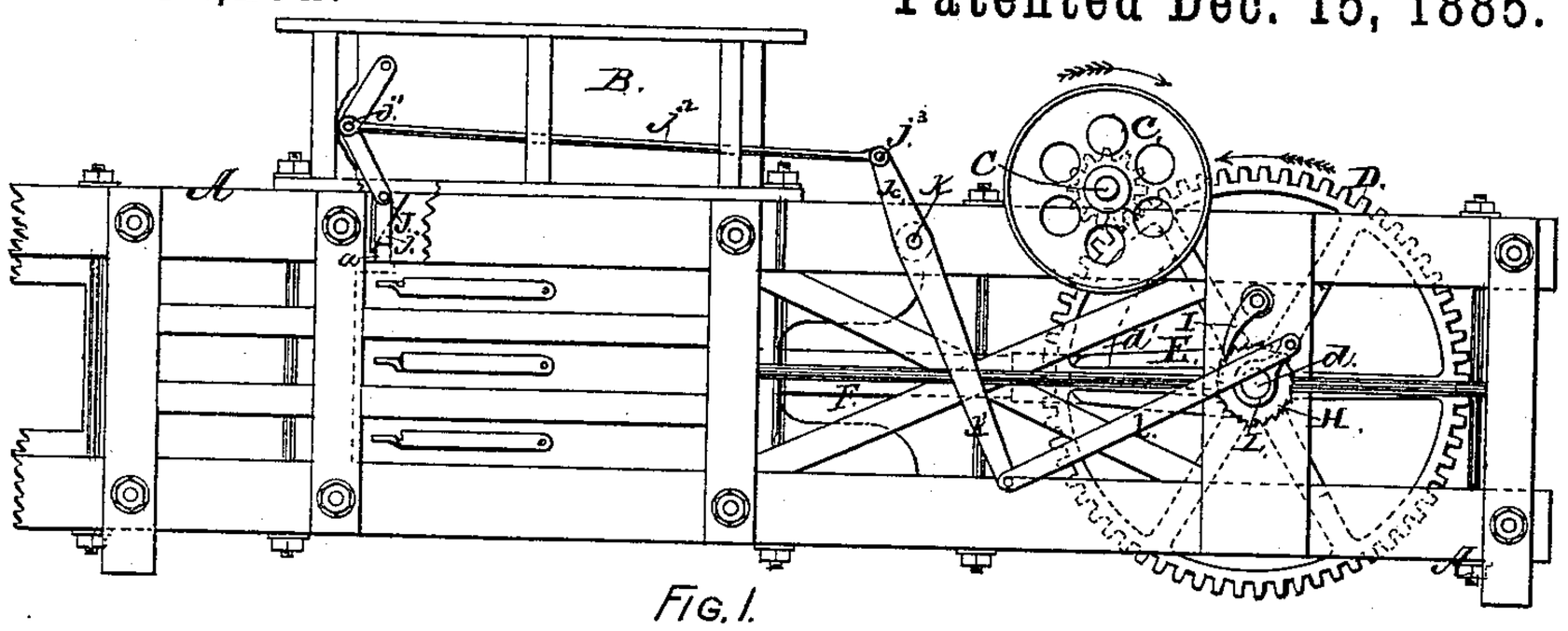

FIG. 1.

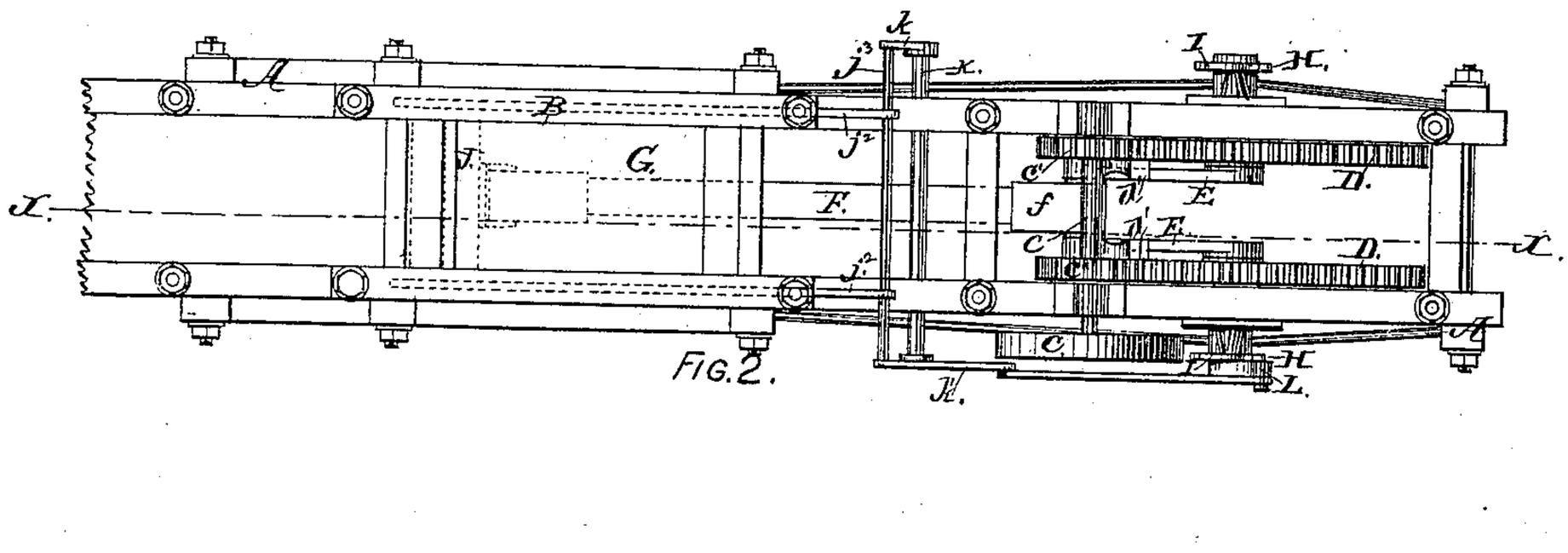

FIG. 2.

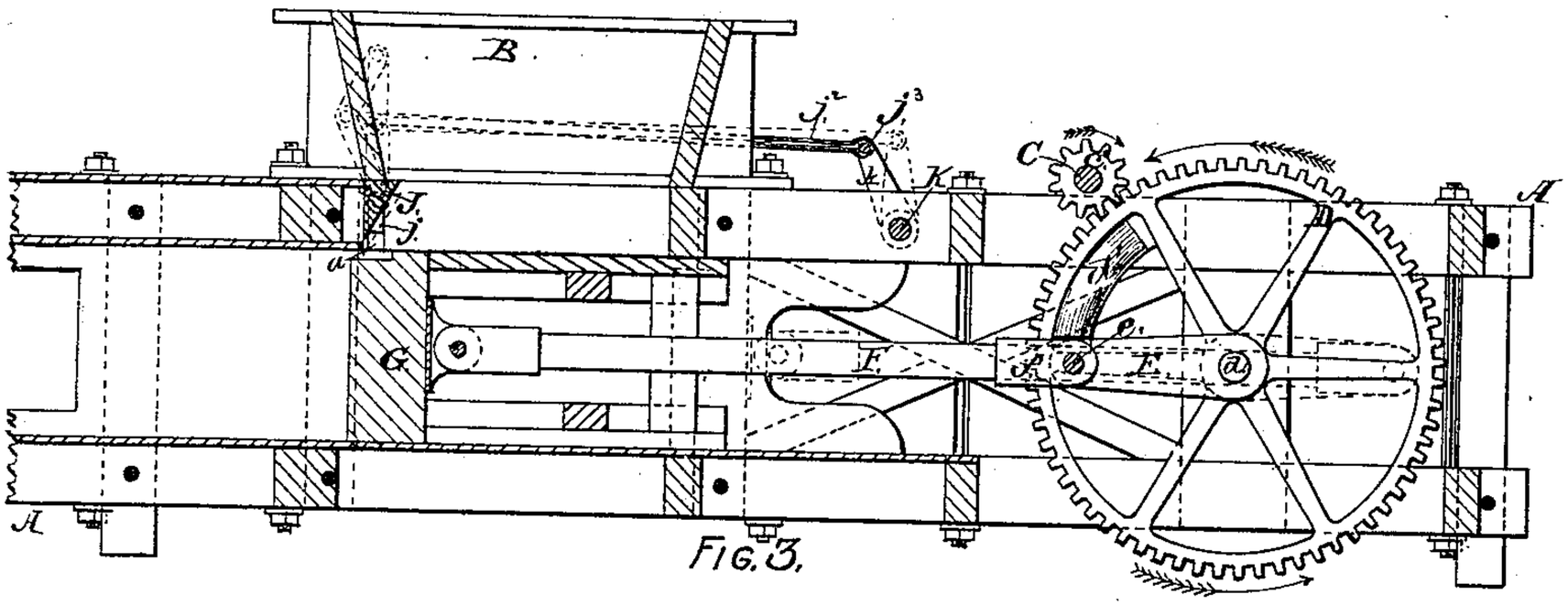

FIG. 3.

Witnesses:

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UNITED STATES PATENT OFFICE.

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BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 332,292, dated December 15, 1885.

Application filed May 21, 1885. Serial No. 166,225. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM W. SEELEY, of the city and county of Albany, in the State of New York, have invented new and useful Improvements in Baling-Presses, of which the following is a specification.

My invention relates to the mechanism for operating the plungers of baling-presses; and it consists in constructing said operating mechanism in such manner that when the plunger of the press is at a point to produce the greatest compression of the material in the press the pitman-connection with the driving-wheels will be sufficiently released to permit the plunger to be forced back by the resilient action of the compressed material.

In the accompanying drawings, which are herein referred to, and form part of this specification, Figure 1 is a side elevation of a press containing my improvements; Fig. 2, a plan view of the same, and Fig. 3 a longitudinal section at the line *x x*.

As shown in the drawings, A is the framework of the press, which is in the usual form for procumbent presses; B, the feeding-hopper through which the material is fed into the press-box. The driving-shaft C is provided with a belt-pulley, *c*, for receiving power from a steam-engine or other suitable motor. Said shaft is also provided with pinions *c'*, which are firmly secured thereto. The teeth of the pinions *c'* engage in the teeth of the gear-wheels D, which are fitted on their respective shafts *d* in such manner that the said shafts may turn freely without imparting motion to said wheels. Cranks E are secured to the inner ends of the shafts *d*, and are connected together by the crank-pin *e*, so that the two cranks will move in unison. Snugs *d'* are formed on the inner face of each gear-wheel D, and are adapted to bear against the crank-pin end of the cranks E, but in such manner that any force moving in the same direction as the travel of the crank-pin *e*, but at a higher rate of speed, will cause the crank-pin end of said cranks to break their contact with said snugs, and swing onward at an accelerated rate of speed until the force causing such accelerated movement is overcome. The pitman F is connected by the head *f* to the crank-pin *e*, and by its opposite end to the reciprocating plunger G. Ratchet-wheels H are secured to the outer end of the shafts *d*, and pawls I are adapted to engage in the teeth of said ratchet-wheels when occasion requires to sustain the weight of the cranks and that end of the pitman which is connected thereto.

A vertically-reciprocating bar, J, is fitted in the lower part of the rearmost end of the feeding-hopper B. The said bar is preferably made in the triangular form shown, with a sharp edge downward; but may be made of a quadrangular form when preferred. Said bar is provided with a tongue, *j*, at each end, which tongues move in guides *a*, so as to constantly maintain the bar in its proper position. The purpose of the reciprocating bar J is to break down and retain the loose material at the upper side of each successive charge that is forced into the pressing-chamber, and for this purpose I consider it essential that the said bar should be reciprocated with a positive motion, so that its movements can be arranged to occur at the required times, and to this end a toggle-joint, *j'*, is connected to each end of the reciprocating bar J. The upper ends of said toggle-joints are pivoted to the feeding-hopper, and their knuckles are connected by rods *j²* to the cross-head *j³*, which is reciprocated by arms *k* on the rocker-shaft K, and the latter derives its motion from a crank, L, which is secured to one of the shafts *d*, and is connected by the rod *l* to the arm *k'* on said rocker-shaft.

The operation of my press is as follows: The successive charges of hay or other material are fed into the feeding-hopper B. The loose gear-wheels D are revolved in the direction indicated by arrows in Figs. 1 and 3. The snugs *d'* on said wheels engage with the cranks E, and force them to swing around to force the plunger G rearwardly into the press to compress the material contained therein. The snugs *d'* retain their connection with the cranks E until the head *f* of the pitman F has passed slightly below a horizontal line, and when this point is reached the resilient action of the compressed material will cause the plunger G to rebound, and thereby the cranks E will be thrown around a half-revolution, or nearly so,

at which point the weight of the cranks and pitman will be sustained by the ratchet-wheels H and pawls I, and the plunger G will remain stationary until the snugs *d'* re-engage with the cranks E, to again move them, as above described. After the rebound of the plunger G the feeding-opening of the press-box will remain open for the introduction of the material until the plunger starts to move inwardly. While the cranks E are in motion the crank L partakes of their motion to operate the reciprocating bar J, as hereinbefore described.

When preferred, the ratchet-wheel H and its pawl I on the shaft *d*, on which the crank L is secured, may be dispensed with, and under such a condition the wheel D on that side will be secured to the shaft *d*, from which the ratchet-wheel has been omitted, and the crank E will be fitted to turn loosely on and independently of said shaft, and when so construced the power required for operating the reciprocating bar J in breaking down the loose material at the upper side of each fresh charge will be independent of the force of the rebound of the plunger, but will be derived directly from the driving mechanism through the tight driving-wheel.

I claim as my invention—

1. In a baling-press, the combination, with the driving-wheels D, loosely fitted on the shafts *d*, and the cranks E, secured to the inner ends of said shafts, so that said wheels and cranks will rotate on the same axial centers, the wheels D being provided with snugs *d'*, that are adapted to engage with the cranks E and move them, as herein described, of one or more ratchet-wheels, H, and corresponding pawls, I, all being constructed and arranged to operate as herein specified.

2. In a baling-press, the combination, with the driving-wheels D and cranks E, that are all arranged to rotate on the same axial center line, with either one or both of said wheels fitted to turn freely on the shafts *d*, the said wheels being provided with snugs *d'*, which are adapted to engage with the cranks E, as herein described, of the reciprocating plunger G, connected by the pitman F to the cranks E, one or more ratchet-wheels, H, and a pawl or pawls, I, all constructed and arranged to operate as herein specified.

3. In a baling-press, the combination, with the gear-wheels D, shafts *d*, and cranks E, of the crank L, rocker-shaft K, toggle-joint *j'*, and reciprocating bar J, all being connected and arranged to operate as herein specified.

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Witnesses:

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