No. 689,627. Patented Dec. 24, 1901.

J. C. TOM & H. F. WALKER.

BALING PRESS.

(Application filed May 28, 1901.)

(No Model.) 3 Sheets—Sheet 1.

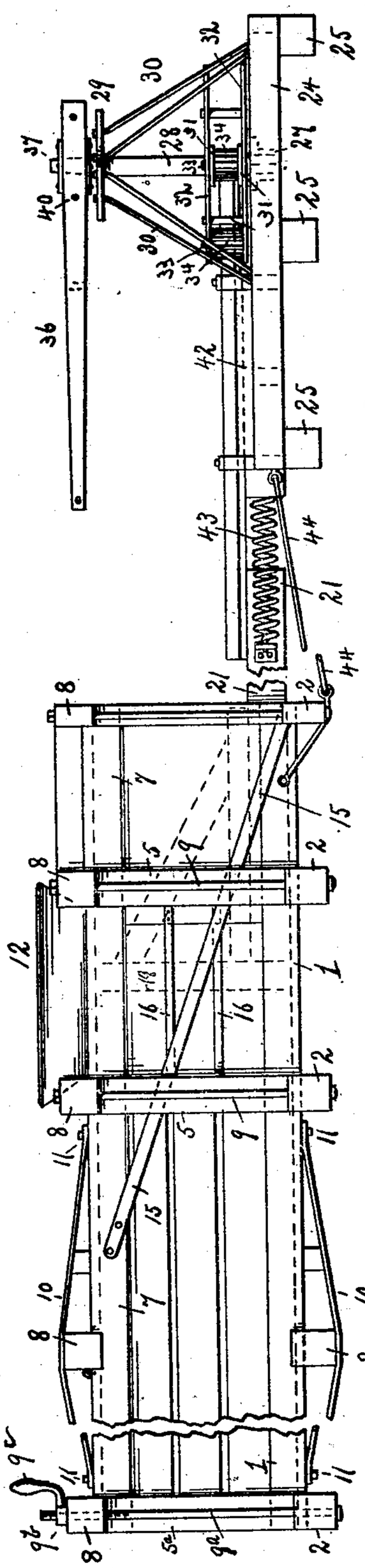

FIG. 1.

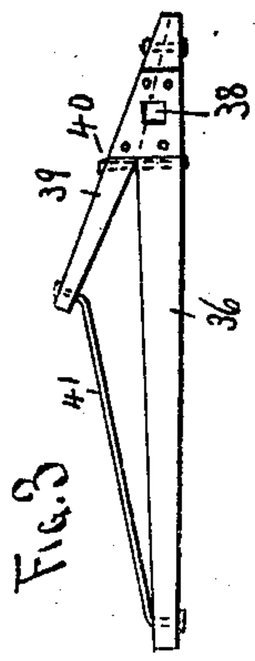

FIG. 3.

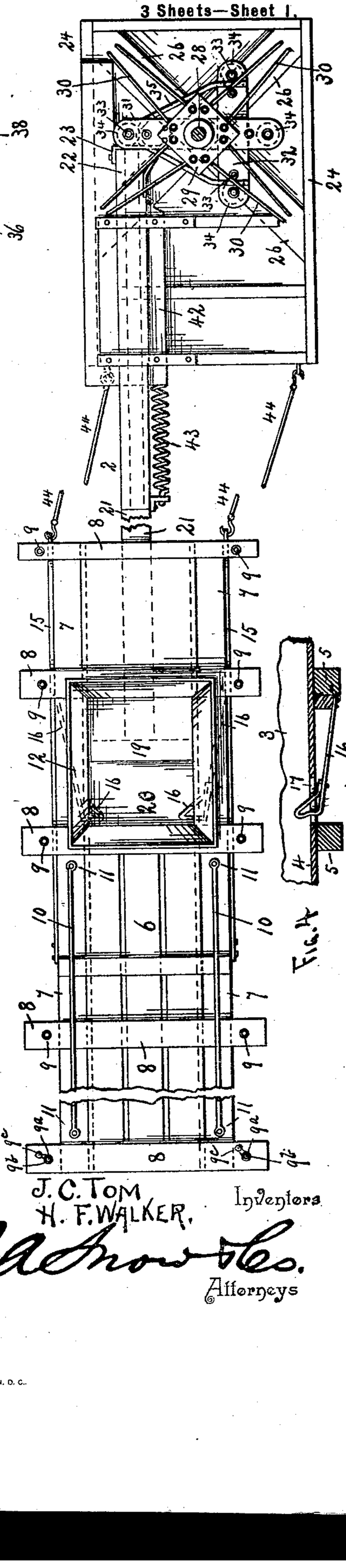

FIG. 2.

FIG. 4.

Witnesses
C. H. Woodward
J. W. Garner

Inventors
J. C. TOM
H. F. WALKER.
by C. A. Snow & Co.
Attorneys

No. 689,627. Patented Dec. 24, 1901.

J. C. TOM & H. F. WALKER.

BALING PRESS.

(Application filed May 28, 1901.)

(No Model.) 3 Sheets—Sheet 2.

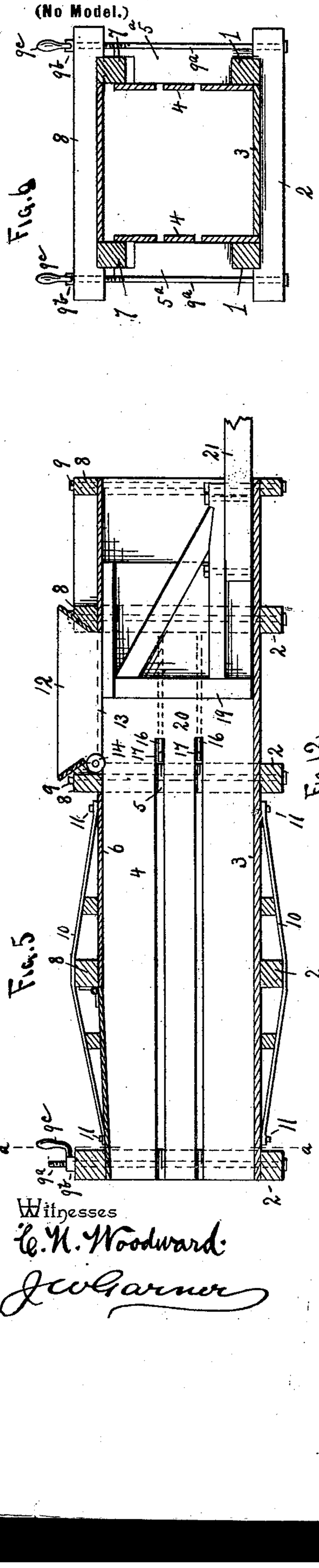

FIG. 5

FIG. 6

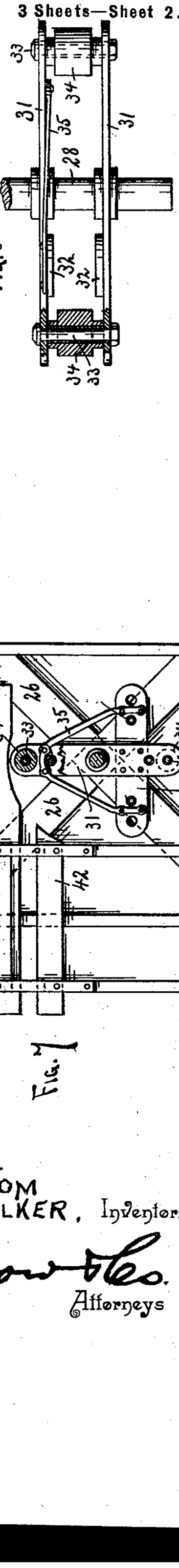

FIG. 8

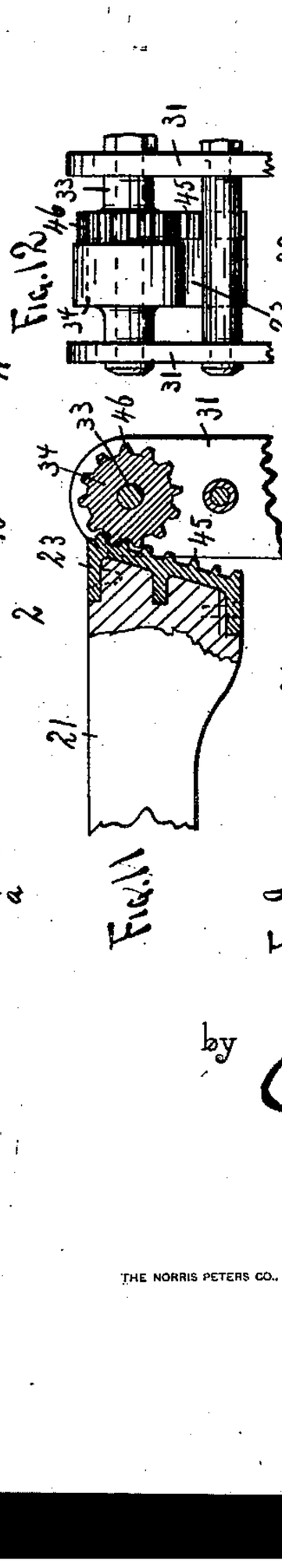

FIG. 12

FIG. 11

FIG. 9

FIG. 10

FIG. 7

Witnesses
C. M. Woodward.
J. C. Garner

J. C. TOM
H. F. WALKER, Inventors
by Crosby & Geo.
Attorneys

No. 689,627. Patented Dec. 24, 1901.

J. C. TOM & H. F. WALKER.

BALING PRESS.

(Application filed May 28, 1901.)

(No Model.) 3 Sheets—Sheet 3.

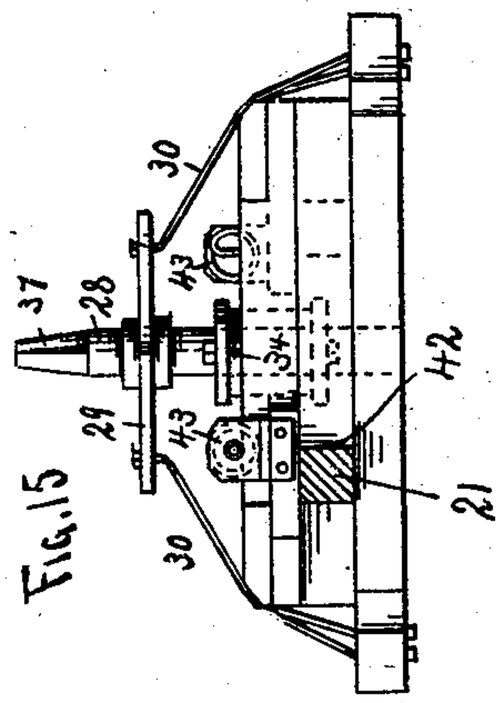

FIG. 15

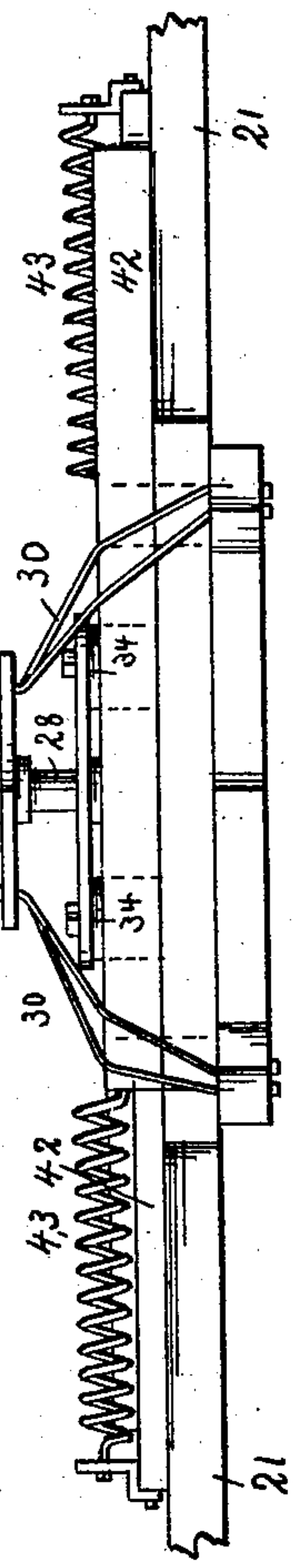

FIG. 13

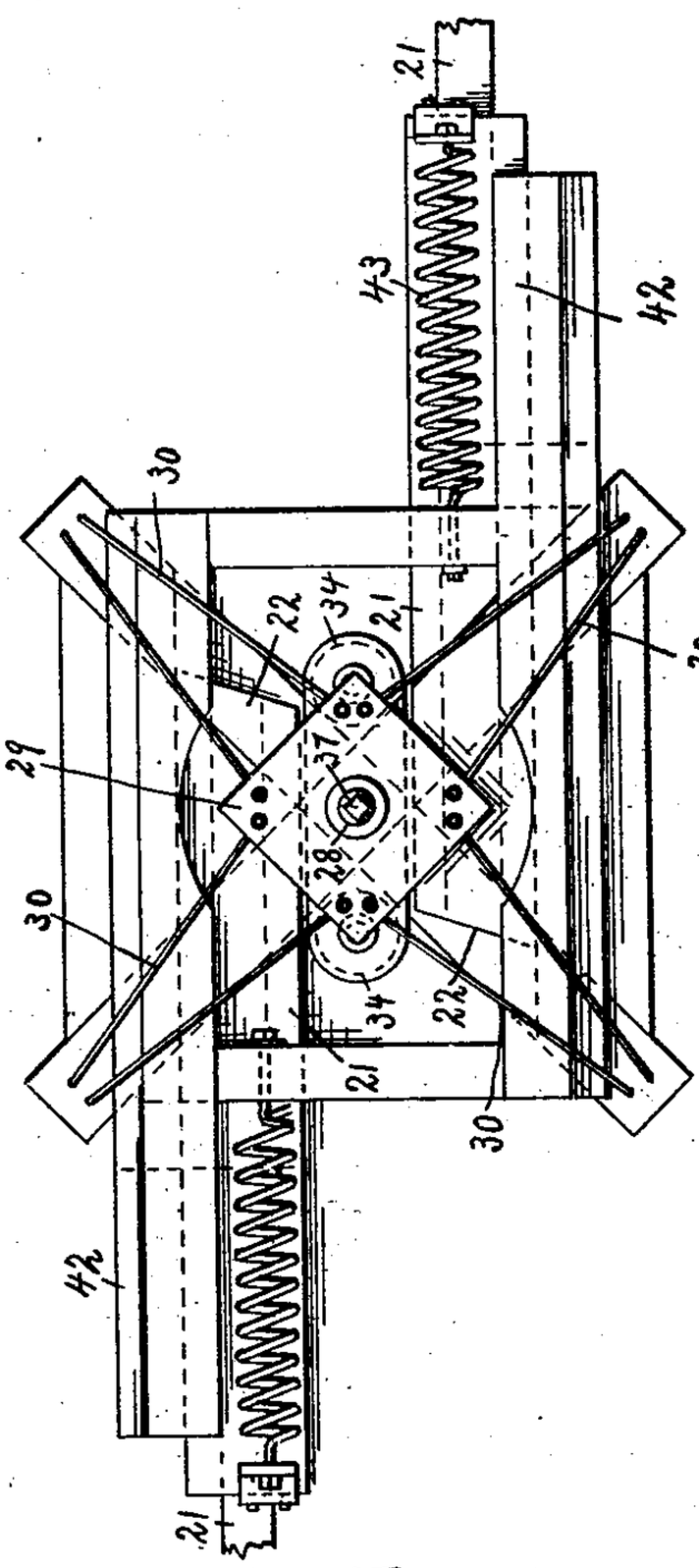

FIG. 14

Witnesses
C. M. Woodward
J. C. Garner

J. C. TOM,
H. F. WALKER Inventors
by C. A. Snow & Co.
Attorneys

UNITED STATES PATENT OFFICE.

JOSEPH C. TOM AND HIRAM F. WALKER, OF CHEROKEE, TEXAS.

BALING-PRESS.

SPECIFICATION forming part of Letters Patent No. 689,627, dated December 24, 1901.

Application filed May 28, 1901. Serial No. 62,269. (No model.)

To all whom it may concern:

Be it known that we, JOSEPH C. TOM and HIRAM F. WALKER, citizens of the United States, residing at Cherokee, in the county of San Saba and State of Texas, have invented a new and useful Baling-Press, of which the following is a specification.

Our invention is an improved baling-press; 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 a baling-press embodying our improvements. Fig. 2 is a top plan view of the same. Fig. 3 is a detail top plan view of the sweep bar or lever. Fig. 4 is a detail horizontal section of a portion of the press-box, showing the construction and arrangement of the detent-spring therein. Fig. 5 is a vertical longitudinal sectional view taken through the center of the press-box. Fig. 6 is a vertical transverse sectional view of the same, taken on a plane indicated by the line *a a* of Fig. 5. Fig. 7 is a detail top plan view, partly in section, of the horse-power mechanism for operating the plunger of the press. Fig. 8 is a detail view of the same. Figs. 9 and 10 are detail perspective views of the plunger-bar. Figs. 11 and 12 are detail views of a modified form of the plunger-bar and one of the coacting tappet-rollers. Fig. 13 is an elevation of a modified form of our horse-power mechanism adapted for operating the plunger-bars of two baling-presses simultaneously. Fig. 14 is a top plan view of the same. Fig. 15 is an elevation of the same at right angles to Fig. 13.

The sills 1 of the press-box are supported upon cross-bars 2, the ends of which project beyond the outer sides of the sills. The bottom 3 or floor of the press-box is laid on the said cross-bars between the said sills. The sides 4 of the press-box are secured to studs 5, which rise from the cross-bar 2. The top 6 of the press-box has plates 7 at its sides, and secured on the upper sides of said plates are cross-bars 8, which project beyond the outer sides of the plates. Bolts 9, which are vertically disposed, pass through the projecting ends of the cross-bars 2 and 8 and strengthen the construction of the press-box, as will be understood. At the rear end of the press-box the studs 5^a are shortened at their upper ends, thereby permitting the rear portion of the top of the press-box to play vertically, and the bolt-rods 9^a, which connect the rear cross-bars 2 and 8 together, have their nuts 9^b provided with handles 9^c, by which they may be readily turned to depress the rear end of the top of the press-box, and thereby retard the passage of the bales through the press-box, and hence secure the desired density in the formation of the bales. On the top and under the bottom of the press-box are truss-rods 10, which pass under the central cross-bar 2 and over the central cross-bar 8 and have their ends bolted to the top and bottom of the press-box, as at 11. Hence the press-box is exceedingly strong and durable. Near the front end of the press-box, on the upper side thereof, is a feed-hopper 12. At the rear side of the feed-opening 13 in the top of the press-box is a transversely-disposed antifriction-roller 14. Inclined brace-rods 15 are also employed on the sides of the press-box which connect the sills and the plates, as shown in Fig. 1. On the sides of the bale-forming portion of the press-box are spring-detents 16, which project into the press-box through openings 17 in the sides thereof and prevent forward movement of the completed bales in the bale-chamber 18 of the press-box.

A plunger 19 is disposed in and adapted to move back and forth in the bale-forming chamber 20 of the press-box. Said plunger is preferably of the construction shown in Fig. 5 and is provided with a plunger-rod 21, which extends a suitable distance from the front end of the press-box. The plunger-rod is provided at its outer end with a tappet-head 22, which is shod with iron or steel, as at 23.

The sills 24 of the horse-power mechanism for operating the plunger of the press are supported on cross-bars 25 and are connected together also by crossed bars 26. The latter are provided at their centers with a bearing 27 for the lower end of a power-shaft 28. The bearing for the upper portion of said power-shaft is a plate 29 of iron or steel, and the said plate is connected to the crossed bars 26 by bolt-rods 30. A pair of power-arms 31, which are disposed one above the other at a suitable distance apart, are keyed on the

power-shaft 28. A pair of power-arms 32 are secured at right angles to said power-arms 31 at a point on one side of the power-shaft. Spindle-bolts 33 connect the outer ends of the power-arms 31, and similar spindle-bolts connect the ends of the power-arm 32. The said spindle-bolts may be readily removed from the power-arms. Tappet-rollers 34 are journaled on the said spindle-bolts and are adapted to be readily removed therefrom and from the power-arms. Hence one or more of the tappet-rollers may be employed, accordingly as it is desired to operate the plunger one or more times at each rotation of the power-shaft. A brace-rod 35, which is substantially U-shaped, has its central portion bolted under the upper power-arm 31 and has its ends bolted on the upper power-arm 32 near the ends thereof. A sweep bar or lever 36 is detachably secured on the upper end of the power-shaft 28, the latter having its upper portion angular in cross-section, as at 37, and the said sweep bar or lever having an angular opening 38 to receive the said angular portion of the power-shaft. A brace-bar 39 is bolted at the inner end of the sweep arm or lever on the rear side thereof, as at 40, and a brace-rod 41 connects the ends of said sweep lever and said brace-arms, as shown in Fig. 3. The base-frame of the horse-power mechanism is provided on one side with a guideway 42, in which operates the outer portion of the plunger-bar. A spring 43 is connected to the plunger-bar and to the base-frame of the horse-power mechanism and normally moves the plunger-bar outwardly. Rods 44 connect the base-frame of the horse-power mechanism to the outer end of the press-box.

It will be observed by reference to the drawings that the tappet-head 22 of the plunger-bar is disposed by the spring 43 in the paths of the tappet-rollers carried by the revolving power-arms of the horse-power mechanism. As the said power-arms rotate the said tappet-rollers successively engage the tappet-head of the plunger-bar and move the same inwardly in the press-box, the spring 43 as each tappet-roller disengages said plunger-rod returning the plunger to its initial position. It will be observed by reference to Fig. 7 of the drawings that the tappet-rollers are grouped more closely together on one side of the power-shaft than on the other, so that at each rotation of the power-shaft the plunger will be given one long compressing stroke by the isolated tappet-roller and a series of short ramming strokes by the more closely grouped tappets in rapid succession, thereby effectually compressing each bat in the formation of a bale. It will be understood that the spring 43 causes the plunger to rebound after each stroke thereof. Since the tappet-rollers are removable at will, one or more of them may be employed to secure one or more strokes of the plunger at each rotation of the power-shaft and to vary the length of the strokes of the plunger and the speed thereof as may be desired.

In Figs. 13, 14, and 15 we illustrate a modified form of our improved horse-power mechanism, which is adapted for simultaneously operating the plunger-bars of a pair of the presses. The frame of said horse-power mechanism is substantially the same as hereinbefore described. There are guides 42 on opposite sides thereof, and the plunger-bars 21 in said guides are on opposite sides of the shaft 28. A pair of power-arms disposed in the same vertical plane are carried by said shaft 28, and the tappet-rollers 34, of which there is a pair, are mounted for revolution between the outer ends of the said power-arms.

In Figs. 11 and 12 we illustrate another modification of our invention, in which the shoe 23 of the plunger-bar is provided on its outer side with spur-teeth 45 and the tappet-rollers 34 are provided with spur-sections 46, adapted to engage the toothed portion of the said shoe and insure the rotation of the tappet-rollers when the same come in operative contact with the tappet-head of the plunger-bar.

Having thus described our invention, we claim—

1. In combination with a baling-press having a reciprocating plunger and a retracting-spring therefor, a revoluble power element having an isolated tappet-roller on one side and a series of closely-grouped tappet-rollers on the opposite side, to engage said plunger and in coaction with said retracting-spring to impart a single long compressing stroke and a series of short ramming strokes thereto at each rotation of the revoluble power element, substantially as described.

2. In combination with a baling-press having a plunger provided with a plunger-bar and a tappet-head at the outer end of said plunger-bar, a frame having a guideway for said plunger-bar to direct the latter in a right line, a retracting-spring for the said plunger-bar, a revoluble power-shaft mounted on said frame, a bearing-plate for the upper portion of said power-shaft, bolt-rods connecting said bearing-plate to said frame, power-arms 31 secured on said power-shaft, power-arms 32 disposed at an angle to said power-arms 31 and secured thereto at a point beyond one side of said power-shaft, a brace-rod 35 connecting said power-arms 31, 32, bolt-spindles detachably secured in the outer ends of said power-arms and tappet-rollers detachably mounted on said bolt-spindles, substantially as described.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in the presence of two witnesses.

JOSEPH C. TOM.
HIRAM F. WALKER.

Witnesses:
G. J. GRAY,
J. G. GRAY.