

(No Model.)

P. K. DEDERICK.
BALING PRESS.

3 Sheets—Sheet 1.

No. 605,273.

Patented June 7, 1898.

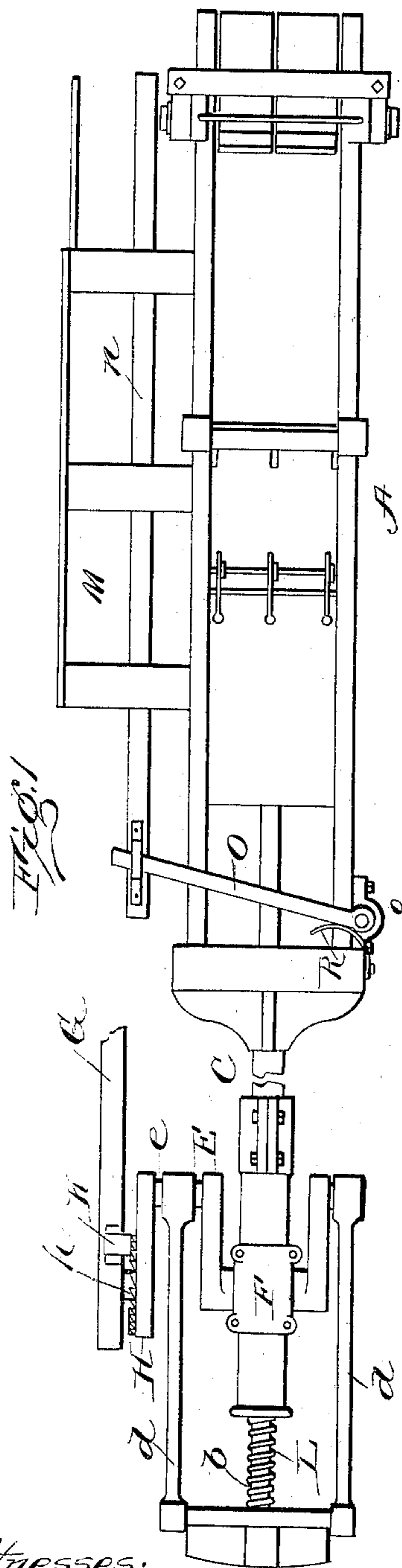
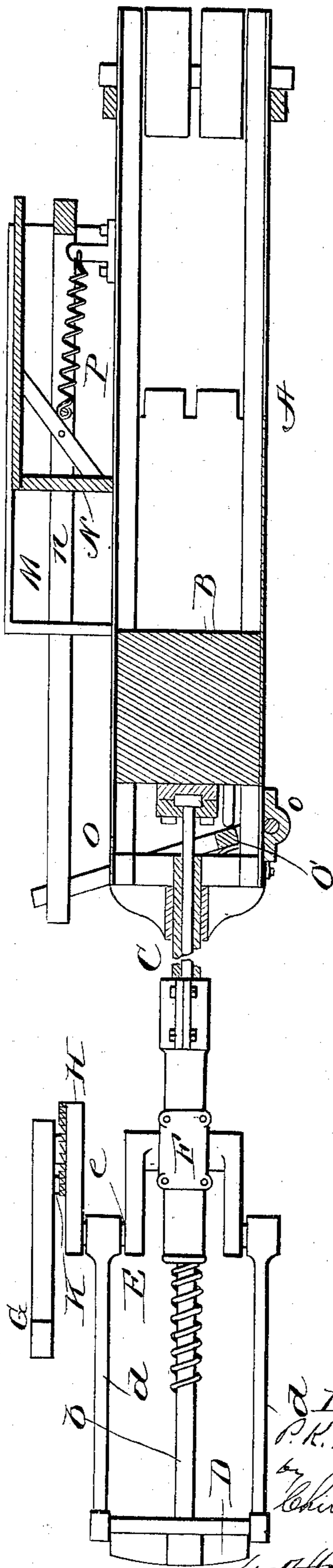


Fig. 2



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by
Church & Church

Attorneys.

(No Model.)

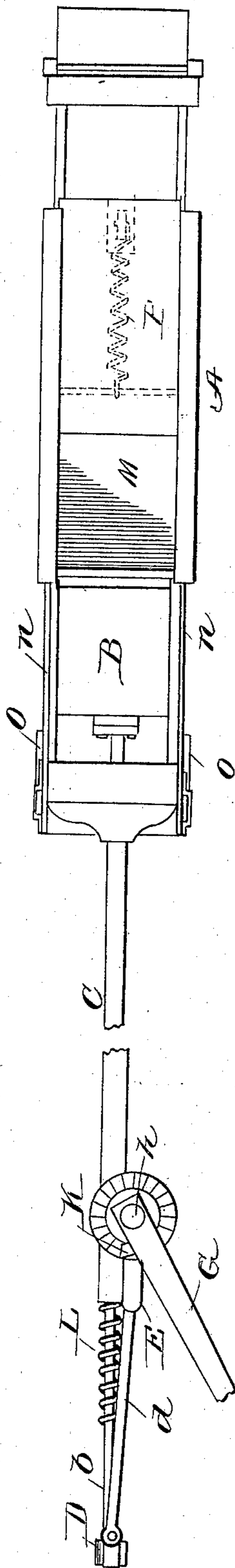
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Fig. 3.



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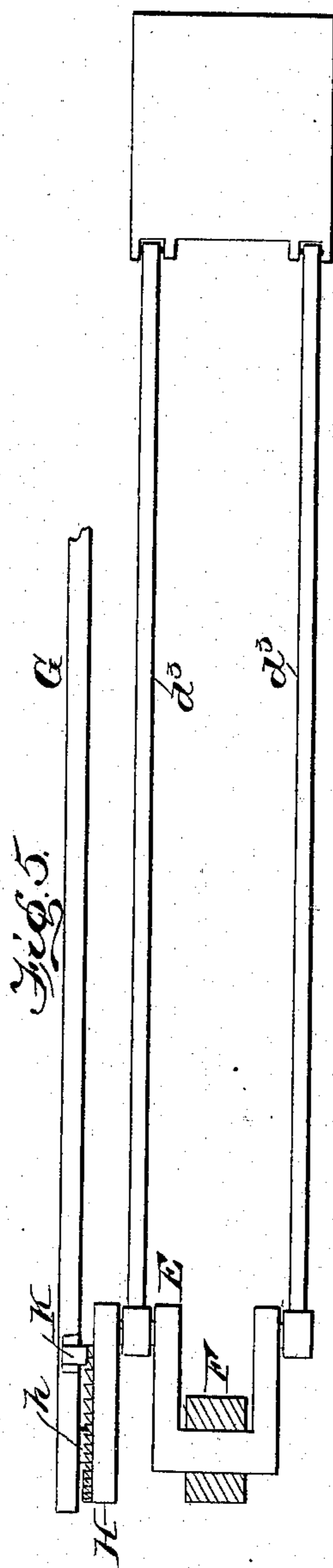
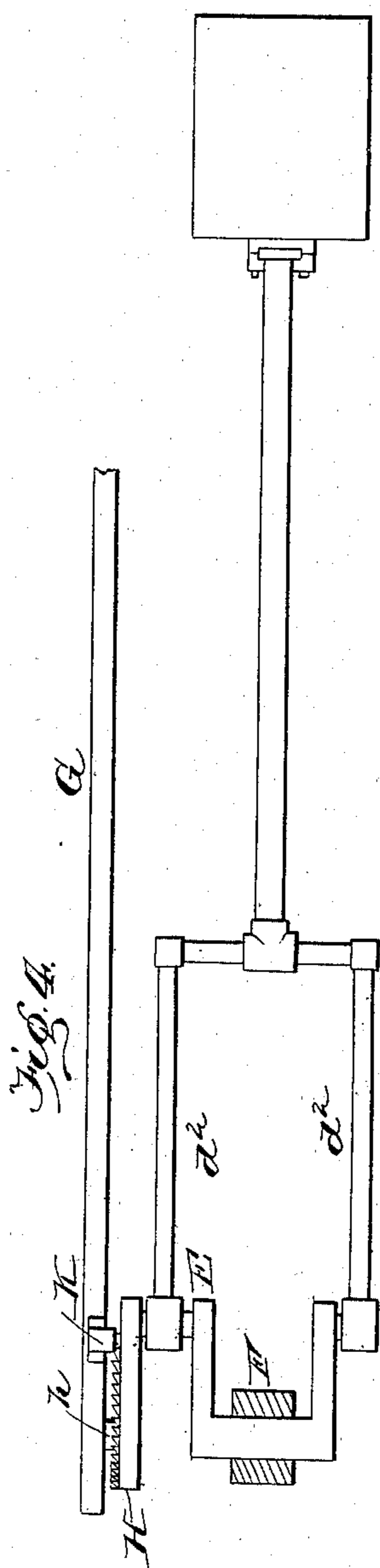
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P. K. DEDERICK.
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No. 605,273.

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UNITED STATES PATENT OFFICE.

PETER KELLS DEDERICK, OF LOUDONVILLE, NEW YORK.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 605,273, dated June 7, 1898.

Application filed July 22, 1897. Serial No. 645,587. (No model.)

To all whom it may concern:

Be it known that I, PETER KELLS DEDERICK, of 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, and particularly to that class of baling-presses known as "continuous" presses, although features of the invention are applicable to other styles of press, as will be readily understood from the following specification.

Referring to the accompanying drawings, Figure 1 is a side elevation, showing diagrammatically, a baling-press embodying my present improvement. Fig. 2 is a similar view showing the position of the power reversed and the press-case in section to illustrate the operation of the condenser. Fig. 3 is a top plan view of the structure shown in Fig. 1. Figs. 4 and 5 are diagrammatic views showing modified arrangements of the power mechanism.

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

The baling-press frame or casing, (lettered A in the accompanying drawings,) together with the traverser B and the pipe connection C, are similar in all respects to those now in common use and heretofore patented to me and need not be particularly described. The pitman *b* for operating the traverser B passes way through the pipe connection C and is provided at its outer end with a cross-head D, which cross-head is in turn connected by links *d* with the two crank-arms of a double crank E, journaled in a casing or bearing F, clamped firmly or formed on the end of the pipe connection C. The rotation of the crank-arms E will reciprocate the traverser B and condense the material to be baled in successive charges in the press-case, and in the present instance, in order to rotate these connected crank-arms E, I extend the crank-pin of one of the arms and make provision for attaching thereto a sweep or horse-lever G.

The horse-lever G is preferably mounted on what I term a "suspended center"—that is to say, upon the crank-pin, (lettered *e*, or that portion of the casting constituting the crank-pin,) I form an extension H, extending back over the center of the crank-arms, and upon this extension and in line with the center on which the crank-arms rotate I form a suspended center *h* for the horse-lever or sweep. In the preferred construction also the horse-lever is loosely mounted upon this suspended center, and the connection between the horse-lever and the crank-arm is formed by means of a pawl and ratchet K or equivalent clutch connection, which will permit the crank-arms to rotate forwardly in advance of the horse-lever; but when said horse-lever is rotated forwardly it will lock with the crank-arms and rotate the same in unison therewith.

Instead of the links pulling the cross-head and traverser-staff they might push by connection to the slide-pitman between the crank and press, as at *d*², Fig. 4, or the links might extend from the crank to the traverser direct, as at *d*³, Fig. 5, and dispense with the slide and cross-head with same results, but more obstruction to the travel of the horses.

The advantage of this construction will be apparent, inasmuch as with it, when the crank-arms have been rotated by the horse-lever to compress a charge of material as they pass over their center, the rebound of the traverser will tend to rotate the crank-arms forwardly at a more rapid speed than that of the horse-lever or sweep, and when the traverser has reached its rearmost position a new charge of material may be placed in front of it, and as it has then come to rest or its motion has become slower than that of the horse-lever or sweep the horse-lever or sweep will engage with the crank-arms and again advance the traverser. Thus more than one charge of material may be condensed during a single rotation of the horse-lever or sweep.

In order that a full rebound of the plunger or traverser may be insured even when pressing very light material, I preferably provide a returning-spring, which is compressed by the forward movement of the traverser and which in its recoil will throw the traverser to its rearmost position. Obviously such a spring may be located at any desirable point; but I

prefer to mount on the pitman *b* a simple heavy coil-spring *L*, which will be compressed by the cross-head *D* as the traverser reaches its forward position and which will in its re-
 5 coil impart sufficient rearward momentum to the traverser to insure its quick return to its rearmost position. (Shown in Fig. 2.)

With a compressing mechanism such as de-
 10 scribed, wherein the plunger has a quick re-
 turn and slow advance, it is desirable that some means should be provided for retarding the movement of the traverser at its rear-
 most position in order that the attendant may have ample time to push down a charge of
 15 material in front of the traverser before its forward movement begins, and I utilize the energy which would otherwise be wasted in retarding the movement of the traverser to operate the condenser for condensing the
 20 next successive charge of material, and this I accomplish by providing the condensing-hopper *M* with a sliding condenser-head *N*, mounted on or movable with the ordinary side
 25 slides *n* and adapted to be operated by up-
 wardly-extending levers *O*, journaled to the frame of the press-case at the bottom, as at *o*, and having a cross-bar *O'*, arranged in posi-
 30 tion to be struck by the traverser *B* or a por-
 tion thereof as it reaches the rearward por-
 35 tion of its movement. I preferably provide a loose connection between the levers *O* and
 sideslides *n* and make the connection between the levers *O* and traverser *B* at a point near
 40 the pivots of the levers, whereby by a very slight movement of the traverser at the ex-
 45 treme end of its rearward movement the con-
 denser *N* is given a relatively long move-
 ment and the charge of material brought for-
 ward over the opening in position to be thrust
 50 down by the attendant. The return of the
 condenser *N* to its backward position is se-
 cured, preferably, through the instrumentality
 of a spring or springs, which may be located
 55 in the condenser-hopper, as shown in Fig. 2,
 where a coil-spring *P* is connected at one end
 to the condenser and at the opposite end to
 the frame of the press, tending to draw the
 60 condenser backwardly. This spring *P* is lo-
 cated beneath the deck or top of the con-
 denser itself, which protects it. Instead of
 locating the spring in this manner it may be
 located elsewhere, as shown, for instance, in
 65 Fig. 1, wherein a flat spring *R* is mounted on
 the press-frame and adapted to bear against
 the lever *O* to force it, together with the con-
 denser, back to its rearward position. With
 this arrangement it will be seen that not only
 is the movement of the traverser arrested at
 the proper moment, but that the power which
 70 would otherwise be lost is utilized in con-
 densing the material for the next charge.

Obviously the horse-lever or sweep might
 be attached rigidly to the suspended center,
 although the arrangement shown is preferred,
 65 and it is also obvious that the horse-lever
 may be mounted on the crank-pin; but such
 an arrangement is objectionable, inasmuch as

under such circumstances the end of the
 horse-lever will be caused to describe an ir-
 regular path, which would to a certain extent 70
 inconvenience the horse.

The whole arrangement of power and con-
 denser mechanism is at once simple, cheap to
 manufacture, and presents no complicated
 parts liable to become broken or disarranged 75
 in use.

Having thus described my invention, what
 I claim as new is—

1. In a baling-press the combination with
 the press-case traverser working therein, pit- 80
 man for operating said traverser and cross-
 head connected with said pitman, of a double
 crank journaled in fixed bearings, links con-
 necting said crank and cross-head and a
 power lever or sweep mounted on and en- 85
 tirely supported by one of the crank-pins of
 the crank; substantially as described.

2. In a baling-press the combination with
 the press-case, traverser and pitman mounted
 in bearings to slide longitudinally, of a crank 90
 journaled in fixed bearings, a link connect-
 ing the crank-pin and pitman and a horse-
 lever or sweep mounted on and entirely sup-
 ported by said crank-pin on the end opposite
 the bearing in which the crank is journaled; 95
 substantially as described.

3. In a baling-press, the combination with
 the press-case, traverser and pitman jour-
 naled to slide longitudinally, of a crank jour- 100
 naled in fixed bearings, a link connecting the
 crank-pins and pitman, an independently-
 movable horse-lever mounted on and entirely
 supported by said crank-pin and a clutch in-
 terposed between said horse-lever and crank-
 pin; substantially as described. 105

4. In a baling-press the combination with
 the press-case, traverser, pitman mounted to
 slide longitudinally, crank journaled in fixed
 bearings and a link connecting the crank-pin
 and pitman, of a bearing carried by said 110
 crank-pin and suspended in line with the
 center on which said crank rotates, a horse-
 lever or sweep mounted on said bearing with
 means for connecting the horse-lever or sweep
 and crank-pin for simultaneous rotation; 115
 substantially as described.

5. In a baling-press the combination with
 the press-case, traverser, pitman mounted to
 slide longitudinally, crank journaled in a
 fixed bearing and link connecting the crank- 120
 pin and pitman, of a suspended support
 mounted on the crank-pin and extending
 back in line with the center of rotation of the
 crank and a horse-lever or sweep mounted
 on said support; substantially as described. 125

6. In a baling-press, the combination with
 the press-case, traverser, pitman mounted to
 slide longitudinally, crank journaled in a
 fixed bearing and link connecting the crank-
 pin and pitman, of a suspended support 130
 mounted on the end of the crank-pin oppo-
 site the bearing in which the crank is jour-
 naled and extending back in line with the
 center of rotation of the crank, and a horse-

lever or sweep, journaled on said support with means for connecting the support and lever; substantially as described.

7. In a baling-press, the combination with
5 the press-case, traverser, pitman mounted to slide longitudinally, crank journaled in a fixed bearing and link connecting the crank-pin and pitman, of a suspended support mounted on the end of the crank-pin opposite
10 the bearing in which the crank is journaled and extending back in line with the center of rotation of the crank, a horse-lever or sweep journaled on said support and a clutch interposed between said support and horse-lever
15 to permit the crank to rotate at a higher rate of speed than the horse-lever; substantially as described.

8. In a baling-press, the combination with
20 the press-case, pipe connection rigidly connected therewith, traverser and pitman extending through the pipe connection, of a double crank journaled on the pipe connection, links connecting the crank-pins and pitman, a suspended support mounted on one
25 of the crank-pins opposite the journal for the crank, a horse-lever journaled on said support, and in line with the axis of the crank, and a clutch interposed between the horse-lever and support; substantially as described.

9. In a baling-press, the combination with
30 the press-case, traverser and power mechanism for advancing the traverser, of a reciprocating condenser, a spring for returning said condenser to its retracted or open position, a
35 lever journaled on the press-case and adapted to be moved by the traverser when retracted, and a connection between said lever and condenser for advancing the condenser against the tension of its retracting-spring; substantially as described.

10. In a baling-press, the combination with
40 the press-case, traverser, and power mechanism

for advancing the traverser, of a reciprocating condenser, a spring for moving said condenser to its retracted or open position, 45 and slides connected with said condenser, of levers journaled at the lower end at the bottom of the press-case, and connected at their upper ends with said side slides, and cooperating contacting surfaces on the bot- 50 toms of the levers and traverser respectively, adapted to contact when the traverser is at the extreme retracted position, whereby when the traverser is in this position the condenser is advanced to condense a preliminary charge 55 of matter.

11. In a full-circle press, or press in which the horse moves constantly in one direction, the combination with the press-case, traverser, 60 pipe connection and pitman working through said pipe connection, of a crank journaled on the pipe connection and connected with the pitman by a link, of a horse-lever journaled on an axis coincident with the axis of the crank and a clutch connection between the 65 horse-lever and the crank; substantially as described.

12. In a baling-press power, the combination of the double crank-shaft journaled to a rigid extension from the press-frame, with 70 connections to reciprocate the traverser, and provided with a horse-lever pivoted on a suspended center extending from and supported by the upper crank-wrist, and an automatic connection between said horse-lever and ex- 75 tension from the crank-wrist, whereby the crank is free to move forward faster than the horse-lever, substantially as and for the purpose set forth.

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Witnesses:

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