

No. 731,010.

PATENTED JUNE 16, 1903.

A. ZILLER & H. BOUCHARD.

HAY PRESS.

APPLICATION FILED JAN. 2, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig. 1.

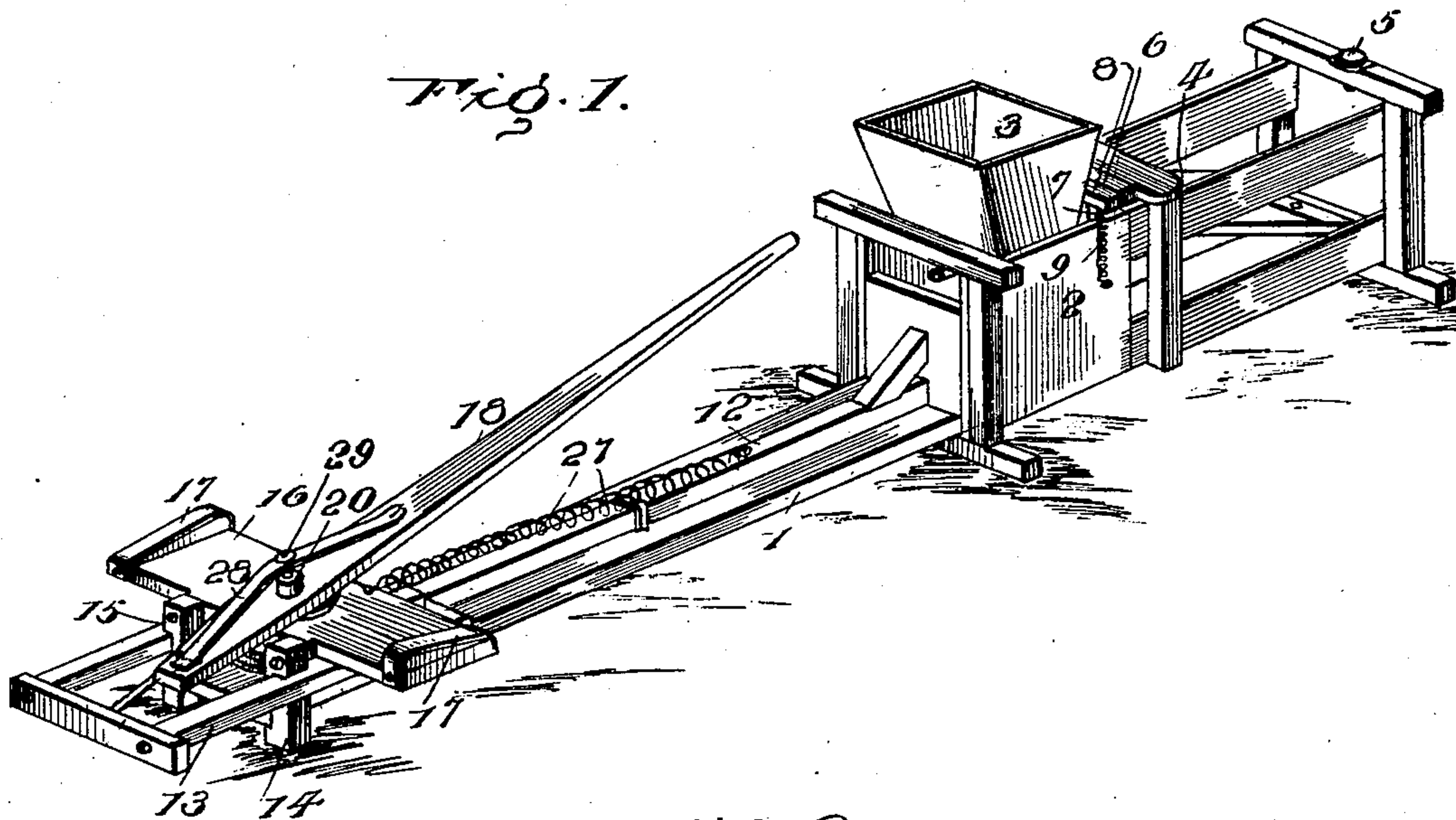
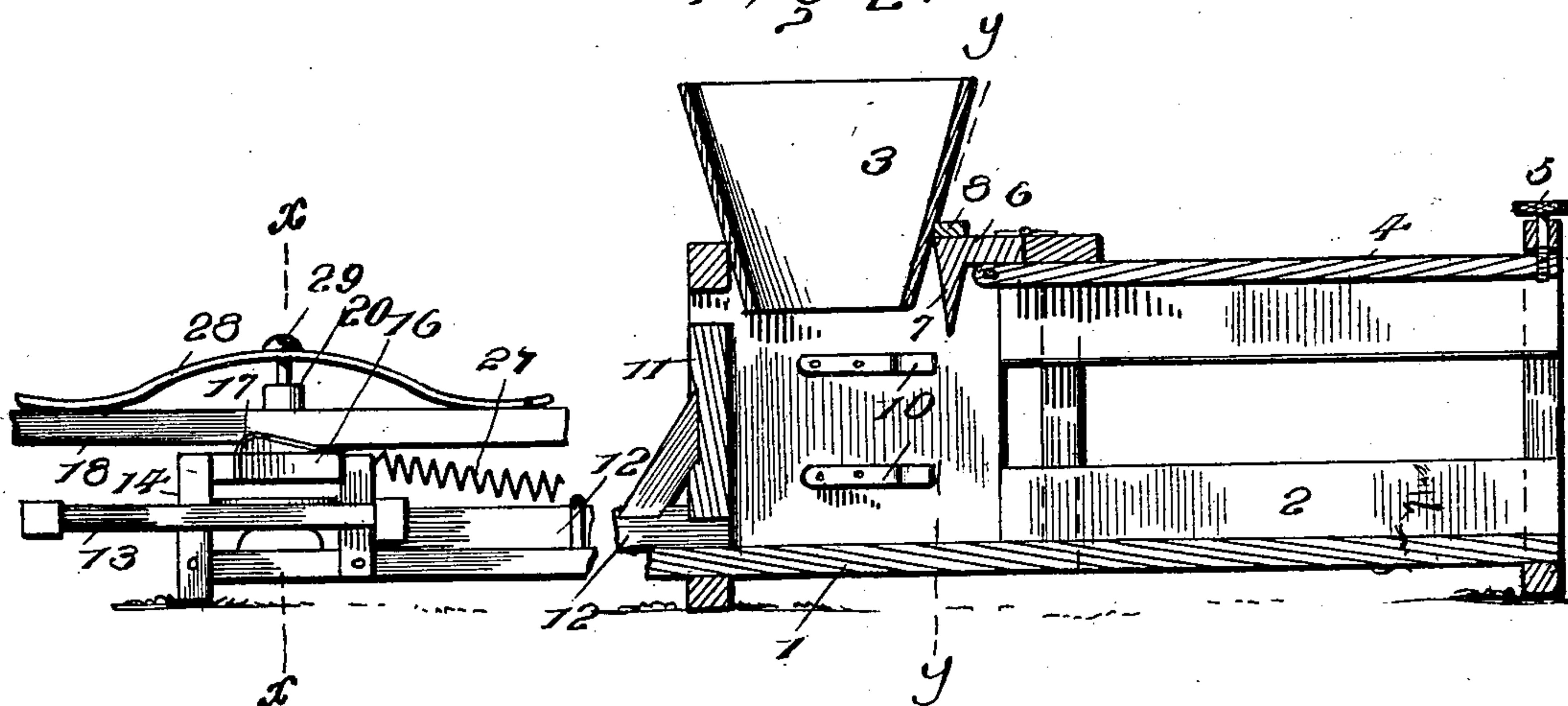


Fig. 2.



Inventors

A. Ziller.

H. Bouchard.

Witnesses

Mr. Minnie  
George Hatt

By

R. L. R. Hacey

Attorneys

No. 731,010.

PATENTED JUNE 16, 1903.

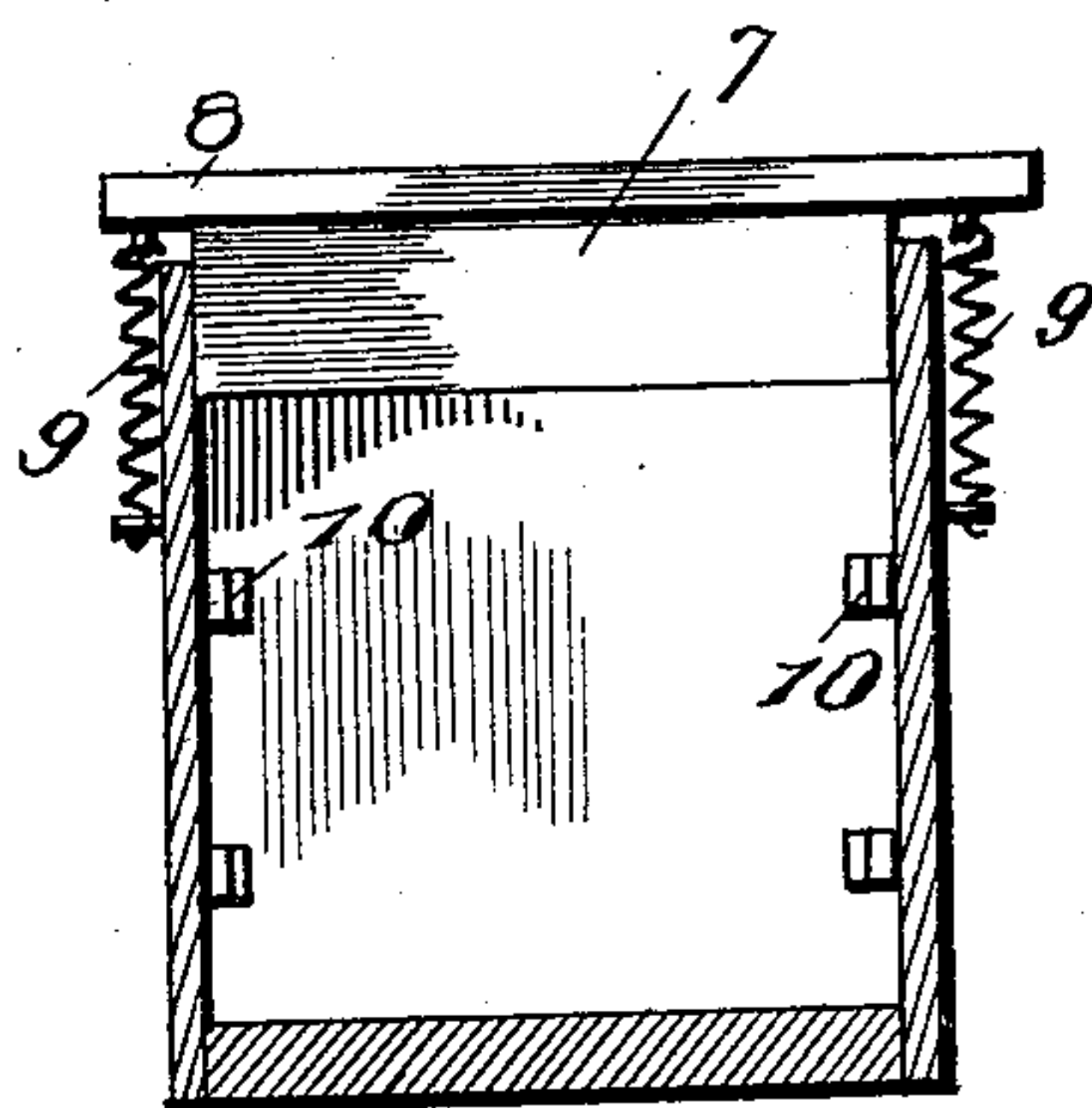
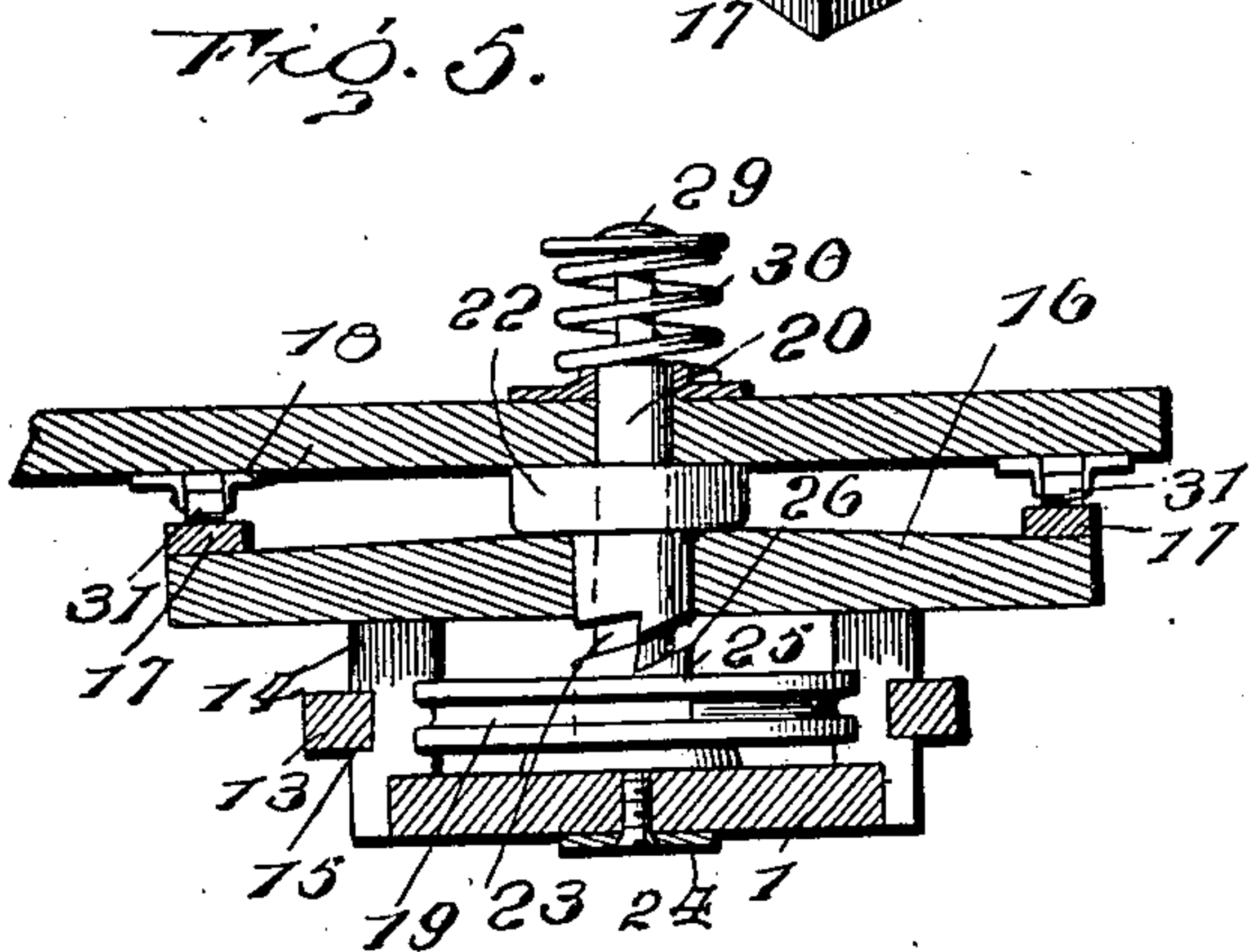
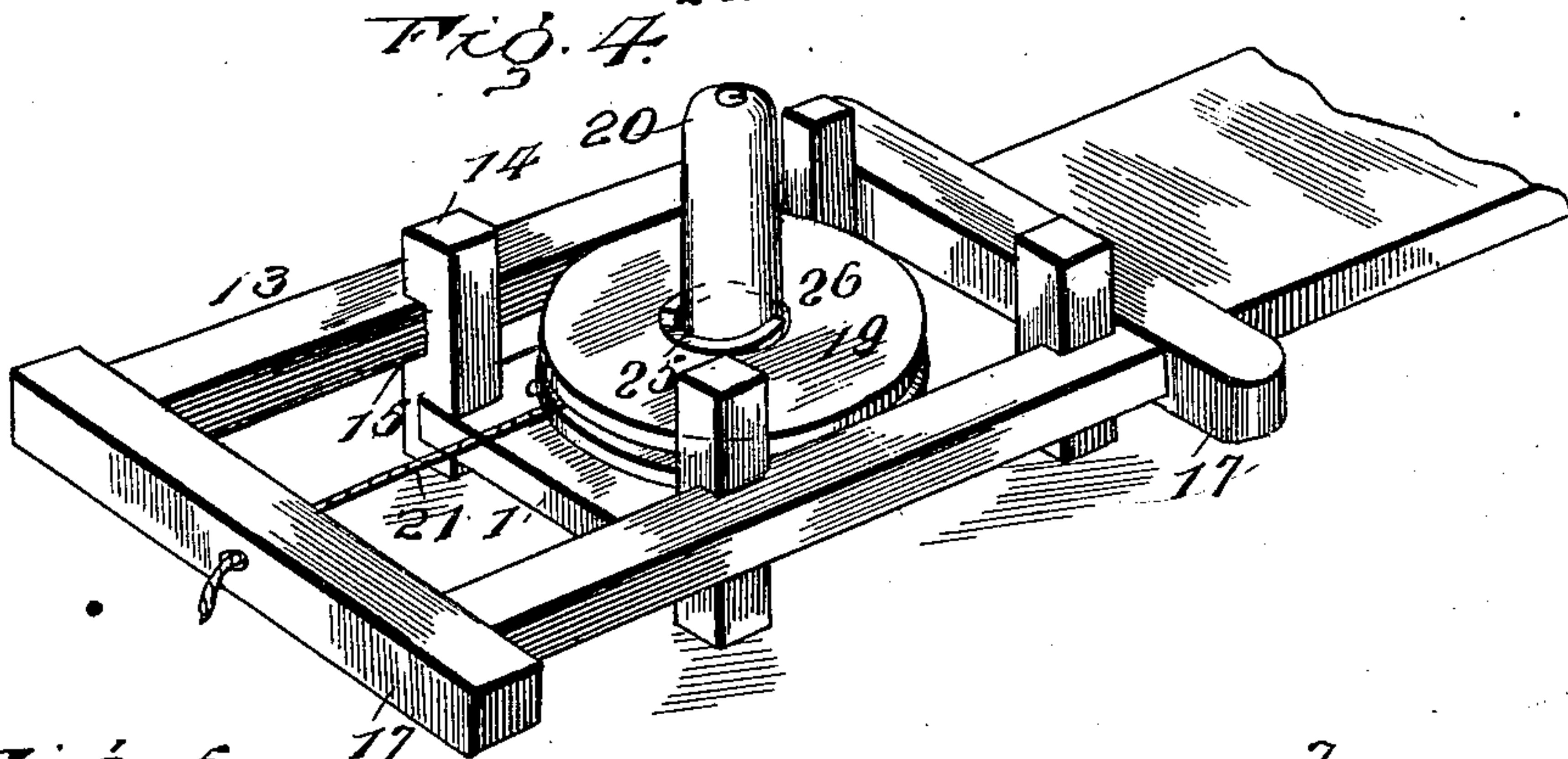
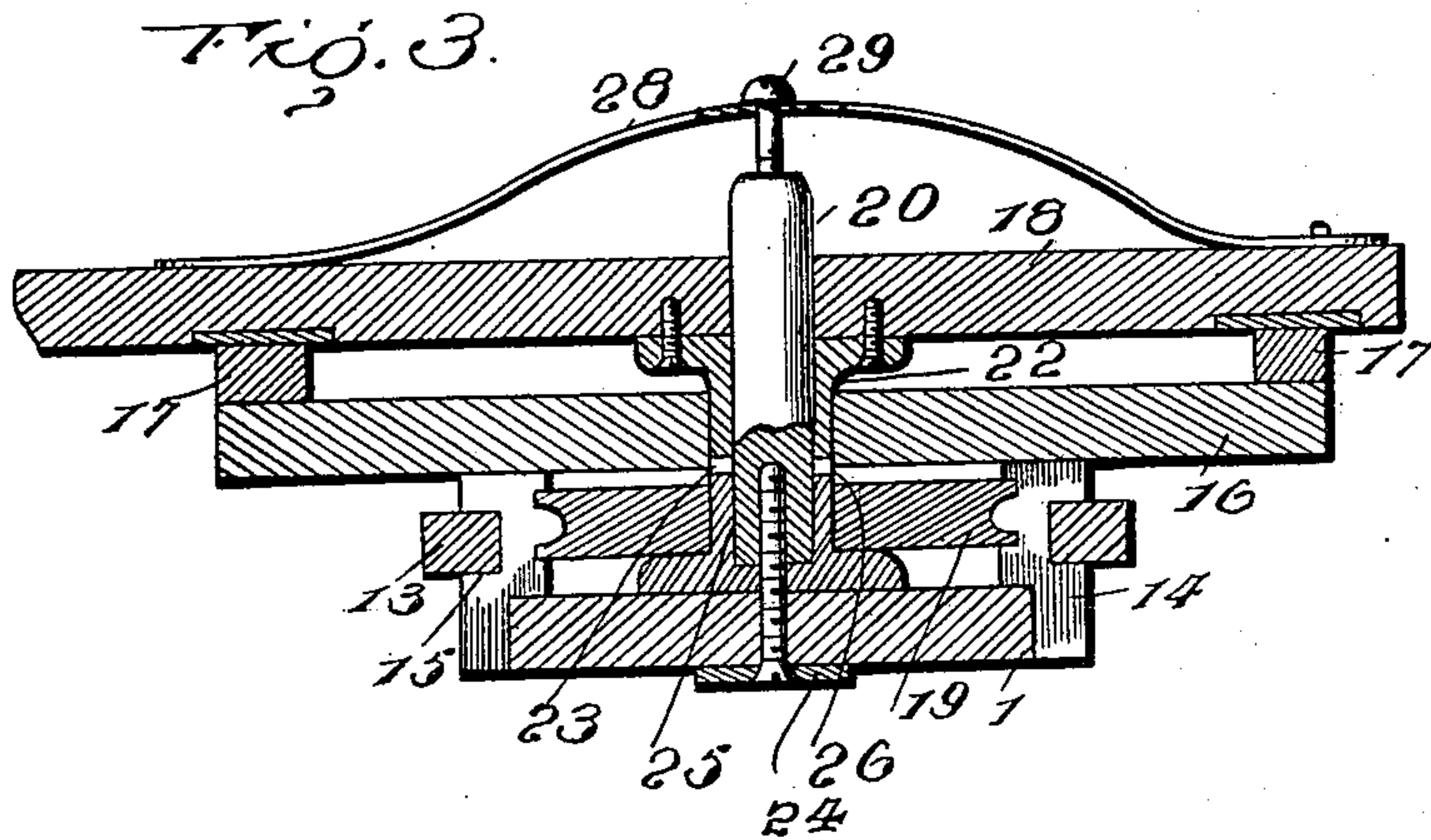
A. ZILLER & H. BOUCHARD.

HAY PRESS.

APPLICATION FILED JAN. 2, 1903.

2 SHEETS—SHEET 2.

NO MODEL.



Inventors

Witnesses

*Mr. Irvine*  
*George Hatt*

By

*A. Ziller.*

*H. Bouchard.*

*R. B. Racey & Co.,* Attorneys.



# UNITED STATES PATENT OFFICE.

AUGUST ZILLER AND HENRY BOUCHARD, OF AUSTIN, TEXAS.

## HAY-PRESS.

SPECIFICATION forming part of Letters Patent No. 731,010, dated June 16, 1903.

Application filed January 2, 1903. Serial No. 137,534. (No model.)

*To all whom it may concern:*

Be it known that we, AUGUST ZILLER and HENRY BOUCHARD, citizens of the United States, residing at Austin, in the county of Travis and State of Texas, have invented certain new and useful Improvements in Hay-Presses, of which the following is a specification.

This invention has relation to presses having a rebounding and intermittently-operated plunger, and aims to provide a novel and positive actuating means for utilizing the power applied to the sweep in any accustomed manner.

For a full description of the invention and the merits thereof and also to acquire a knowledge of the details of construction of the means for effecting the result reference is to be had to the following description and drawings hereto attached.

While the essential and characteristic features of the invention are susceptible of modification, still the preferred embodiment of the invention is illustrated in the accompanying drawings, in which—

Figure 1 is a perspective view of a press embodying the invention. Fig. 2 is a side view, a portion of the baling-chamber and the hopper being in section. Fig. 3 is a section on the line X X of Fig. 2, showing the parts on a larger scale and the sweep disconnected from the driver. Fig. 4 is a perspective view of the slide-frame, driver, and mountings therefor. Fig. 5 is a detail view showing a modification. Fig. 6 is a transverse section of the baling-chamber about on the line Y Y of Fig. 2.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawings by the same reference characters.

The component parts of the press are preferably mounted upon opposite ends of a bed or base 1, consisting of a board or plate and comprising a baling-chamber and operating means for the plunger. The baling-chamber is indicated at 2 and may be of any construction and consists of inclosing walls and a series of strengthening and bracing frames, the latter comprising lower transverse sills, upper cross-bars, and uprights connecting the sills

and cross-bars and bracing the side walls of the chamber. The hopper 3 is located at the inner upper end of the baling-chamber and receives and directs the charges to the baling-chamber in the operation of the press. The upper side or wall 4 of the baling-chamber is pivoted at its inner end and is adjustable at its outer end by means of a set-screw 5, threaded into the cross-bar of the rear bracing-frame. A retainer is located immediately in the rear of the hopper and is pivoted or hinged to the cross-bar of the intermediate bracing-frame and consists of a plate 6 and a downwardly-extended lip 7, beveled upon the side adjacent to the hopper, so as to admit of the charge passing readily by the lip in the operation of the press. A cleat 8 is applied to the upper side of the plate 6, adjacent to its free end, and projects beyond the sides of the baling-chamber and is connected at its ends to the latter by springs 9, which are of a strength to force the lip 7 in the rear of the charge after the same has cleared the lip in the forward movement of the plunger. Other retainers 10 are applied to the sides of the baling-chamber and consist of flat springs secured at one end to the side walls of the baling-chamber and having the opposite end flexed so as to extend into the baling-chamber and across the path of the charge, so as to cooperate with the upper retainer or lip 7 and prevent the charge from following the plunger upon its return stroke.

The plunger or follower 11 is adapted to reciprocate below the hopper 3, and its stem 12 is provided at its outer end with a rectangular slide-frame 13, held in place and directed in its movements by four posts 14, projected upwardly from the bed or plate 1, said posts having notches 15 in their outer sides to receive the longitudinal bars of the slide-frame 13, so as to retain the same in position against casual displacement. A plate, strip, or board 16 extends crosswise of the bed 1 and slide-frame 13 and is secured to the upper ends of the posts 14 and is provided at its ends with cams 17, facing in opposite directions and adapted to unship the sweep 18 from the driver 19 at proper and determinate points in the revolution of said sweep.



The operating means comprise a shaft 20, driver 19, sweep 18, clutch between said sweep and driver, and a flexible connection 21, the latter being attached at one end to the driver 5 19 and at its opposite end to the outer cross-bar of the slide-frame 13. The sweep is provided with a tube 22, pendent therefrom and journaled in the plate or part 16 and provided at its lower end with a half-clutch 23.

10 The tubular bearing 22 is secured to the sweep in any substantial way and is provided at its upper end with an outer flange apertured to receive the fastenings employed for attachment thereof to the sweep. The shaft 20 is 15 journaled at its lower end in the bed 1 and its upper end in the tubular bearing 22 and is secured to the driver 19 so as to rotate therewith. A plate 24 is secured in any substantial manner to the lower end of the shaft 20 and underlaps the bed 1 and serves to prevent vertical displacement of said shaft, while at the same time admitting of free rotation thereof. The driver 19 is preferably of wood, although this is not essential, and its peripheral portion is grooved to insure seating of the flexible connection 21 to effect rectilinear movement of the plunger 11. A tube 25 is 25 secured to the driver, and its upper end is provided with a half-clutch 26 for coöperation with the half-clutch 23 in the manner presently to be explained. The lower end of the tube 25 is flanged to space the driver upon the bed and also to receive the fastening means connecting the tube 25 with the 30 driver 19. The sweep 18 may be operated by hand, horse, or other power and is mounted upon the shaft 20 and within the plate 16, so as to receive a combined rotary and up-and-down movement, the latter being essential to admit of unshipping of the sweep from the driver in order to permit a rebound of the plunger after compressing the charge and to admit of a new charge being supplied to the baling-chamber. The rebound of the plunger is effected by means of a spring 27, which 45 is connected at one end to the stem 12 and at its opposite end to the plate 16. The spring 27, which is of the coil type, is expanded as the plunger is driven forward, and the instant the driver is released from the impelling means the spring contracts and returns the plunger to a normal position. The sweep is forced downward to hold the half-clutches 23 and 26 in engagement by means of a spring 50 interposed between it and the shaft 20. In the preferable construction the spring is of bow form, as shown at 28, and is secured at a central point to the shaft 20 by means of a headed fastening 29, the end portions of the 60 spring exerting a downward pressure upon the sweep at opposite sides of the shaft, whereby the sweep is held level and in clutched engagement with the driver in the manner stated. In the construction shown in Fig. 5 the spring 30 is of the coil type and surrounds

the upper portion of the shaft 20 and is confined between a washer and the sweep.

In the operation of the press the sweep 18 is rotated and effects a corresponding rotation of the driver 19 through the instrumentality of the interposed clutch, and as a result of this operation the flexible connection 21 is wound upon the driver and the slide-frame 13 is moved inward and forces the plunger into the baling-chamber, whereby a 75 compression of the charge supplied to said baling-chamber through the hopper is effected. When the sweep aligns with the plate 16, it receives an upward movement by riding upon the cams 17, thereby unshipping the 80 half-clutches and disconnecting the sweep from the driver, whereupon the spring 27 returns the plunger to a normal position in the manner stated. As soon as the sweep clears the cams in its further movement it is moved 85 downward by either the spring 28 or spring 30 or like means, thereby permitting the sweep to again become clutched to the driver, when the operation just described will be repeated. In the construction shown the sweep 90 is disconnected from the driver twice during each complete revolution. The cams and parts of the sweep coming in contact with said cams are protected, so as to resist wear, or, as shown in Fig. 5, a roller 31 may be applied to the under side of the sweep to come 95 in contact with and ride upon the cams, thereby reducing the friction and resistance to a minimum amount.

Having thus described the invention, what 100 is claimed as new is—

1. In a press, and in combination with the baling-chamber, and plunger, operating means for said plunger comprising a shaft journaled at its lower end, a driver journaled 105 to said shaft, a cam-plate, a sweep journaled in said cam-plate and forming a bearing for the upper end of the aforementioned shaft, a clutch between the sweep and driver, and connecting means between the plunger and 110 driver, substantially as set forth.

2. In a press, and in combination with the baling-chamber and plunger, a shaft, a driver journaled to the shaft, a cam-plate, a sweep journaled to the cam-plate and forming a 115 bearing for an end portion of the aforementioned shaft, a clutch between the driver and sweep, and a spring confined between the projecting end of the shaft and sweep to normally hold the parts of the aforesaid clutch 120 in engagement, substantially as described.

3. In a press, and in combination with the baling-chamber and plunger, a slide-frame connected to the stem of the plunger, posts notched in their outer sides to receive the longitudinal bars of the slide-frame to hold the 125 latter in place and direct it in its reciprocating movements, a cam-plate secured to said posts, a sweep journaled to the cam-plate, a shaft journaled at one end to the sweep and 130



at its opposite end to the bed of the press, a  
driver journaled to the shaft, a clutch hav-  
ing its component parts applied, respectively,  
to the driver and sweep, a spring for effect-  
5 ing a rebound of the plunger, and a flexible  
connection between said plunger and driver,  
substantially as specified.

In testimony whereof we affix our signa-  
tures in presence of two witnesses.

AUGUST ZILLER. [L. S.]

HENRY BOUCHARD. [L. S.]

Witnesses:

HENRY G. KING,

F. M. MADDOX.