

No. 627,368.

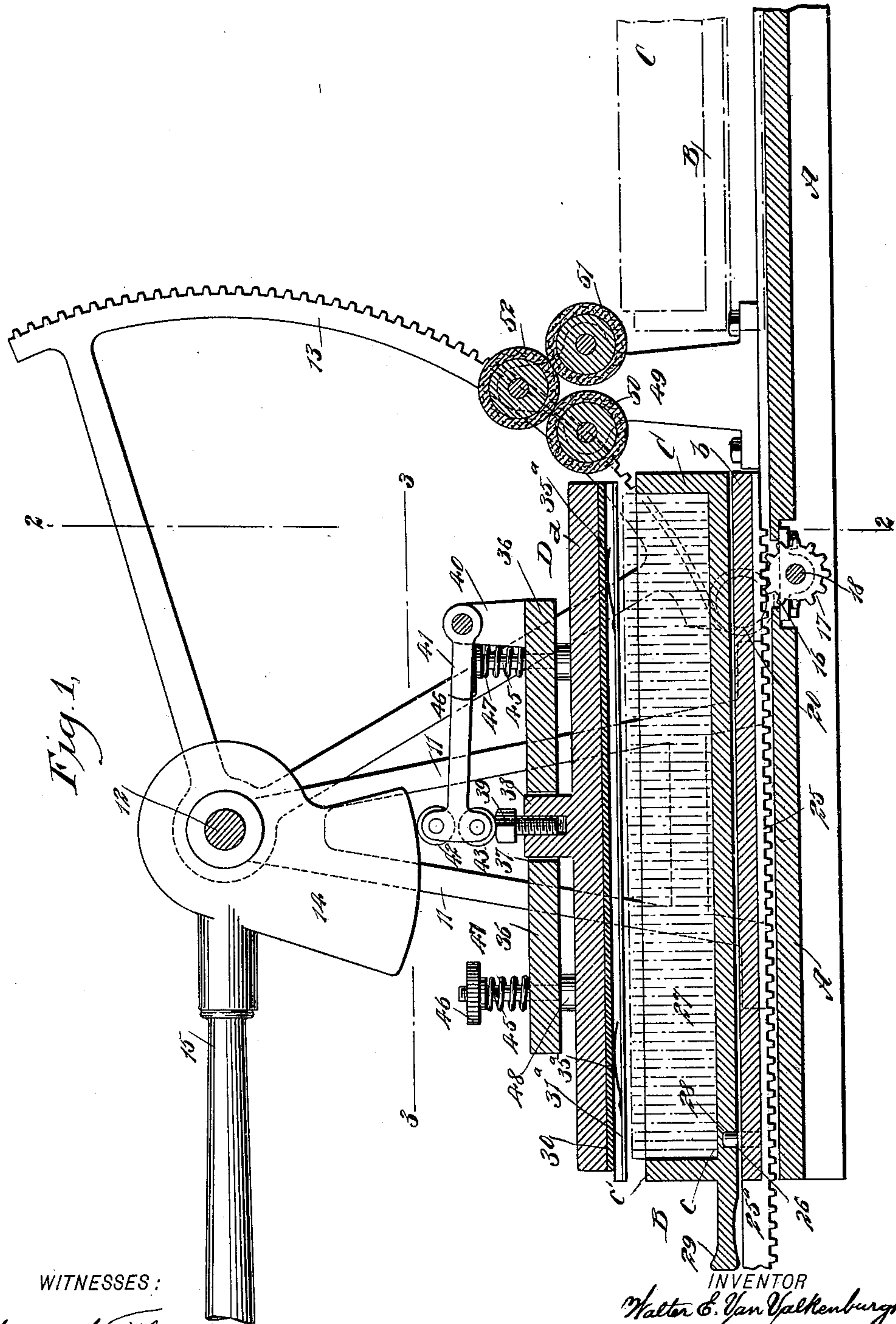
Patented June 20, 1899.

W. E. VAN VALKENBURGH.
HAND PRINTING PRESS.

(Application filed Feb. 18, 1899.)

(No Model.)

3 Sheets—Sheet 1.



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Fig. 2.

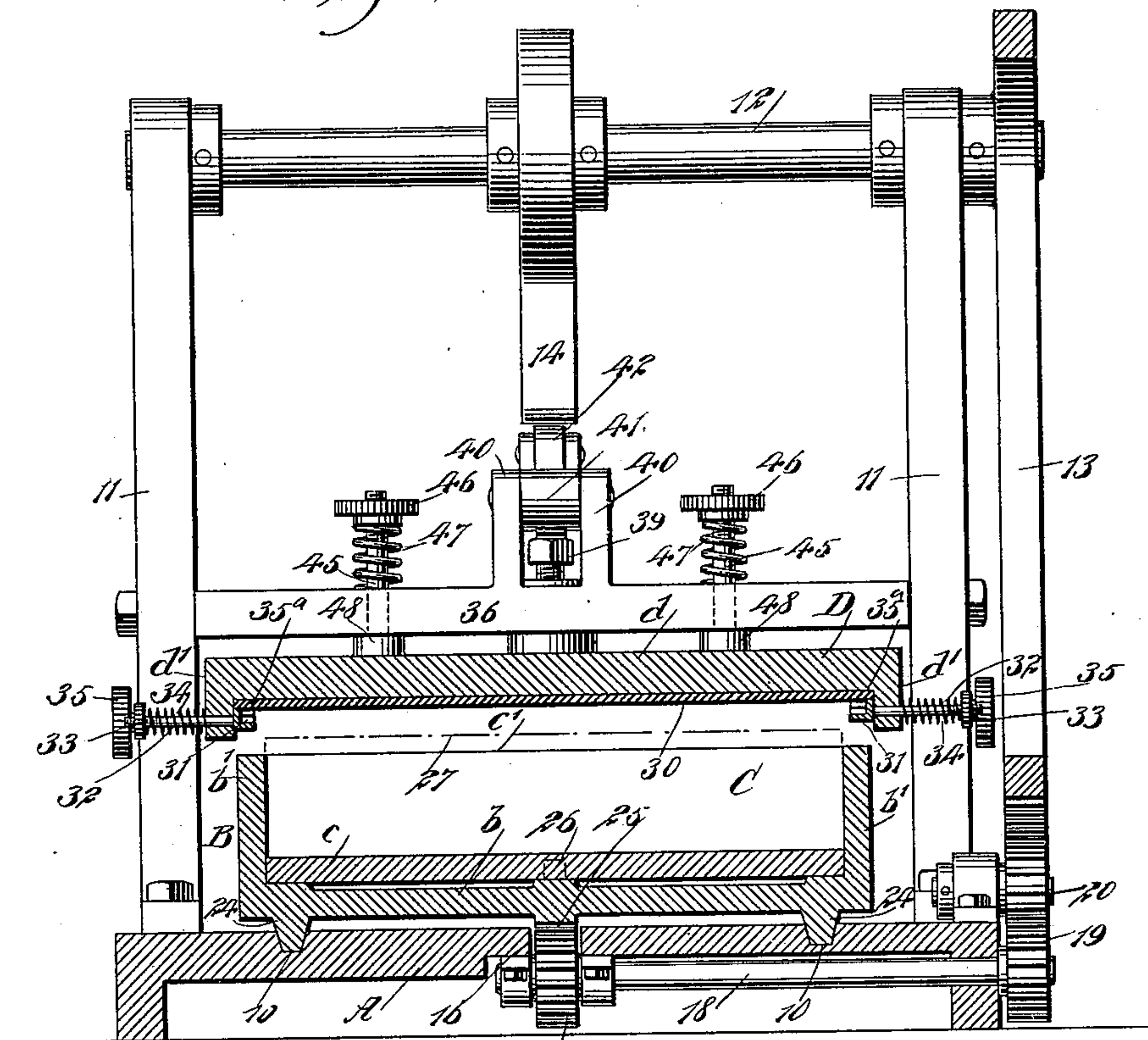
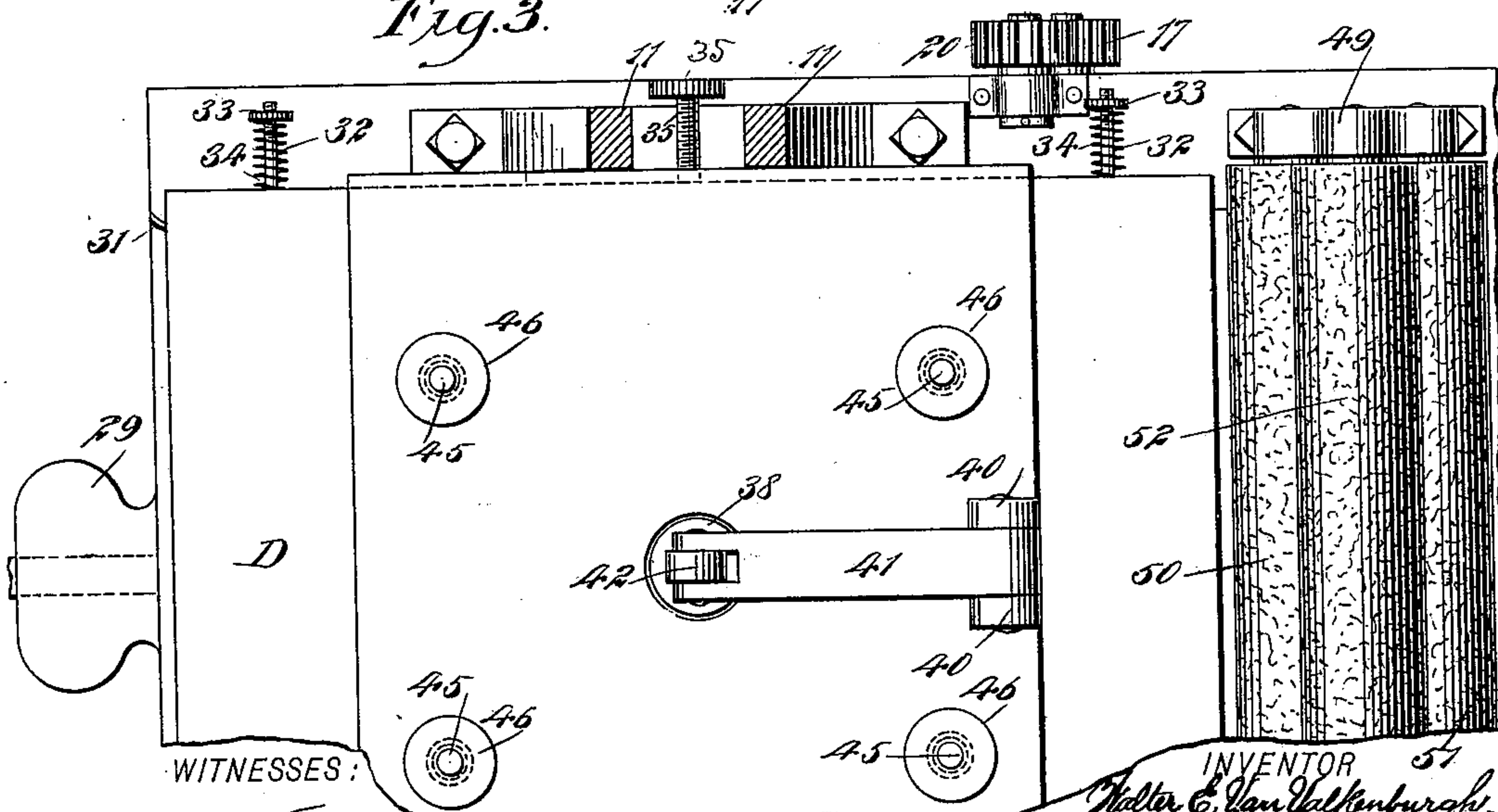


Fig. 3.



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Fig. 4.

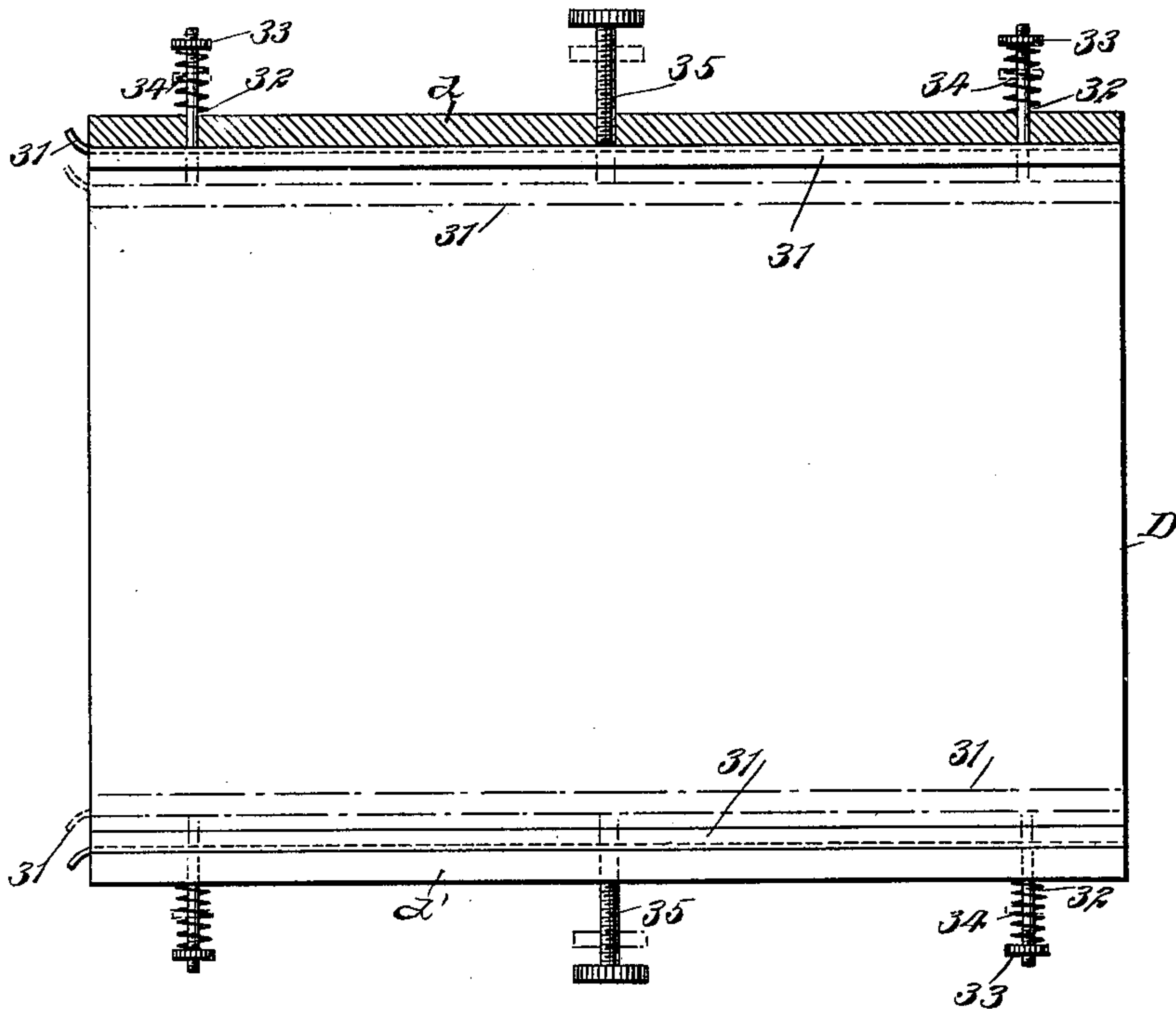
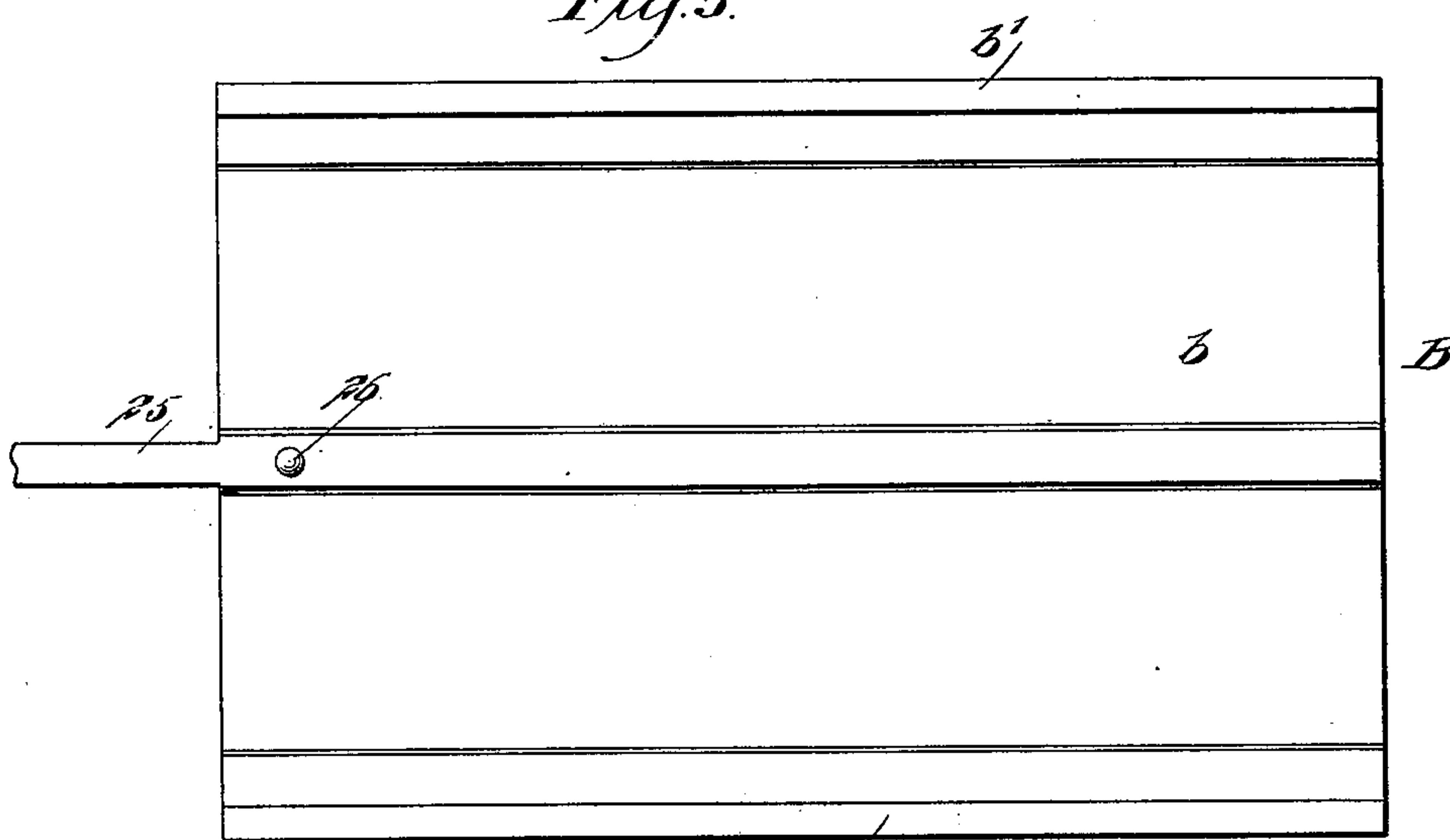


Fig. 5.



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UNITED STATES PATENT OFFICE.

WALTER E. VAN VALKENBURGH, OF NEW YORK, N. Y.

HAND PRINTING-PRESS.

SPECIFICATION forming part of Letters Patent No. 627,368, dated June 20, 1899.

Application filed February 18, 1899. Serial No. 706,010. (No model.)

To all whom it may concern:

Be it known that I, WALTER E. VAN VALKENBURGH, of the city of New York, borough of Manhattan, in the county and State of New York, have invented a new and Improved Hand Printing-Press, of which the following is a full, clear, and exact description.

The object of my invention is to provide a printing-press intended to be operated by hand and which is especially adapted for printing bills of fare, circulars, display-cards, and other advertising and explanatory matter needing frequent revision.

A further object of the invention is to construct such a press in a simple, durable, and economic manner and to provide an inking device automatic in its action and which will equally distribute the ink over a type-bed.

The invention consists in the novel construction and combination of the several parts, as will be hereinafter fully set forth, and pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal vertical section through the improved device. Fig. 2 is a transverse section taken on the line 2 2 of Fig. 1. Fig. 3 is a horizontal section taken practically on the line 3 3 of Fig. 1, the driving-segment having been omitted. Fig. 4 is a bottom plan view of the follower or platen, one side thereof being in section; and Fig. 5 is a plan view of the carriage.

A represents a base, which is provided in its upper face with longitudinal grooves 10, the grooves being located at each side of the center of the base. Standards 11 are attached to the side portions of the base, about centrally between its ends, and a shaft 12 is journaled in the upper ends of said standards. A driving-segment 13 is secured to an outer end of the shaft 12, the periphery of the segment having teeth produced thereon, and at about the central portion of the shaft 12 a cam 14 is secured, the bottom edge whereof is more or less convexed. In operative position the cam 14 extends downward in direction of the base A. The cam being secured upon the shaft, said cam, shaft, and driving-segment are all brought into action through the me-

dium of a handle 15, that is preferably connected with the cam, as shown in Fig. 1.

An opening 16 is made in the central portion of the base, into which opening a pinion 17 extends, the pinion being secured upon a shaft 18, and said shaft is mounted in suitable bearings at the lower portion of the base A, as is shown particularly in Fig. 2. The shaft 18 extends beyond one side of the base, and at its outer end a pinion 19 is secured, which pinion meshes with a second pinion 20, secured upon a suitable shaft mounted upon bearings at the upper face of the base, and the pinion 20 is adapted to mesh with the teeth of the driving-segment 13, as is also shown in Fig. 2.

A carriage B is adapted to travel upon the base A. This carriage consists of a bottom *b* and upwardly-extending sides *b'*. The bottom of the carriage is provided near each side with a longitudinal tongue 24, and the tongues 24 are adapted to travel in the grooves 10 in the base, as shown in Fig. 2. A longitudinal series of rack-teeth 25 is formed upon the under face of the bottom of the carriage at its center, the rack-teeth being adapted to mesh with the teeth of the pinion 17 at the inner end of the shaft 18. An extension 25^a is projected beyond the front end of the carriage, and the under face of this extension is provided also with rack-teeth, so that when the carriage has been carried rearward to admit of the type being inked the rack will not leave the pinion 17. The carriage B is also provided with a pin 26 about centrally between its sides near its forward end, as shown in Figs. 2 and 5. The carriage is adapted to receive a form C, in which the type 27 is set up. This form consists of a bottom *c* and upwardly-extending end flanges *c'*. The form is also provided in its bottom with a recess 28, adapted to receive the pin 26 on the carriage when the form has been placed in position in said carriage, as shown in Fig. 1. In this manner the form is simply yet securely locked to the carriage. The form C is preferably provided at its forward end with a handle 29 in order that said form may be readily manipulated.

In connection with the carriage and its form a platen or follower D is employed. This platen or follower is located above the

bed of type when the form is placed upon the carriage, and consists of a body-plate *d* and downwardly-extending side flanges *d'*. An elastic cushion 30 is secured upon the bottom face of the body *d* of said platen, and an angle-bar 31 is located adjacent to or in engagement with the inner faces of the flanges *d'* of the platen. These angle-bars, as shown in Figs. 2 and 4, are attached to rods 32, that extend loosely outward through the flanges, a rod being located near an end of each flange. Each rod is provided with a head 33, and a spring 34 is coiled around each rod, engaging with the outer face of the platen and with the head of the rod carrying the spring. The springs normally hold the angle-plates 31 against the inner faces of the flanges of the platen; but the said angle-plates may be carried inward a certain distance by manipulating adjusting-screws 35, that are passed through the central portions of the flanges of the platen, having swivel engagement with the angle-plates 31. The angle-plates are adapted to receive the edges of the cardboard or paper upon which the impression is to be made. A table 36 is located above the platen, the table being secured to the uprights 11, and an opening 37 is made in the center of the table, said opening being adapted to receive an upward projection 38 from the central portion of the platen. In this projection or stud 38 a set-screw 39 is located. Near the rear end of the table 36, about centrally between the side edges thereof, two standards 40 are located, and one end of an arm 41 is pivoted between the standards. The other end of the arm 41 is free to move and is provided with two rollers 42 and 43, located one above the other. The lower roller 43 is made to rest upon the upper end of the set-screw 39, and when the impression is to be made the upper roller 42 engages with the convexed surface of the cam 14. The extent to which the platen is carried downward is governed by the adjustment of the screw 39. It may be here remarked that springs 35^a are located within the angle-bars 31, engaging with the under face of the platen for the purpose of holding the paper or cardboard firmly in engagement with the cushion-surface 30 of the platen, as illustrated particularly in Fig. 1. The platen is movably supported from the table 36 by means of pins 45, attached to the upper surface of the platen, one near each of its corners. These pins pass up through suitable openings in the table 36 and are provided with screw-heads 46. Springs 47 are coiled around the pins, engaging with their screw-heads and with the upper face of the table. The pins are made to enter bosses 48, formed upon the upper face of the platen and arranged to engage with the under face of the table 36, limiting the upward movement of the platen.

At the rear of the base standards 49 are erected, between which standards the carriage is adapted to have movement, and in

the upper portion of these standards three rollers 50, 51, and 52 are journaled, two rollers being opposite each other and in parallel lines, while the third roller is above these two and engages with the peripheral surface of each. Ink is supplied in any suitable or approved manner to the upper roller 52 and is equally distributed by said roller 52 to the lower rollers 50 and 51, and said lower rollers 50 and 51 engage with the type as the carriage is carried rearward and forward.

In the operation of the press when the type-bed is beneath the platen and the handle 15 has been carried downward the curved surface of the cam 14 will engage with the upper roller 42 of the arm 41 and will force the lower roller 43 of the said arm against the screw 39, thus carrying the platen downward against the resistance of the springs 47 to produce an impression on the sheet located upon the platen. When the handle 15 is moved upward, the platen is free to ascend, and the teeth at the lower end of the driving-segment 13 will engage with the teeth of the pinion 20, and thus cause the shaft 18 to revolve and the inner pinion 17, carried by said shaft, to act upon the rack 25 and convey the carriage rearward, thus bringing the type beneath the inking-rollers 50 and 51 both at the time the carriage is carried to the rear and as the carriage is brought forward, which is accomplished when the handle 15 is again carried downward. The cam 14 is carried out of engagement with the arm 41 as the handle is moved upward and is not brought into action with said arm until the lower teeth on the driving-segment have left the gear 20, thus providing for the carriage being in a position of rest while an impression is being made. The angle-plates 31, that receive the edges of the card to be printed, extend beyond the forward edge of the platen and are outwardly curved in order that the paper or cardboard may be readily introduced into the slideways formed by said angle-plates.

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

1. In a printing-press, a carriage adapted to have sliding movement, a form adapted to receive type and arranged for locking engagement with the carriage, a platen located above the carriage, and adapted for movement to and from said form, the platen being tension-controlled in an upward direction, a hand-operated gear having rack-and-pinion connection with the carriage, a cam connected with said gear, and a compressing device for the platen, operated by the cam, as described.

2. In a hand printing-press, the combination, with a base, a carriage held to slide upon the base, said carriage being provided with a rack upon its under surface, a pinion engaging with said rack, a support for the pinion, a driving-shaft, a segment carried by said driving-shaft, and having driving connection with said pinion, and a cam connected with

said segment, of a form adapted to receive type, means for locking the form to the carriage, a platen having movement to and from said form, the platen being tension-controlled in an upward direction, a roller-carrying arm adapted to compress the said platen and to be acted upon by said cam, and ink-rollers located in the path of the form as the carriage is moved, as described.

10 3. In a printing-press, a platen provided with a cushion and grooves at the edges of the cushion, said grooves being adapted to receive the edges of the paper or cardboard to be printed, and springs located within said
15 grooves, for the purpose set forth.

4. In a hand printing-press, the combination, with a carriage having a rack upon its under surface, a pinion adapted for engagement with said rack, a hand-operated drive-
20 shaft, a support for said shaft, a toothed segment attached to the drive-shaft, and in driving engagement with said pinion, and a cam located upon said drive-shaft, of a fixed table, a platen having spring-support in said table,
25 said platen being provided with means for holding the edge of the paper or cardboard to be printed, an adjusting-screw carried by said platen, an arm pivoted upon the fixed table, and rollers carried by said arm, one of
30 said rollers being arranged for engagement with the cam and the other roller with the adjusting-screw of the platen, as specified.

5. In a hand printing-press, a carriage, a

platen movable to and from the carriage, a form fitted to the carriage, a hand driving
35 mechanism for said carriage, a cam carried by the hand-controlled mechanism, the cam controlling the movement of the platen in direction of the form, an ink-supply roller located at the rear of the platen, and ink-dis-
40 tributing rollers in engagement with the ink-supply roller, said ink-distributing rollers being adapted to engage with the type as the carriage is moved, as described.

6. In a hand driving mechanism for print-
45 ing-presses, the combination with a bed, a carriage mounted to slide upon the bed and provided with a rack, a driven shaft, pinions carried by the driven shaft, the innermost pinion being adapted for engagement with
50 the rack and the outermost pinion with an intermediate pinion, a drive-shaft adapted to be operated by hand and a toothed segment secured to the drive-shaft, said segment being adapted to engage with the intermediate
55 pinion, of a form, a locking connection between the form and carriage, a platen or follower, an actuating connection between the platen and drive-shaft, guides for the platen and an inking mechanism located in the path
60 of the form as the carriage is moved, substantially as described.

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