No. 675,937. Patented June 11, 1901.

P. K. DEDERICK.

BALING PRESS.

(Application filed Apr. 23, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

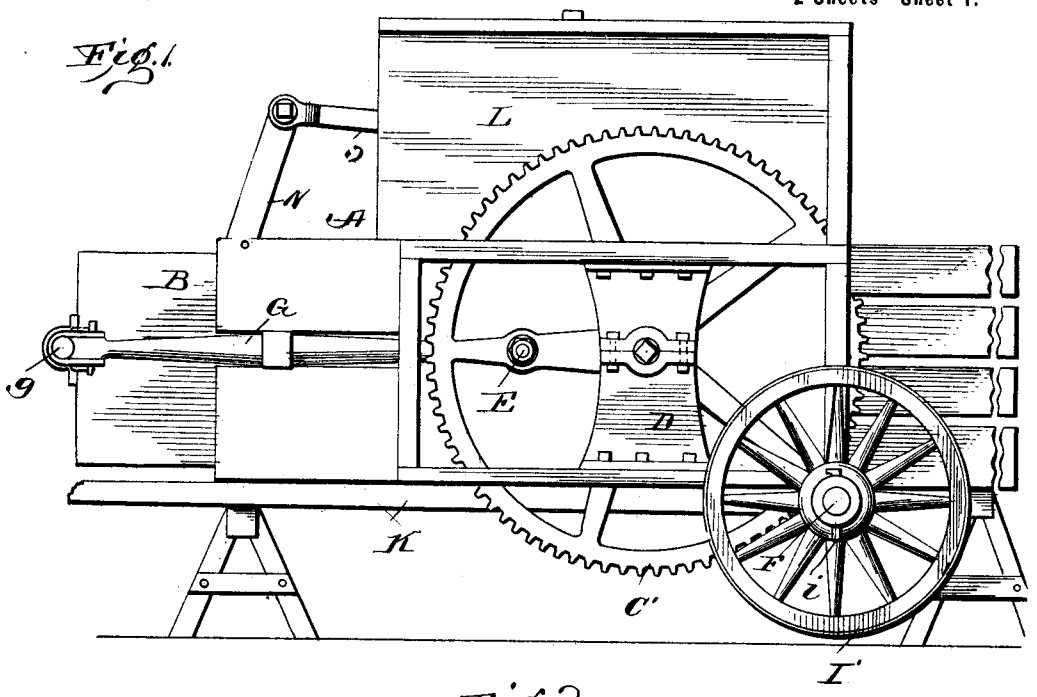
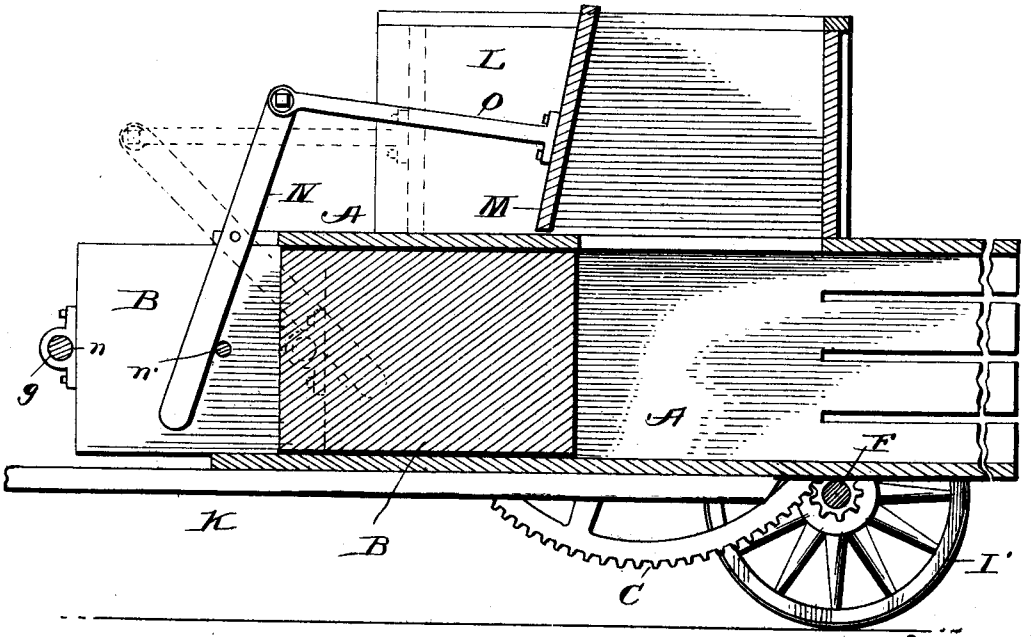


Fig. 2.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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Fig. 3.

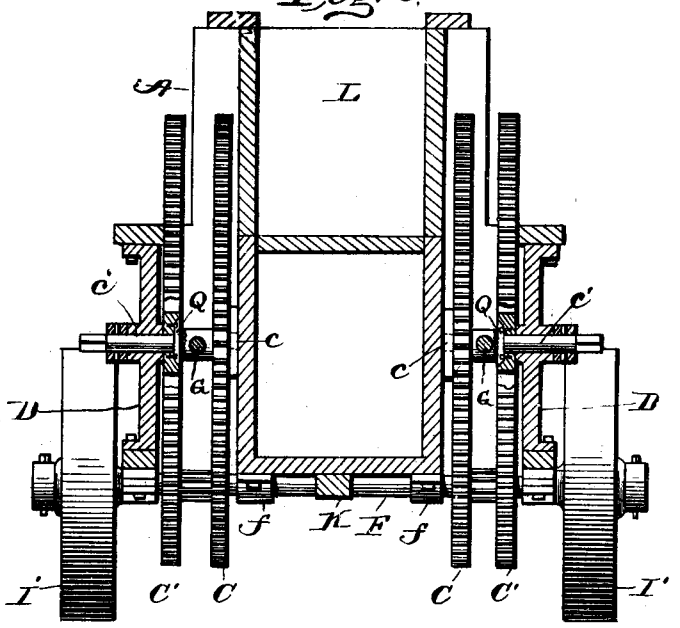
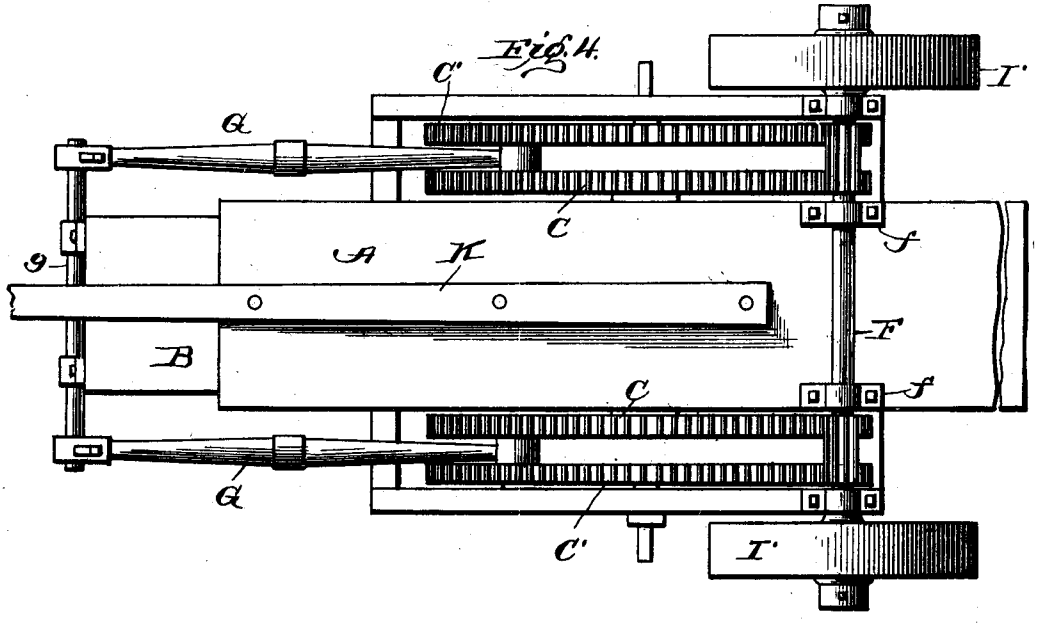


Fig. 4.



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UNITED STATES PATENT OFFICE.

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BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 675,937, dated June 11, 1901.

Application filed April 23, 1900. Serial No. 14,022. (No model.)

To all whom it may concern:

Be it known that I, PETER K. DEDERICK, a citizen of the United States, residing at Loudonville, in the county of Albany and State of New York, have invented certain new and useful Improvements in Baling-Presses; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, and to the letters of reference marked thereon.

This invention relates to improvements in baling-presses of that type which embody a reciprocating traverser or follower, a press-chamber, and a power mechanism for operating the follower, the objects of the invention being to as far as possible overcome the necessity of employing heavy framing between the power and traverser and to construct a press of light weight and small initial cost, whereby the cost of freight in transportation and the difficulties incident to moving the press about from place to place in the field are greatly reduced.

A further object of the invention is to provide a more simple condenser and operating mechanism therefor.

The invention consists in certain novel details of construction and combinations and arrangements of parts, all as will be now described, and the particular features of novelty pointed out in the appended claims.

Referring to the accompanying drawings, Figure 1 is a side elevation of a baling-press embodying my present improvements ready for operation. Fig. 2 is a vertical section taken longitudinally through the same with the follower or traverser shown in full lines at one extreme of its movement and in dotted lines at the opposite extreme of its movement. Fig. 3 is a transverse section taken in a vertical plane through the crank-wheels. Fig. 4 is a detail bottom plan view showing the transverse shaft for coupling the crank-wheels and which shaft also serves as the axle for the ground and balance wheels of the press.

Like letters of reference in the several figures indicate the same parts.

The frame A, the central portion of which constitutes the press-box, is made in any usual or preferred manner, preferably rectangular in cross-section and of the usual dimensions for baling the material for which the press is designed. By reason of the construction of the press in accordance with my present invention the press box or frame A may be of relatively light construction, inasmuch as it is subjected to relatively light strains as compared with presses heretofore built. The follower or traverser B is adapted to be reciprocated in the press box or frame A, and the power mechanism for reciprocating the traverser consists of crank-wheels journaled on opposite sides of the press box or frame and preferably in a medial plane. In the preferred construction also there are four crank-wheels employed, two on each side arranged parallel and to turn on axes in alinement with each other. One of the crank-wheels on each side (lettered C) is journaled on a stud axle or journal c, supported directly by the side wall of the press case or frame, while the other one, C′, of each pair is mounted on a stud axle or journal c', carried by a surrounding or supporting frame D, of any preferred character, connected with the side of the press box or frame A. The wheels of each pair are connected by a crank-pin E and would thus be caused to rotate in unison; but in order to insure the simultaneous movement of all of the crank-wheels they are made in the form of gear-wheels or with toothed peripheries, and a transverse shaft F, journaled in bearings f on the bottom of the press case and frame D, is provided with pinions or toothed sections with which the crank-wheels mesh. Thus should motion be imparted to any one of the crank-wheels such motion will be transmitted through the shaft F to the other crank-wheels and a unitary movement of the crank-wheels be secured without throwing strain on the pins or cranks connecting the wheels of each pair. For reciprocating the traverser a driving connection is provided between the crank-pins of the wheels and said traverser on each side of the press-box, such connection in the preferred form being a direct connection established through the medium of a connecting-rod or pitman G, journaled at one end on the crank-pin and at the opposite end pivotally connected with a cross-bar or bearing g, carried by or moving

in unison with the traverser or follower B. It is obvious, however, that instead of a direct connection other well-known connecting mechanism may be interposed between the crank-wheels and traverser or follower.

In the construction of the press the transverse shaft F is preferably so located with relation to the press-body and weight distributed thereon that it may serve as an axle for the ground-wheels for transporting the press about from place to place, for which purpose the ends of said shaft are extended and provided with journals for the reception of ground-wheels I', the latter being of such size and character that they may serve either or both as belt and balance wheels for the power mechanism, and a detachable connection or clutch mechanism is introduced between such wheels and the transverse shaft F, whereby when the wheels are to serve as balance or belt wheels they may be connected rigidly with said transverse shaft or axle, and when they are to serve as ground-wheels they may be detached or allowed to rotate freely thereon during the transportation of the press. In the machine shown simple transverse pins or bolts *i* are provided for locking the wheels and shaft together, although it is obvious that other well-known fastening or clutching mechanism may be introduced where so desired.

A tongue or pole K may be rigidly attached to the under side of the press-box and project forward in position for convenient attachment of the horses for drawing the press about, which press will then travel on the two ground-wheels without the necessity of employing other ground-wheels or trucks, as will be readily appreciated.

The feed-opening is formed in the top of the press-box, as usual, and is surrounded by a condenser-hopper L, in which is mounted a reciprocatory condenser-head M, adapted to be operated by the movement of the traverser or follower. With a view to securing a quick movement of the condenser-head with a pause at each extreme of its movement, even though the traverser or follower continues to move, an intermediate lever N is pivoted to the press-case and connected with the condenser-head M by means of a connecting rod or arm O, which latter is preferably rigidly connected with the condenser-head at one end and jointed or pivotally connected with the upper end of the lever N at the opposite end. The lever N works in a recess or slot in the traverser or follower and is adapted to be struck by one or the other of the cross-pieces or projections *n* or *n'*, located a sufficient distance apart to allow the condenser-head to pause or rest at each extreme of its movement and at the same time to operate said condenser-head at such speed that the feeder on placing the hay in the condenser-hopper may by almost a continuous movement push the same down into the press-box, thus saving considerable labor and time in feeding the press, at the same time affording him ample opportunity for gathering up a fresh charge for the next operation.

It will be observed that the crank-wheels are of such diameter as to afford a sufficient stroke for the follower or traverser, and being mounted as they are directly in line with the line of strain there is practically no distorting strain on the framing of the press, and the latter may be made relatively light. In this connection it will also be observed the location of the wheels permits of the employment of large crank-wheels without materially increasing the height of the press or interfering with the transportation or the location of the transporting means beneath the press-box, and, furthermore, being so located that the traverser or follower works between the crank-wheels the length of the press may be very materially reduced without in any wise reducing the power developed, but, on the contrary, affording a somewhat more economical power by dispensing with a large proportion of the weight and intermediate wheels heretofore employed for driving the traverser and with which it has been usual to speed up the driving mechanism and again reduce the rate of speed as the power is applied to the traverser.

When the press is to be put in operation, it is mounted on a pair of horses or blocks, preferably placed beneath the press box or frame in such manner as to afford a stable base, or any preferred means for raising the ground-wheels off of the ground may be adopted, and the power is preferably applied to the ground-wheels through a belt or to the transverse shaft or axle by any approved gearing or to the stud-axle of one of the crank-wheels, should this method be preferred. In the latter event the stud-axle is preferably, as shown in Fig. 3, formed with a head or flange Q, to which the crank-wheel is attached, and the outer end of the stud-axle projecting through the bearing in the frame is provided with a gear-wheel or adapted for the direct attachment of the tumbler-rod or its connections with a horse-power or engine.

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

1. In a baling-press, the combination with a press-box, a traverser mounted to reciprocate therein and crank-wheels with connections for reciprocating said traverser, of a transverse shaft, gearing connecting said transverse shaft and crank-wheels, combined balance and ground wheels journaled on the shaft with means for detachably connecting said combined balance and ground wheels with said shaft; substantially as described.

2. In a baling-press the combination with the press box or frame, the traverser mounted to reciprocate therein, the independent crank-wheels journaled on opposite sides of said press-frame and connections between said crank-wheels and traverser, of a transverse

shaft, gearing connecting said transverse shaft and crank-wheels, ground-wheels adapted to be used as balance and drive wheels journaled on said transverse shaft and means for detachably connecting said ground-wheels with said shaft; substantially as described.

3. In a baling-press the combination with the press-frame, the traverser and power mechanism for reciprocating said traverser embodying a transverse shaft journaled on the press-frame, of ground-wheels journaled on said transverse shaft and adapted to be employed as balance and drive wheels with means for detachably connecting said ground-wheels with said shaft; substantially as described.

4. In a baling-press the combination with the press-frame, the traverser mounted to reciprocate therein and power mechanism for reciprocating said traverser, of a condenser-hopper, a condenser-head mounted to reciprocate in said hopper an arm rigidly connected with said head, a lever pivoted on the press-frame and connected with said arm and separated projections on the traverser itself adapted respectively to contact with said lever when the traverser is moved in one direction or the other; substantially as described.

5. In a baling-press, the combination with the press-frame, the traverser having the slot or recess therein with projections at the ends of said recess, and the power mechanism for reciprocating said traverser, of a condenser-hopper, a condenser-head mounted to reciprocate in said hopper, an arm connected with said hopper and a lever pivoted on the frame connected with said arm and projecting into the slot or recess in the traverser, whereby said condenser-head is reciprocated by the movement of the traverser and a sufficient play is allowed between the lever and its operating projections to permit the condenser-head to pause at opposite ends of its reciprocation; substantially as described.

6. In a baling-press, the combination with the press-frame, the traverser mounted to reciprocate therein and having a longitudinally-extending slot or recess and a power mechanism for reciprocating said traverser, of a condenser-hopper, a condenser-head mounted to reciprocate in said hopper, an arm rigidly connected with said condenser-head, a lever pivoted at an intermediate point on the frame and pivotally connected at one end with said arm, and projecting at the opposite end into said slot or recess in the traverser and projections on the traverser adapted to contact with said lever to reciprocate the condenser-head and permit the same to pause at the extremes of its excursion; substantially as described.

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