

No. 698,043.

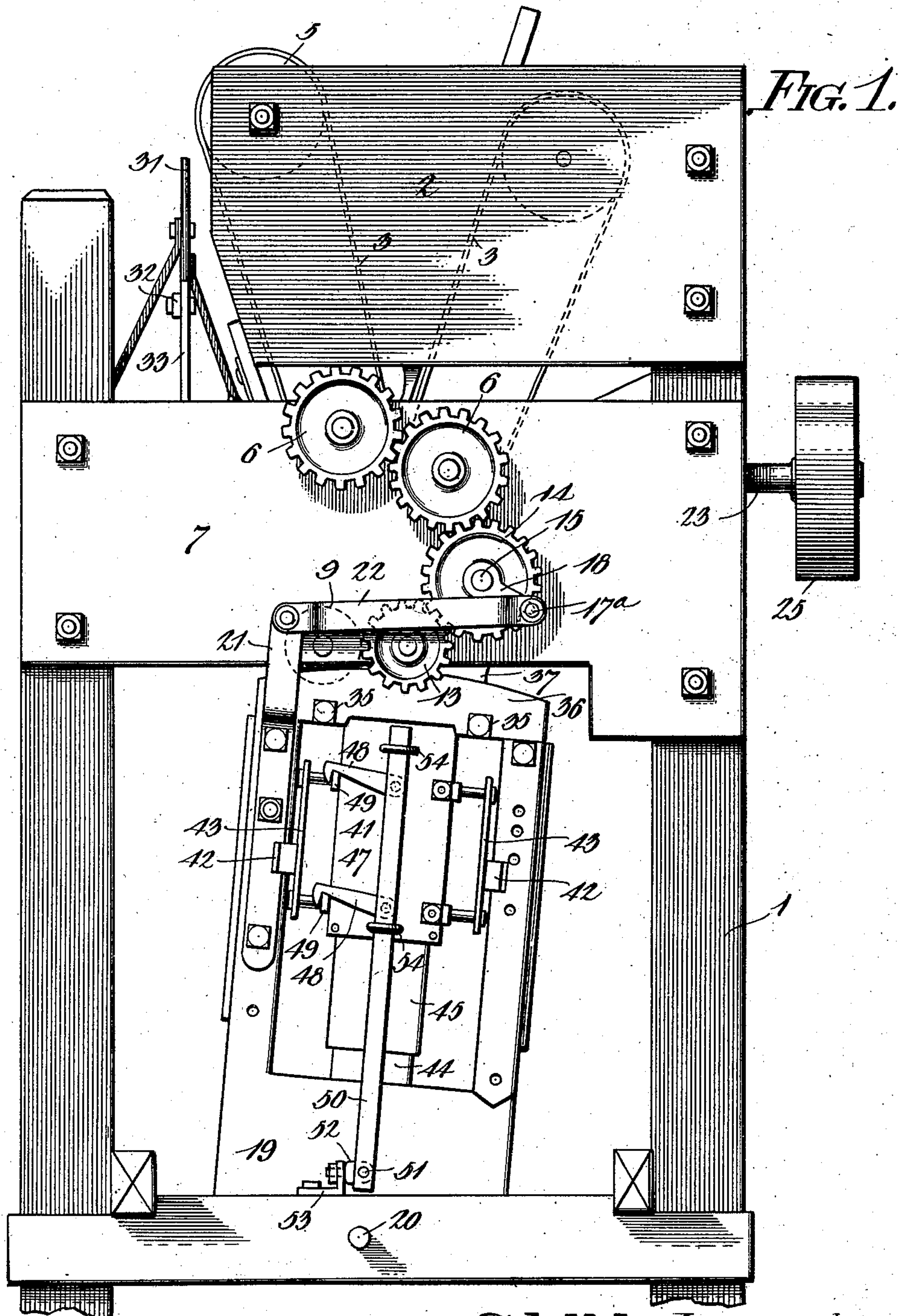
Patented Apr. 22, 1902.

S. M. NEELY.
COTTON PRESS.

(Application filed Dec. 21, 1901.)

(No Model.)

4 Sheets—Sheet 1.



Witnesses

Robert Culverwell.
John Warner

S. M. Neely,

by

Chas. H. Snow & Co.

Attorneys

Inventor

No. 698,043.

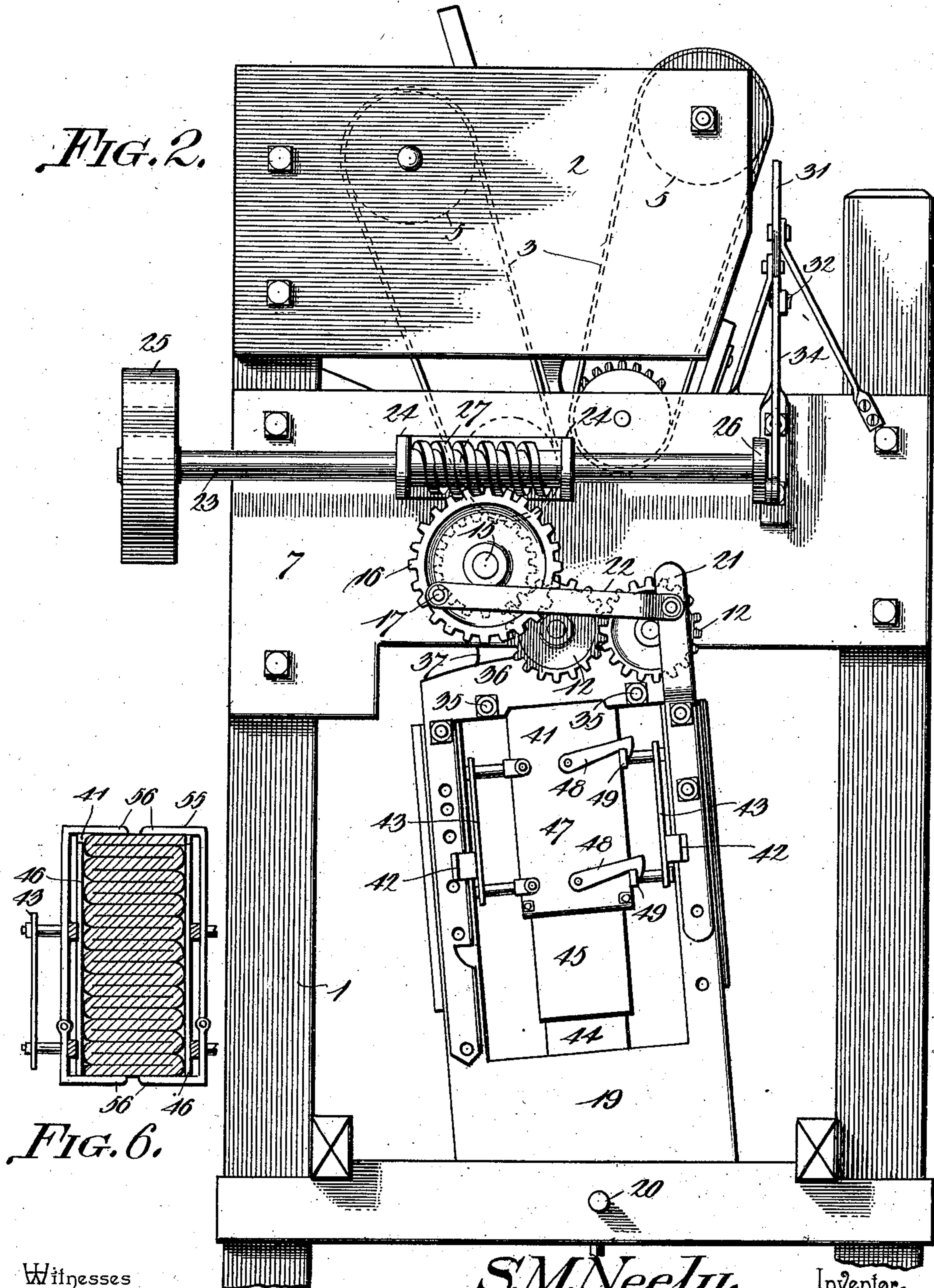
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4 Sheets—Sheet 2.



Witnesses

Frank Culverwell.
J. W. Garner

S. M. Neely, Inventor.
by *C. A. Snow & Co.*
Attorneys

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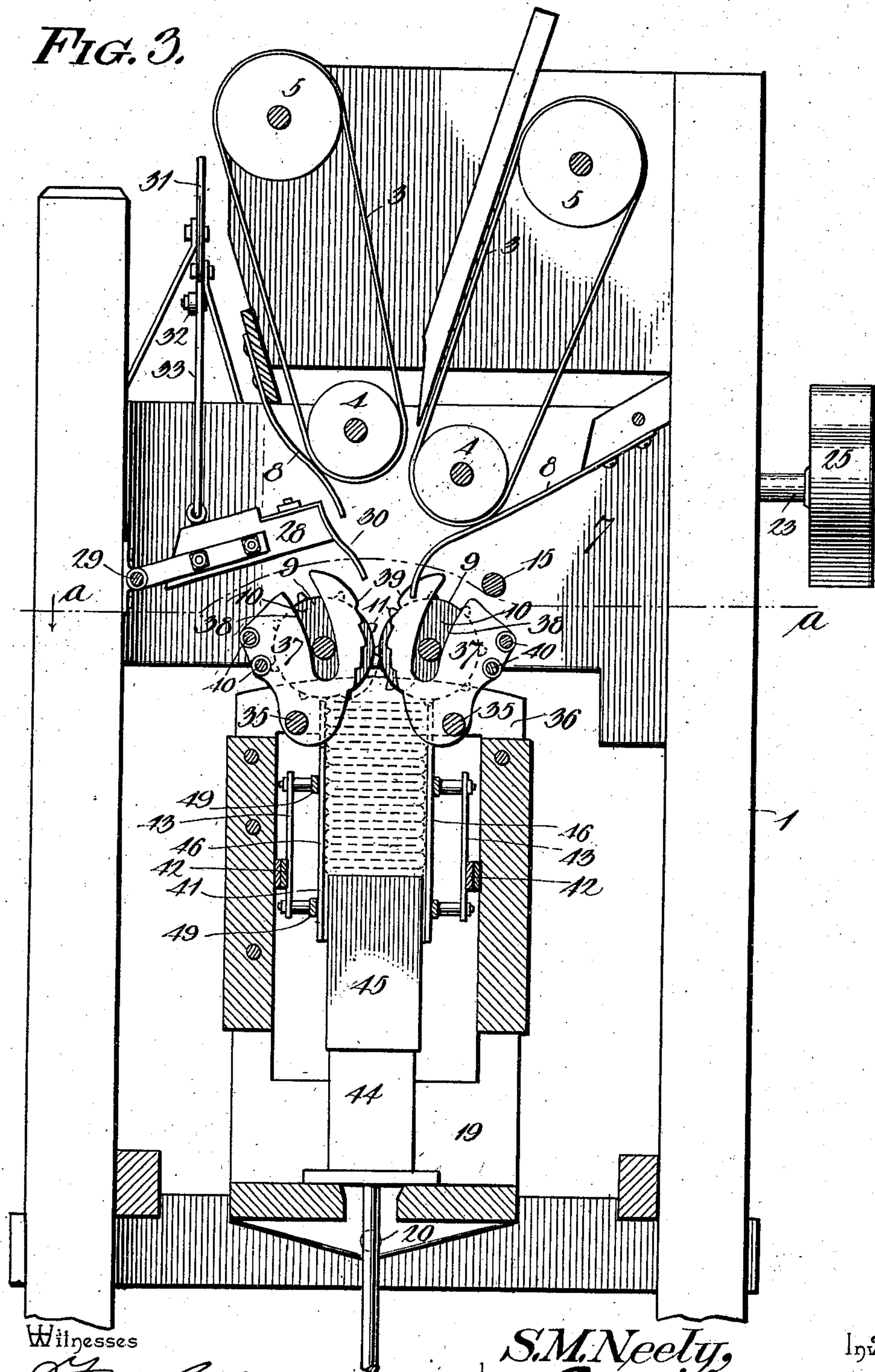
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4 Sheets—Sheet 3.

FIG. 3.



Witnesses

Frank Culverwell.
J. W. Garner

S. M. Neely,
by

C. A. Snow & Co.
Attorneys

Inventor.

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4 Sheets—Sheet 4.

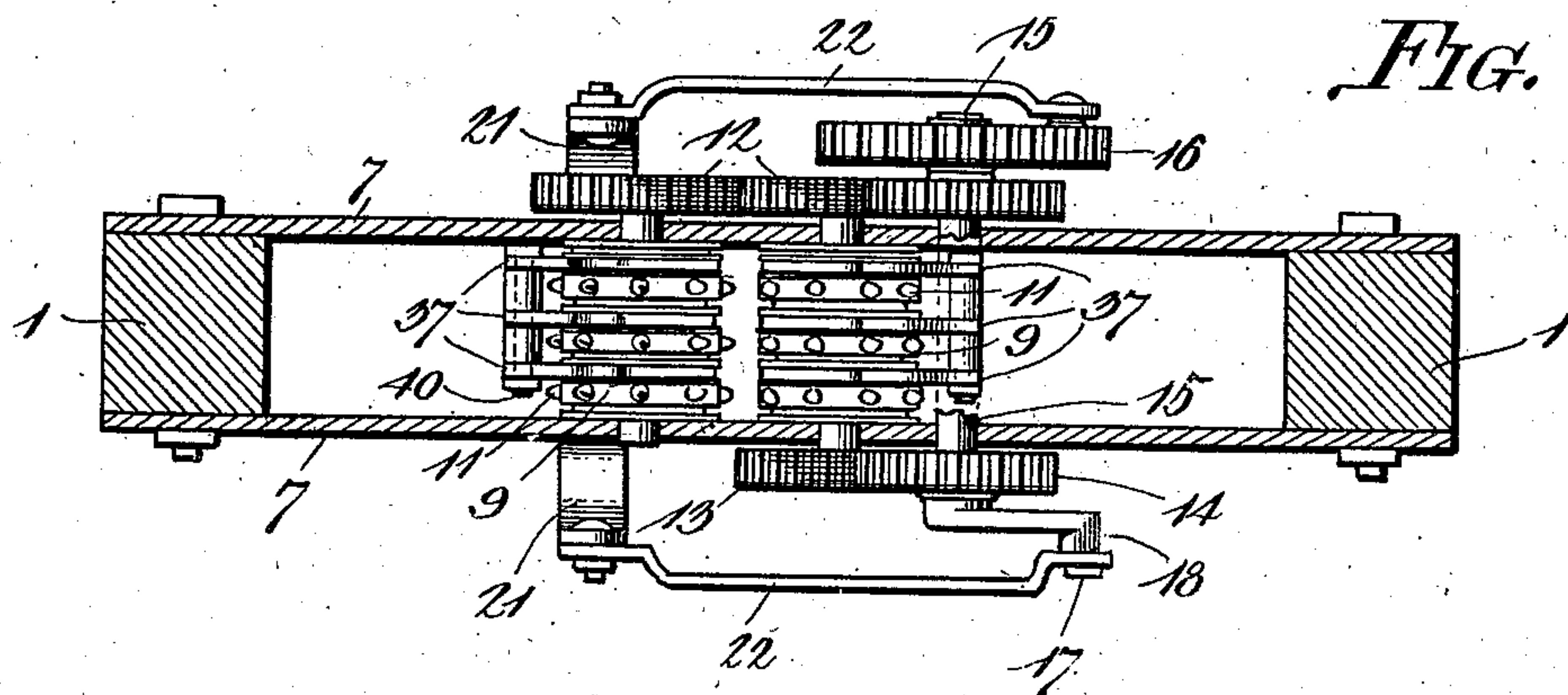


FIG. 4.

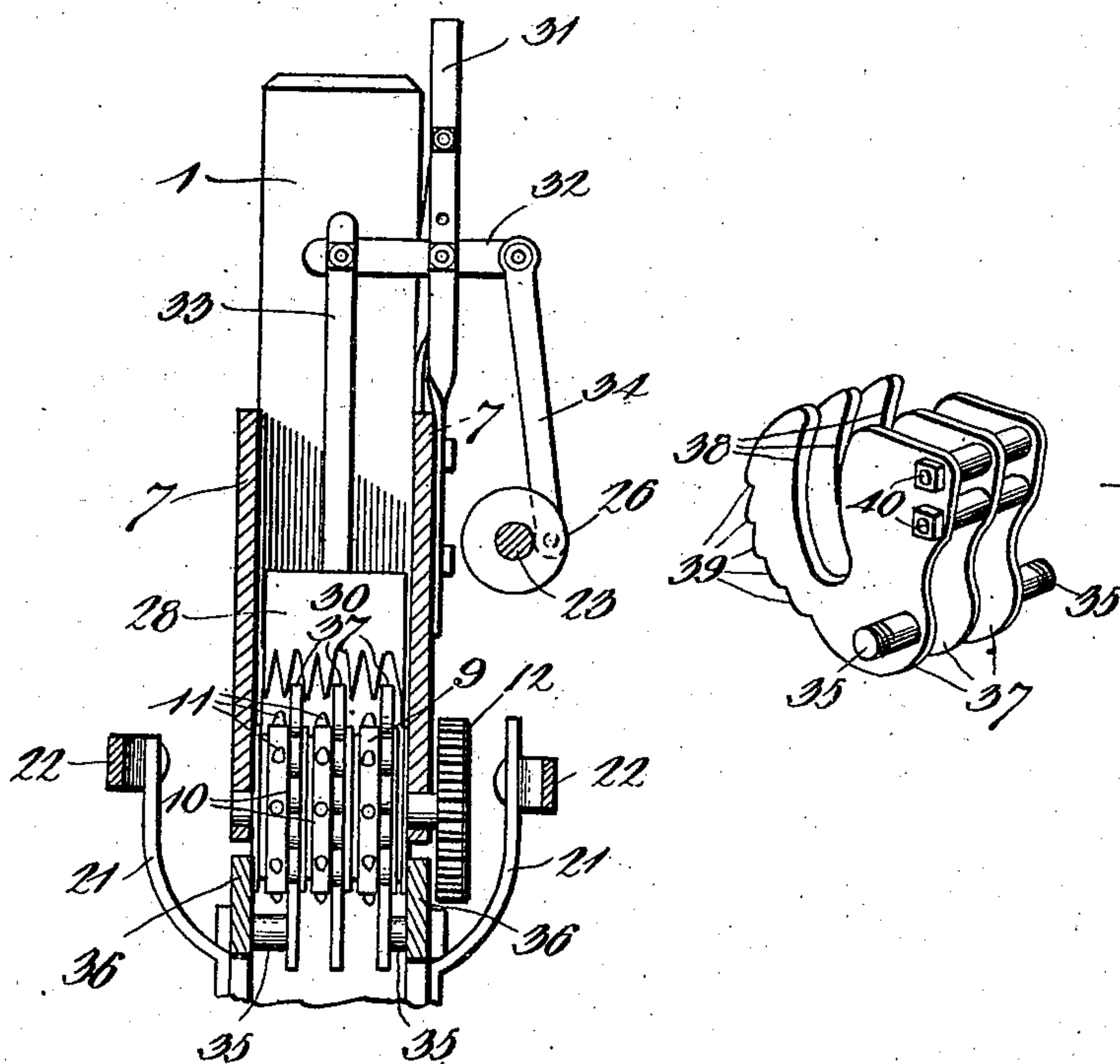


FIG. 5.

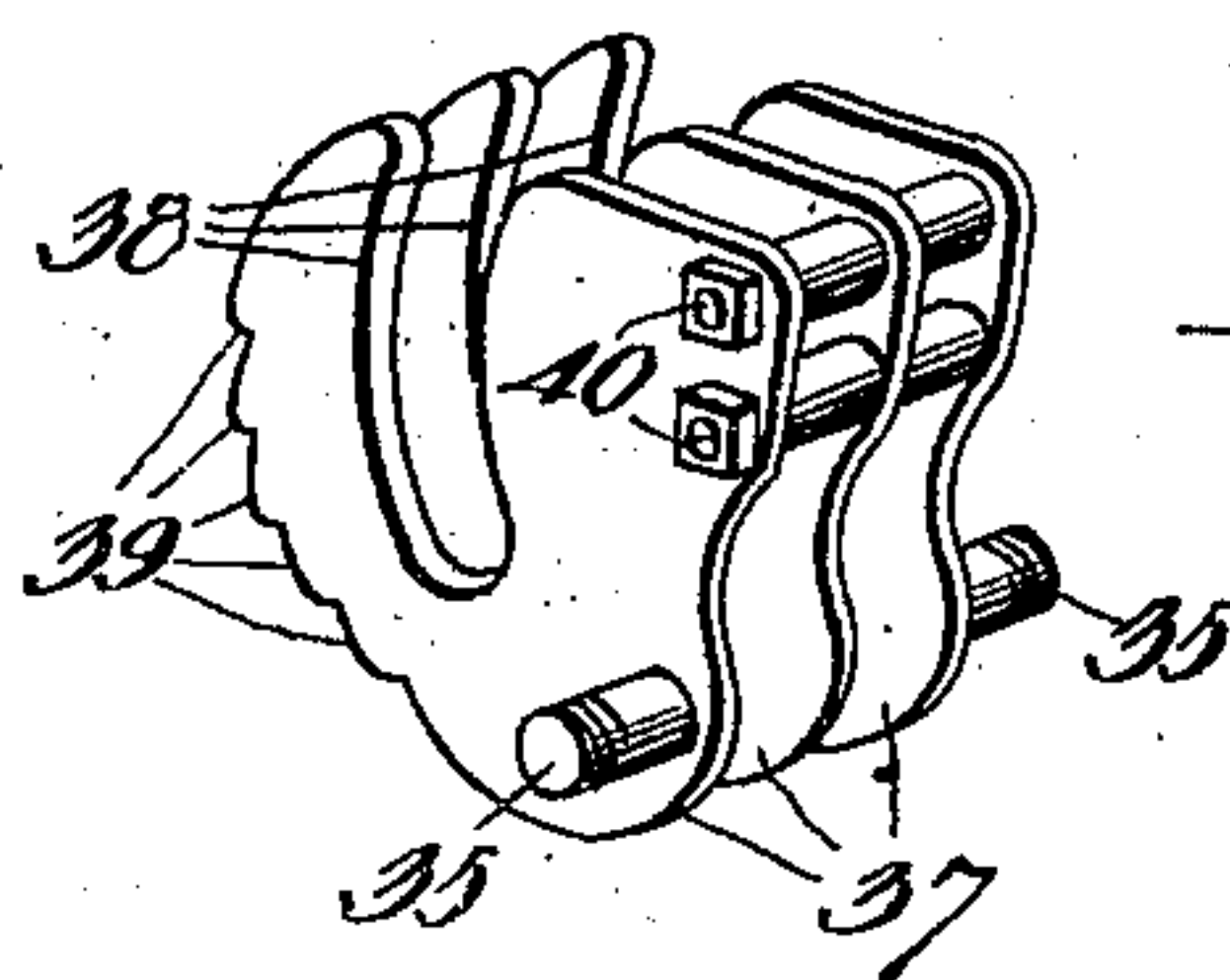


FIG. 7.

Witnesses
Frank C. Culverwell.
J. W. Garner

by *S. M. Neely.* Inventor.
C. A. Snow & Co. Attorneys

UNITED STATES PATENT OFFICE.

SAMUEL M. NEELY, OF CHESTER, SOUTH CAROLINA.

COTTON-PRESS.

SPECIFICATION forming part of Letters Patent No. 698,043, dated April 22, 1902.

Application filed December 21, 1901. Serial No. 86,811. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL M. NEELY, a citizen of the United States, residing at Chester, in the county of Chester and State of South Carolina, have invented a new and useful Cotton-Press, of which the following is a specification.

My invention is an improved press adapted for baling cotton, hay, or other material; and it consists in the peculiar construction and combination of devices hereinafter fully set forth and claimed.

In the accompanying drawings, Figure 1 is a side elevation of my improved press. Fig. 2 is a similar view showing the reverse side of the same. Fig. 3 is a vertical longitudinal sectional view of the same. Fig. 4 is a horizontal sectional view of the same, taken on a plane indicated by the line *aa* of Fig. 3. Fig. 5 is a vertical transverse sectional view of the upper portion of the press, showing the connections for operating the tramper. Fig. 6 is a detail sectional view of the press-box, showing the same removed from the oscillating frame and showing the dogs which retain the bat in position therein prior to the tying or banding of the bale. Fig. 7 is a detail perspective view of one set of the feeding-jaws which coöperate with the feed-rollers.

In the embodiment of my invention here shown I provide a vertical frame 1, at the upper end of which is a condenser 2 for forming cotton-bat. Within the scope of my invention the condenser may be of any suitable construction. It is here shown as including a pair of endless traveling condensing belts or aprons 3, which are driven and supported by rollers 4 5. The rollers 4 have their shafts provided at one end, on one side of the frame 1, with spur-wheels 6, which engage each other, and the shafts of the said rollers are journaled in bearings in side plates 7, with which the frame 1 is provided. Guide-plates 8 have their outer upper ends supported in the frame 1, and the lower portions of the said guide-plates, which are resilient and tend to spring upwardly, bear under the lower rollers 4 of the condenser and bear against the condensing belts or aprons 3 and are so disposed as to guide the bat down-

wardly from the throat of the condenser or space between the lower portions of the condensing-belts 3.

A pair of feed-rollers 9 have their shafts journaled in bearings in the plates 7, and the said feed-rollers are disposed close together and are respectively disposed below the condensing-rollers 4. The said feed-rollers are provided with annular grooves 10 of suitable depth, which grooves are here shown as extending from the feed-roller shafts to the peripheries of the feed-rollers. The latter are also provided with peripheral spurs 11, which are somewhat blunt. The shafts of the feed-rollers 9 are each provided at one end with a spur-gear 12. The said spur-gears mesh with each other, and hence the said feed-rollers are adapted to simultaneously rotate in opposite directions. The shaft of one of the feed-rollers is further provided on its opposite end with a spur-wheel 13, which engages a spur-gear 14 on a counter-shaft 15, which is disposed transversely of the frame 1 and is journaled in bearings in the side plates 7. Said spur-gear 14 engages one of the spur-gears 6 of the condenser mechanism, and hence power is communicated thereto from the counter-shaft. The latter is provided at the end opposite the gear 14 with a worm-wheel 16, which has a crank-pin 17, projecting from the outer side thereof. At the opposite end of the counter-shaft 15 is a crank-arm 18, which has a crank-pin 17^a. An oscillating frame 19 has its lower end pivotally connected to the frame 1, as at 20. Said oscillating frame is provided on opposite sides with upwardly-projecting arms 21, to which are pivotally-connected links 22, which links are respectively connected to the crank-pins 17 17^a. Hence oscillating motion is imparted to the frame 19, which carries the press-box or baling-chamber hereinafter described.

A power-shaft 23 is journaled in bearings 24 on one side of the frame 1, said bearings 24 being here shown as disposed on the outer side of one of the plates 7. Said power-shaft has a pulley 25 at its outer end, whereby it may be driven, a crank 26 at its inner end, and is provided further with a worm 27, which engages the worm-wheel 16. Hence power is

communicated from the power-shaft to the counter-shaft 15 and from the latter to the condenser, the feed-rollers, and the oscillating frame.

5 An oscillating tramper 28 is pivotally connected at its outer end to one side of the frame 1, as at 29 in Fig. 3. At the inner end of the said tramper is a tramper-head 30, which is disposed for operation in the space
10 between the feed-rollers and the condenser, and, in coaction with the guide-plates 8, causes the bat to be fed from the condenser between the feed-rollers, so that the bat is caught by the feed-rollers and by the rotation
15 of the latter forced into the press-box or baling-chamber carried by the oscillating frame. A standard 31 rises from one of the side plates 7 of the press. An oscillating lever 32 is fulcrumed to the said standard. The inner end
20 of said oscillating lever is connected to the tramper by a link-bar 33, and the outer end thereof is connected by a pitman 34 to the pin of the crank 26 on the power-shaft. Hence the tramper is caused to operate when the
25 press is in operation, as will be understood.

The upper end of the oscillating frame 19, which is the mouth thereof, is open. Across the same, near opposite sides of the oscillating frame, are rock-shafts 35, which are jour-
30 naled in bearings in the sides 36 of said oscillating frame. Oscillating feed-jaws 37 are mounted on the shafts 35 and are adapted to oscillate, and the said feed-jaws are provided with eccentrically-disposed cam-
35 slots 38. The said feed-jaws have their inner sides disposed in the annular grooves of the feed-rollers 9 and their cam-slots 38 engaged by the shafts which form the central portions of said feed-rollers, and hence the
40 oscillating motion of the frame 19, which carries the feed-jaws, causes the latter to oscillate, as will be understood. The opposing sides of the oscillating feed-jaws are curved reversely and are provided with serrations
45 39, which adapt the said feed-jaws to grasp a bat as it passes downwardly between the feed-rollers and to force the bat downwardly into the press box or chamber carried by the oscillating frame. Any suitable number of
50 the feed-jaws may be employed, and those on opposite sides of the oscillating frame are respectively connected together by bolts 40 or other suitable connecting devices.

The press-box or baling-chamber 41 may,
55 within the scope of my invention, be of any suitable construction. The sides of the oscillating frame 19 are of open construction, so that the press-box may be readily placed in the oscillating frame and removed there-
60 from. Any suitable means may within the scope of my invention be employed to secure the press-box in the oscillating frame. In practice I employ two or more press-boxes in connection with the press, so that cotton-
65 bat may be compressed in one press-box to form a bale therein while a press-box in

which a bale has been previously formed is removed from the oscillating frame to be bound and removed from the press-box, hence enabling the press to operate almost
70 continuously. In the embodiment of my invention here shown the oscillating frame 19 is provided in opposite sides with transversely-disposed spring-catches 42. The press-box is provided on opposite sides with lock-plates
75 43, which may be engaged by said spring-catches 42 to secure the press-box in the oscillating frame. The ends of the press-box are open and the upper end thereof is inserted between the side plates 36 at the mouth
80 of the oscillating frame. In connection with the oscillating frame and the press-box I provide a suitable pressure mechanism, such as is indicated at 44, and which has a piston or head 45, that is adapted to operate in the
85 press-box. The said pressure mechanism also tends to maintain the press-box in its operative position in the oscillating frame. The press-box has removable oppositely-disposed sides 46, which are secured between the sides
90 47 of the press-box by hooks 48, which are pivoted on said sides 47 and are adapted to engage studs 49, that project from the sides 46.

To facilitate the placing of a press-box in the oscillating frame and its removal there-
95 from, I provide a rocking bar 50. The same is at its lower end pivoted, as at 51, to a head 52, which is pivoted on a bracket or support 53 at one side of the base of frame 1. The respective pivotal axes of the head 52 are at
100 right angles to each other, so that the bar 50 is adapted for universal rocking movement. One side of the press-box is provided with keepers 54, and the said rocking bar 50 is adapted to be engaged with and passed
105 through the said keepers. When the press is in operation, the rocking bar 50 oscillates with the frame 19 and the press-box carried thereby. In order to disengage the press-box from the rocking frame 19 after the press-box
110 has been filled by the operation of the press with compressed layers of cotton-bat, the operation of the press having been discontinued, the piston or head of the fluid-pressure mechanism is withdrawn from the press-
115 box, thereby permitting the latter to be lowered in the oscillating frame until its upper end is disengaged from the mouth thereof, the spring-catches 42 are caused to disengage the lock-plates 43, and the press-box is then
120 swung laterally outwardly from and out of the oscillating frame on the rocking bar 50 and is withdrawn longitudinally from said rocking bar, when another press-box is placed on said rocking bar and secured in operative
125 position in the oscillating frame.

It will be understood that the oscillating movement of the press-box in the oscillating frame transversely with reference to the feed-rollers causes the bat fed by the said rollers
130 and the oscillating feed-jaws into the press-box to be disposed in superincumbent layers

therein against the pressure of the fluid-pressure mechanism. Hence the bales may be formed of any desired density in the press-boxes by regulating the pressure of the fluid in the fluid-pressure mechanism.

In connection with the press-box I employ a pair of dogs 55 on each of two opposite sides of the press-box, which dogs are preferably of the form shown in Fig. 6 and have the hooked portions 56 disposed to lie partially across the ends of the press-box to retain the compressed bale therein when the press-box is removed from the press and prior to the tying or banding of the bale.

I do not desire to limit myself to the precise construction and combination of devices herein shown and described, as it is evident that modifications may be made therein without departing from the spirit of my invention.

Having thus described my invention, I claim—

1. In a press of the class described, the combination of a pair of feed-rollers in fixed bearings, a press-box having its mouth disposed opposite the feed-rollers and movable to and fro across the same and oscillating feed-jaws, coacting with the feed-rollers, to force a bat into the press-box, substantially as described.

2. In a baling-press of the class described, the combination of feed-rollers, a press-box, said feed-rollers and press-box being movable the one with reference to the other, and oscillating feed-jaws coacting with the feed-rollers to force a bat from between the feed-rollers into the press-box, substantially as described.

3. In a press of the class described, the combination of a pair of feed-rollers, a press-box having its mouth disposed opposite the feed-rollers and oscillating feed-jaws coacting with the feed-rollers to force a bat from between the feed-rollers into the press-box, the said oscillating feed-jaws having serrations on their bat-engaging sides, substantially as described.

4. The combination of feed-rollers in fixed bearings, a press-box having its mouth disposed and movable to and fro across the feed-rollers and opposite the same, and oscillating feed-jaws carried with the press-box, said feed-jaws and said feed-rollers having coacting means whereby said feed-jaws are oscillated by the movement of the press-box, substantially as described.

5. The combination of feed-rollers in fixed bearings, a press-box having its mouth disposed opposite the feed-rollers and movable to and fro across the same, and oscillating feed-jaws carried with the press-box, said feed-jaws having cam-slots eccentric of their pivots and engaged by the said feed-rollers whereby oscillating motion is imparted to the feed-jaws, substantially as described.

6. The combination of feed-rollers in fixed bearings and having annular grooves, a press-

box having its mouth disposed opposite the feed-rollers and movable to and fro across the same and oscillating feed-jaws carried with the press-box, said feed-jaws engaging and operating in said annular grooves of the feed-rollers and having cam-slots engaged by the central portions of the said feed-rollers, whereby oscillating motion is imparted to the feed-jaws, substantially as described.

7. In a press of the class described, the combination of feed-rollers in fixed bearings, an oscillating frame having an open mouth disposed opposite the feed-rollers, a press-box detachable from and carried by said oscillating frame, and an oscillating bar movable with and also movable laterally with relation to said oscillating frame, said oscillating bar and said detachable press-box having coacting means whereby the press-box is detachably connected to said oscillating bar, substantially as described.

8. In a baling-press of the class described, the combination of an oscillating press-box frame, feed-rollers in fixed bearings and disposed opposite the mouth of the press-box, gears connecting said feed-rollers together, a crank-shaft having a gear engaging one of the gears of the feed-rollers, and a connection between said crank-shaft and the oscillating press-box frame, whereby the latter is oscillated, substantially as described.

9. In a baling-press of the class described, the combination of an oscillating press-box frame, feed-rollers in fixed bearings and disposed opposite the mouth of the press-box, gears connecting said feed-rollers together, a crank-shaft having a gear engaging one of the gears of the feed-rollers, a connection between said crank-shaft and the oscillating press-box frame, whereby the latter is oscillated, an oscillating tramper to coact with the feed-rollers, a power-shaft geared to the crank-shaft, and connections between said power-shaft and said tramper, whereby the latter is operated by the former, substantially as described.

10. In a baling-press of the class described, the combination of an oscillating press-box frame, feed-rollers in fixed bearings and disposed opposite the mouth of the press-box, gears connecting said feed-rollers together, a crank-shaft having a gear engaging one of the gears of the feed-rollers, a connection between said crank-shaft and the oscillating press-box frame, whereby the latter is oscillated, an oscillating tramper coacting with the feed-rollers, a power-shaft geared to the crank-shaft and having a crank, a lever-bar, a link connecting the latter to the oscillating tramper, and a pitman connecting said lever-bar to the crank of the power-shaft, substantially as described.

11. In combination with a press-box and revoluble feed-rollers disposed opposite each other to feed a bat into the press-box, auxiliary bat-engaging feeding elements having

curved opposing sides of greater radius than
the feed-rollers, substantially coincident with
the opposing sides of the feed-rollers and ca-
pable of revoluble motion so that their oppos-
5 ing sides move with the opposing sides of the
feed-rollers toward the press-box, substan-
tially as described.

In testimony that I claim the foregoing as
my own I have hereto affixed my signature in
the presence of two witnesses.

SAMUEL M. NEELY.

Witnesses:

W. S. SMITH,
J. C. CARSON.