

(No Model.)

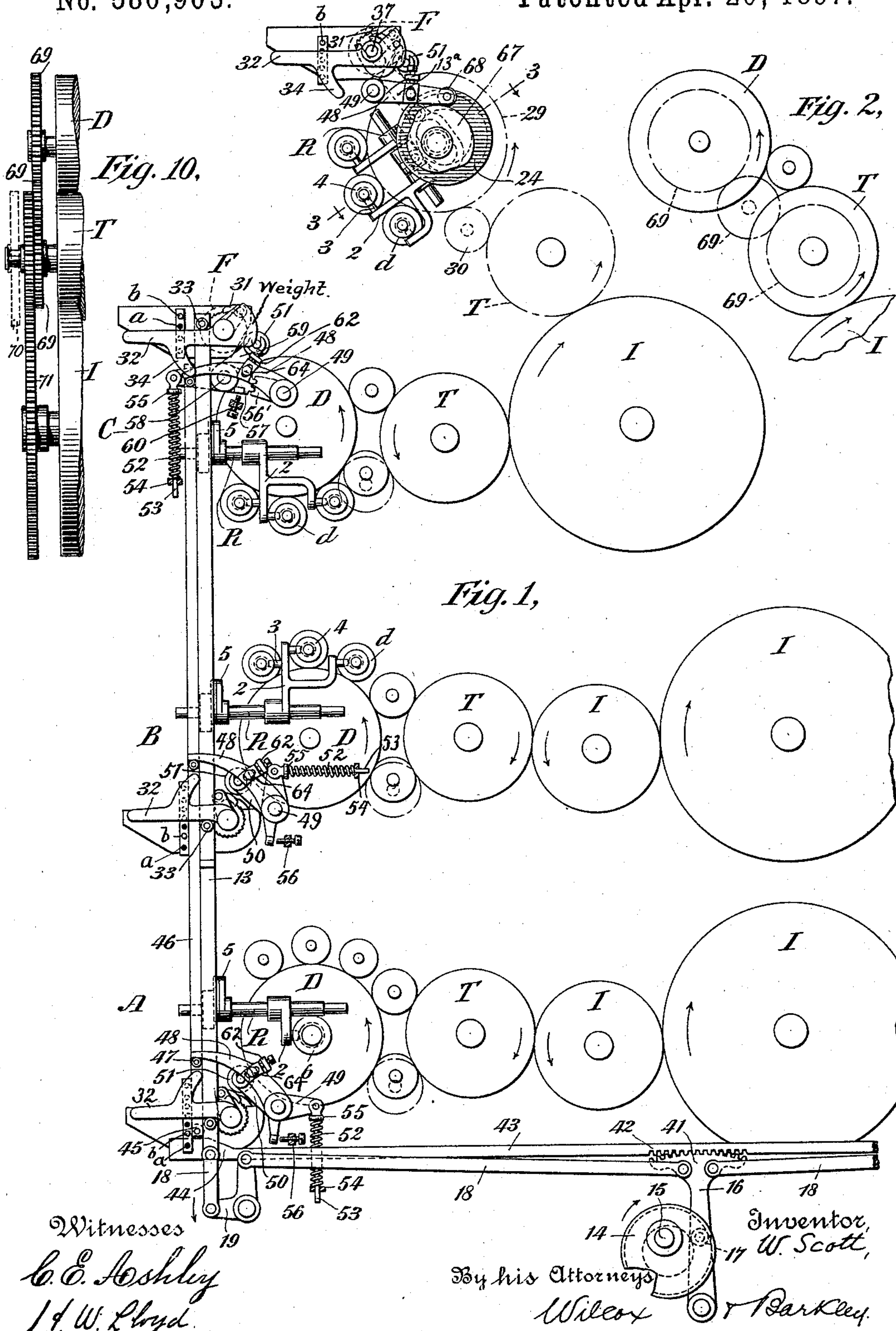
2 Sheets—Sheet 1.

W. SCOTT.

INKING APPARATUS FOR PRINTING MACHINES.

No. 580,903.

Patented Apr. 20, 1897.



Witnesses
C. E. Ashley
J. W. Lloyd

Inventor,
W. Scott,
By his Attorneys
Wilcox & Parkley

(No Model.)

2 Sheets—Sheet 2

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Fig. 3,

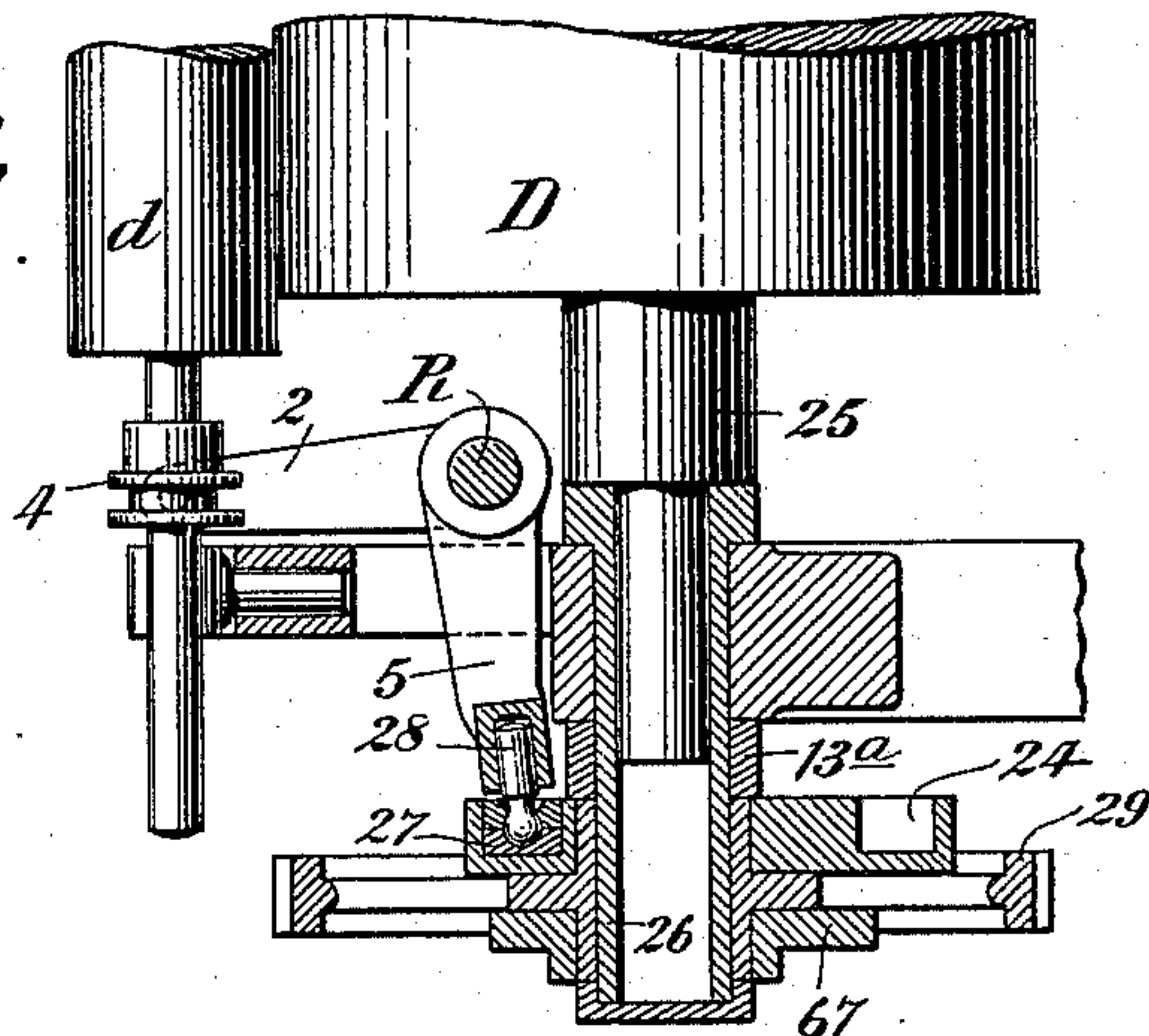


Fig. 4,

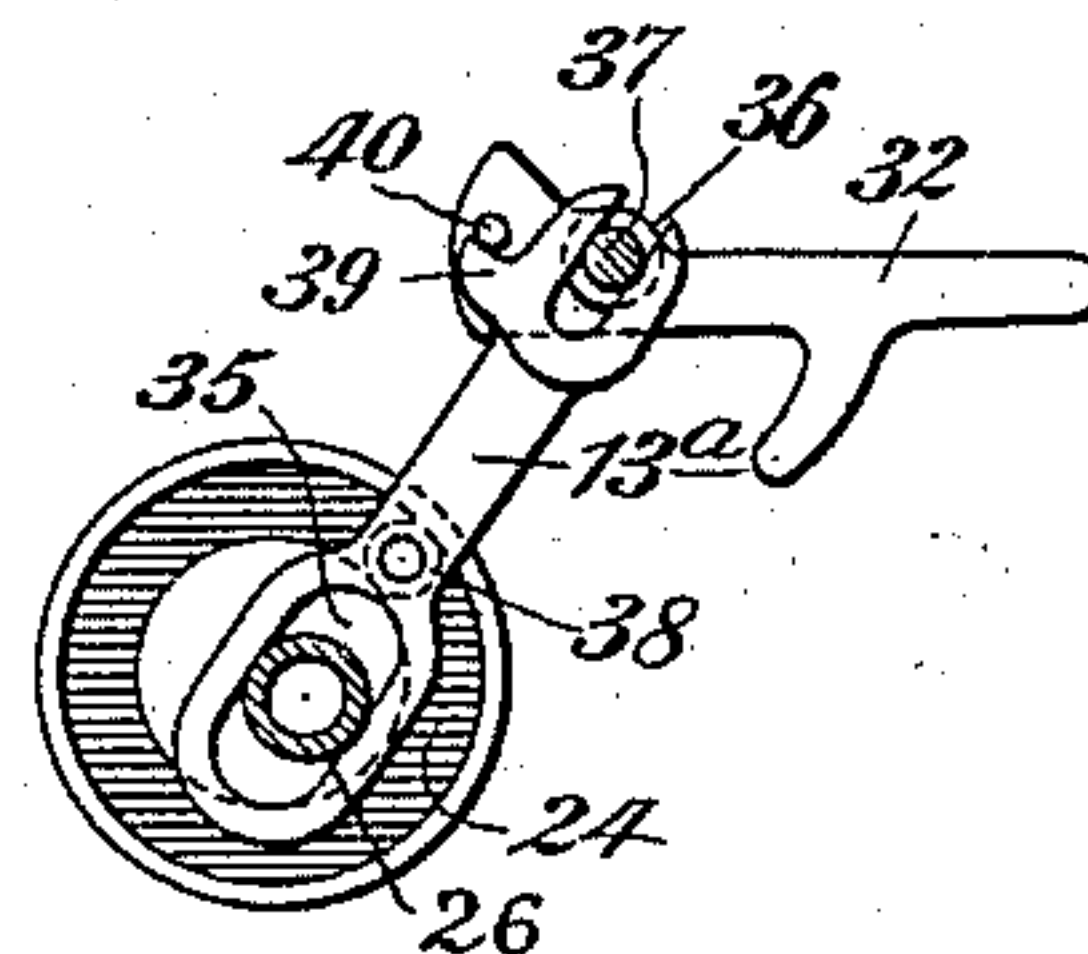


Fig. 5,

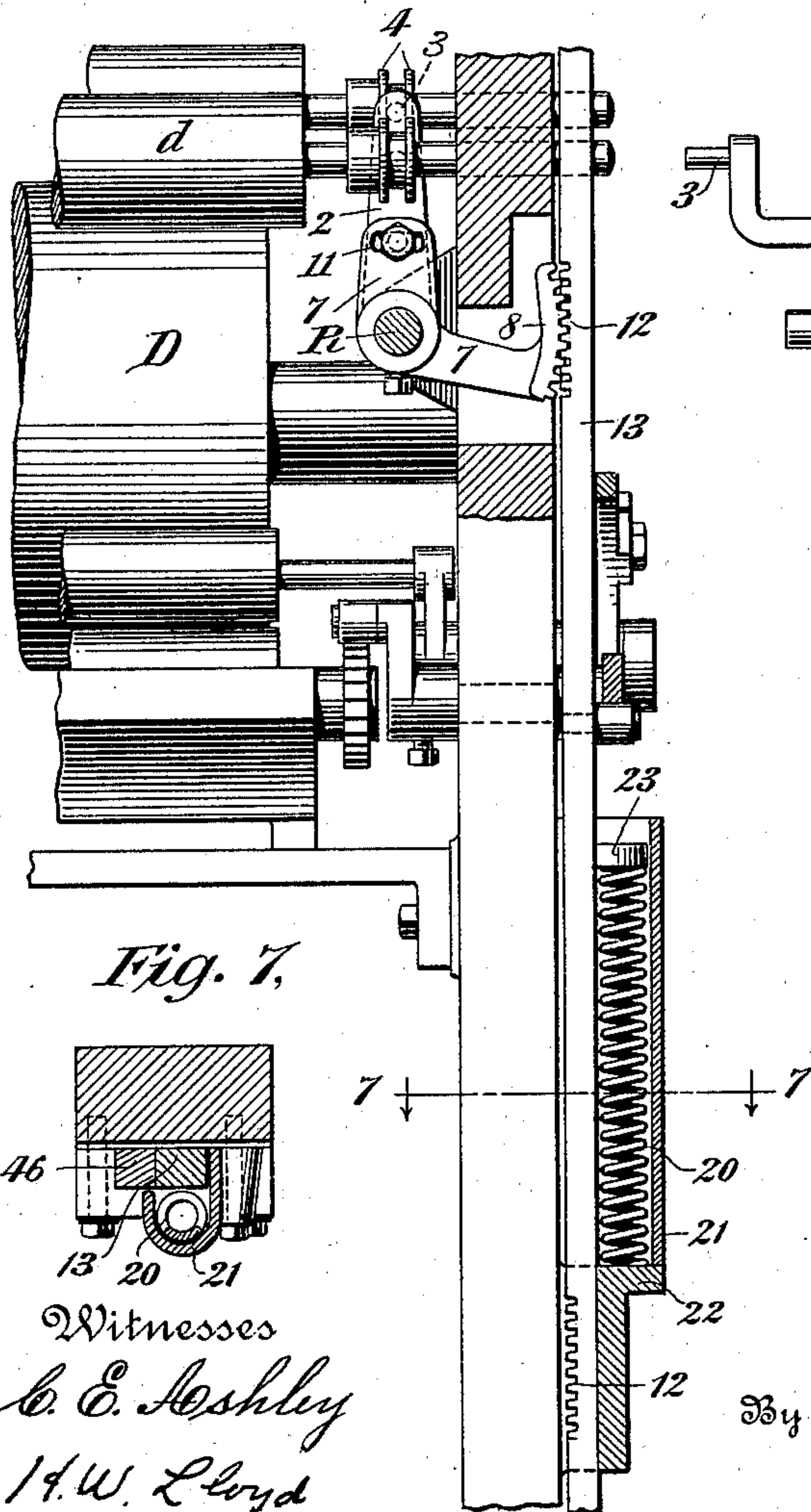


Fig. 6,

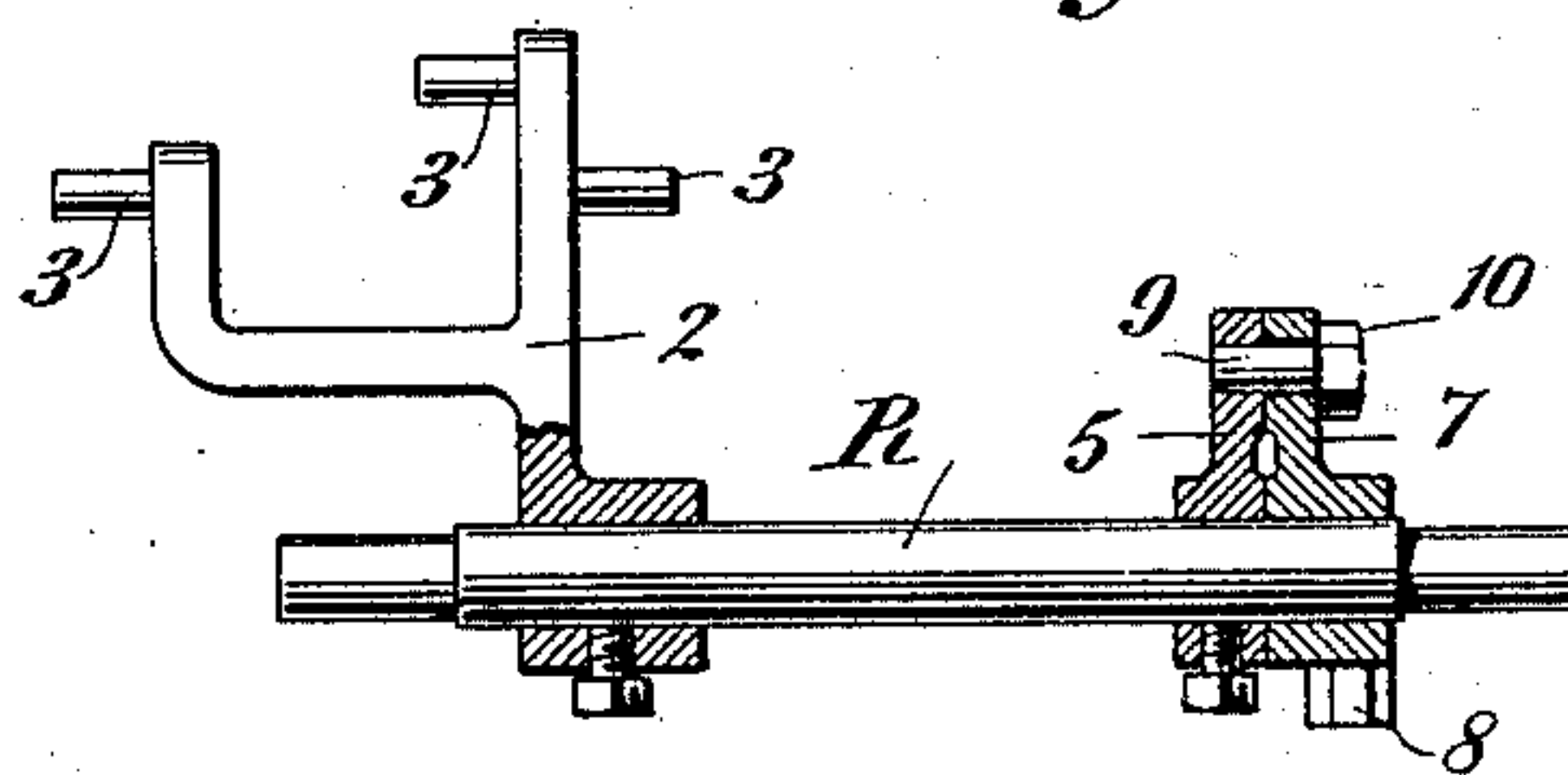


Fig. 8,

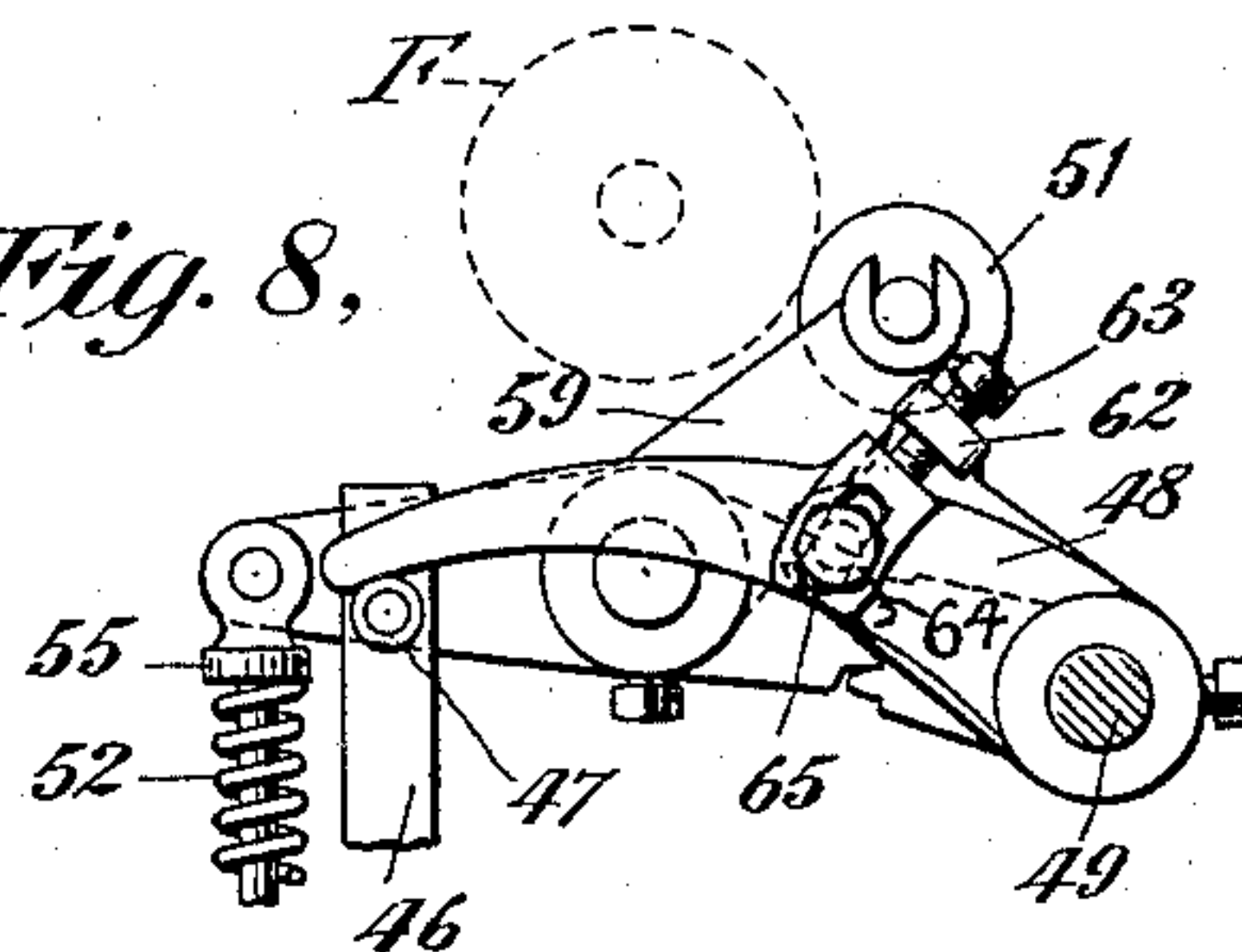
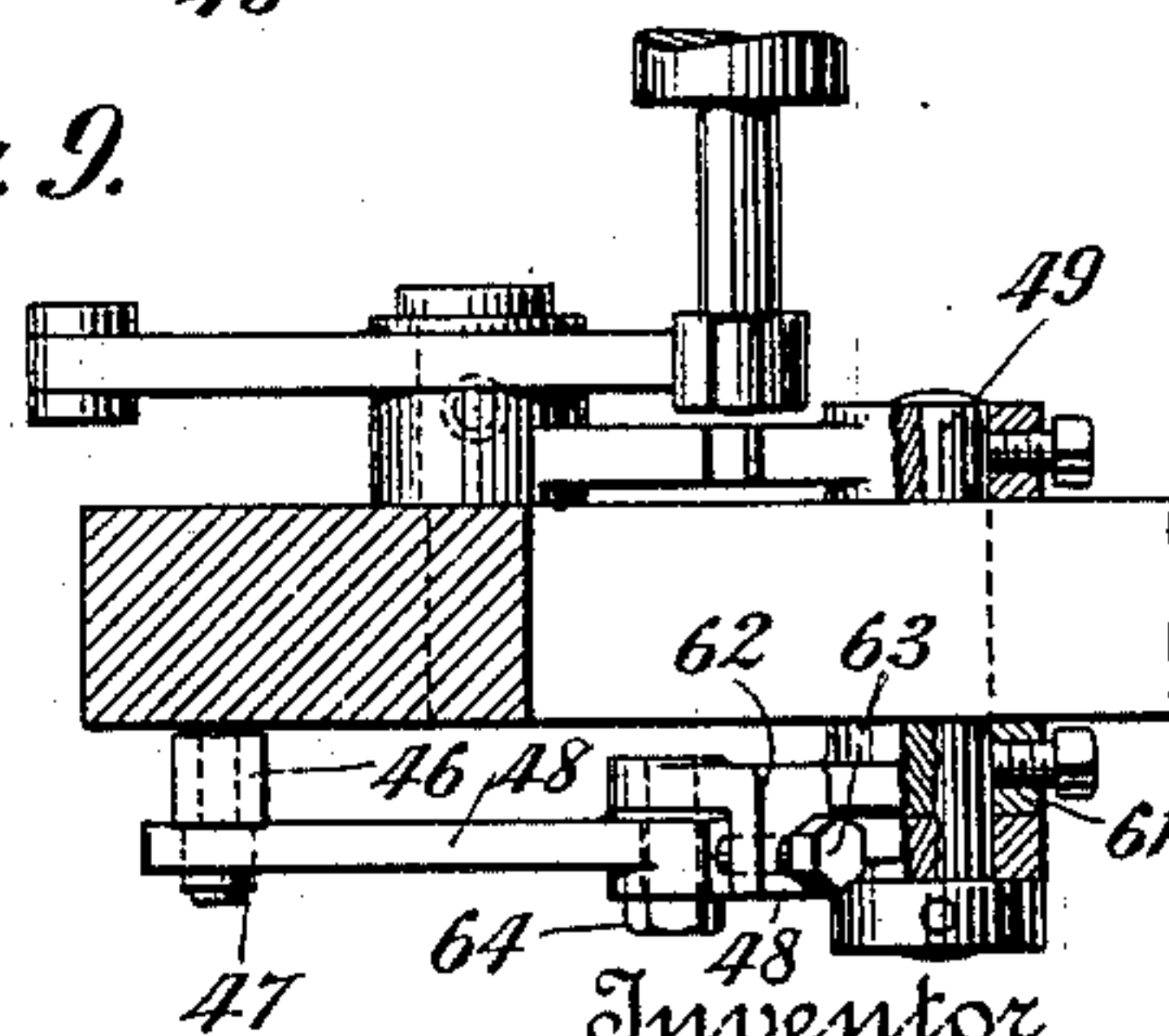


Fig. 9,



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UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF PLAINFIELD, NEW JERSEY.

INKING APPARATUS FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 580,903, dated April 20, 1897.

Application filed October 23, 1893. Serial No. 488,898. (No model.)

To all whom it may concern:

Be it known that I, WALTER SCOTT, a citizen of the United States, and a resident of Plainfield, in the county of Union and State of New Jersey, have invented certain new and useful Improvements in Inking Apparatus for Printing-Machines, of which the following is a specification.

This invention relates to the inking apparatus of printing-machines, and has for its objects the more efficient operation of the same, the throwing of parts thereof out of operation, if desired, and other objects, as will appear from the description hereinafter; and it consists of the combination, with a fountain-roller, of a slide, and connections whereby the slide operates the fountain-roller.

It further consists of the combination, with the reciprocating element of the distributing part of the inking apparatus, of a slide, a rocker, and connections whereby the said reciprocating element is moved, and of other combinations, all hereinafter described.

The invention is more particularly pointed out in the appended claims.

The invention is shown in the accompanying drawings, forming part of this specification, in which—

Figure 1 is a side elevation of one end of a printing-machine, showing the invention applied thereto. Fig. 2 is a detail showing certain gearing omitted from Fig. 1 for greater clearness. Fig. 3 is a view, in the direction of the arrows, on the plane indicated by the line 3 3 in Fig. 1. Fig. 4 is a detail view of the roller-operating mechanism shown in the upper part of Fig. 1. Fig. 5 is an end view, partly in section, from the left of Fig. 1, showing the distributing-cylinder, the distributing-rollers, and means for reciprocating the latter from the slide. Fig. 6 is a detail of the rocker. Fig. 7 is a sectional view of the slides, looking in the direction of the arrows, on the plane indicated by the line 7 7 in Fig. 5. Fig. 8 is a detail enlarged view of the means for operating a ductor-roller, shown to the left of the upper impression-cylinder in Fig. 1. Fig. 9 is a plan view of the same, partly in section. Fig. 10 is a view showing gearing for operating the plate-cylinders and for disconnecting them.

Referring to the accompanying drawings, the reference I marks the impression-cylinders, T the type or plate cylinders, and D the distributing-cylinders.

d marks the distributing-rollers coacting with the distributing-cylinders, and the references A B C indicate three printing-machines arranged one above another.

The reference R marks the rocker, shown as extending at right angles to the axis of the distributing-cylinders across one end thereof, and is suitably journaled in the framework. (Not shown.) The rocker is composed of a shaft and two or more arms thereon. The rockers of machines B C have arms 2, provided with pins 3 to engage the grooved collars 4 on ends of the rollers *d*, and the arms 5, by which the rockers are operated. The rocker of machine A is composed of a like shaft and arms 2 and 5 thereon and rigid therewith, the arm 2 having a pin 3 to engage the grooved collar 6, rigidly fixed to the distributing-cylinder D. In the three lower instances the arms 5 are adjustably connected with the arms 7, which have toothed segments 8 thereon, by means of pins 9, the nuts or heads 10, and the slots 11. (See Figs. 5 and 6.) The gear-segment 8 meshes with the rack 12 of the slide 13, which has an up-and-down motion at the side of the machine and is operated by connections from the rotating cam 14 on shaft 15 near the base of the machine.

The connections shown for moving the slide consist of the pivoted arm 16, having an antifriction-roller 17, which engages the cam 14, and connected with the slide by means of links 18 and bell-lever 19. The weight of the bar 13 is taken by the spring 20, which lies in the housing 21 and abuts against the stationary lug 22 and the lug 23 on the bar 13. The described apparatus gives endwise reciprocating motion to the distributing-rollers *d* in the case of machines B C and to the distributing-cylinder D in the case of machine A. Other connections between cam 14 and slide-bar 13 may be used, if preferred.

A modification of the connections between the cam and the rocker is shown in Figs. 1 and 3, where the rocker R of the extreme upper distributing apparatus is connected with a cam 24, supported upon the shaft 25 of the distributing-cylinder *d* or upon a bushing 26

thereon. The cam 24 and arm 5 are connected by the roller 27 and the pin 28, which fits loosely into a socket in the end of the arm 5, the pin and the roller being connected by

5 a ball-and-socket joint, as shown. The cam 24 is rigid with the gear 29, which gear is driven from the type-cylinder T by an intermediate gear 30. This construction gives reciprocating motion to the rollers *d*.

10 The fountain-rollers F (shown to the left in the machines A B C) are operated by a pawl-and-ratchet mechanism 31, which is or may be of usual construction. The pawl is carried by the lever 32, which is pivoted on the

15 shaft of the roller or on an extension thereof and which extends into the path of the roller 33, carried by the slide-bar 13, whereby the fountain-roller receives its motion. By preference the rollers move the levers 32 in one

20 direction only, the levers being returned to normal position by means of a spring or weight. (Not shown.) The throw of the levers 32 may be regulated by means of a series of holes *a* in a stationary part and a pin *b*,

25 set in one of the holes. The adjustable pin *b* forms a stop against which the lever 32 comes when thrown back by the spring or weight. For the purpose of preventing accidents, caused by putting the pin *b* in a hole

30 on the wrong side of the lever, the said lever is provided with a horn 34 of such length and so placed as to cover in one extreme position of the lever all the holes *a*. Hence it is impossible to get pin *b* on the wrong side of

35 lever 32.

The modification of the fountain-roller-operating mechanism (shown at the upper part of Fig. 1 and in Figs. 3 and 4) will now be described. The fountain-roller F, the pawl-and-ratchet mechanism 31, and lever 32 are

40 or may be as above described. The slide 13^a is provided with slots 35 36, one to embrace the bushing 26, hereinbefore described, or the shaft 25, and the other to embrace the shaft

45 37 of the roller F or a stud upon the frame and receives its motion from the cam 24 on bushing 26 by means of an antifriction-roller 38 on the slide. The slide has an arm or lug 39 to engage a pin or lug 40 on the lever 32, and

50 so moves the latter in one direction, a spring (not shown) moving it the other way.

The ductor-rollers are or may be operated by suitable means from the cam 14, which operates the reciprocating member of the distributing apparatus and the fountain-rollers.

55 The means shown consists of the arm 16, before mentioned, which is provided with a toothed sector 41, engaging a toothed portion of the slide 43, which extends along the side

60 of the machine. Slide 43 ends in a cam 44, which runs under a roller 45 on the slide-bar 46, which runs alongside the slide-bar 13, hereinbefore mentioned. Slide-bar 46 has rollers 47 thereon to operate the arms 48 of

65 shafts 49. In machines A and B the shafts 49 have arms 50 supporting the ductor-rollers

51. The arms 48 are held against the rollers 47 by means of springs 52, which surround rods 53 and work between stationary lugs 54 and collars 55 on the rods. An adjustable

70 stop 56 limits the motion of the ductor-roller. Referring to machine C, the ductor-roller 51 at the left thereof is operated in a somewhat different manner. The shaft 49 has upon it a toothed sector 56', which engages a like sec-

75 tor 57 of shaft 58, which shaft has an arm 59 engaging the slide. An adjustable stop 60 limits the motion of sector 56', and so of ductor-roller 51. The arm 48 is preferably ad-

80 justably connected with the shaft or stud 49 by means of an arm 61, rigid with the shaft and provided with an overhanging lug 62, having a screw 63 passing therethrough and resting against the arm 48 or engaging with

85 a screw-threaded hole therein. The arms 48 and 61 are locked together by means of a screw-bolt 64, which passes through a slot 65 of arm 48 and engages a threaded hole in the arm 61.

The modification (shown at the upper part 90 of machine C in Fig. 1) of the means for operating the ductor-rollers comprises a cam 67, which is rigid with the gear 29, hereinbefore referred to, and an antifriction-roller 68 on the arm 48 of shaft 49. The weight of the

95 ductor-roller and its operating part maintains the roller 68 in contact with the cam 67.

It is obvious that the inking apparatus at the other ends of the machines A B C are or may be operated by means like those herein-

100 before described, and such duplication is indicated by the extension of rod 42 and link 18 to the right in Fig. 1.

The distributing-cylinder D of the upper inking apparatus (shown in Fig. 1) is driven

105 from the impression-cylinder I of machine C by means of the train of toothed gearing 69. (Shown in Figs. 2 and 10.) In case it is desired to throw out of operation any of the

110 inking and printing apparatuses the gear 70 of the type-cylinder T is disconnected from the gear 71 of the cylinder I, or it is disconnected from its cylinder T. In case any type-

115 cylinder T, whose inking apparatus is operated by the slides 13 and 46, is disconnected its distributing apparatus is disconnected from the operating-slides. This is done by

120 loosening the screw-bolt 9, whereupon the arm 7 will rock without operating the rockers R.

It will be noted that in the machines shown in the drawings and hereinbefore described the ink-distributing apparatus comprises two

125 elements, one of which reciprocates relatively to the other, as rollers *d* or cylinder D.

Many changes in details and parts of combinations may be made without departing from this invention. Therefore I do not limit myself to the precise structure shown in the drawings and hereinbefore described.

130

I claim—

1. In an ink-distributing apparatus, the

combination of the distributing-cylinder D, and the roller (or rollers) *d*, one of said elements being movable to and fro in an axial direction, a to-and-fro-moving slide, and disconnectible mechanism for connecting said slide with and operating said axially-movable element, substantially as described.

2. In an ink-distributing apparatus, the combination of the distributing-cylinder D, and the roller (or rollers) *d*, one of said elements being movable to and fro in an axial direction, a to-and-fro-moving slide, a rocker, and disconnectible mechanism for connecting said rocker with and operating said axially-movable element, substantially as described.

3. In a printing-machine, the combination of an ink-distributing apparatus one element of which can reciprocate relatively to the other, a slide, a rocker, disconnectible toothed gearing between the slide and rocker, and connections, whereby the said part is reciprocated, substantially as described.

4. In a printing-machine, the combination of an ink-distributing apparatus, one element of which can reciprocate relatively to the other, a cam 14, slide 13, rack 12 thereon, the rocker, having toothed arm 7 loose thereon, a slot-and-screw device locking arm 7 to

an arm of the rocker, and connections, substantially as and for the purposes described.

5. In a printing-machine, the combination of a fountain-roller, a vibratory lever and connections to operate it, a stationary part having holes, a removable pin to set in the holes to limit the motion of the lever, and a horn on the lever, said lever and horn covering all the holes when the lever is at one extreme of its motion, whereby the pin cannot be wrongly placed, substantially as described.

6. The combination of two or more printing-presses, an ink-distributing apparatus for each having one element movable to and fro relatively to the other, a to-and-fro-moving slide, and connections between each of said to-and-fro-moving elements and said slide each having a disconnectible part, whereby any to-and-fro-moving element may be rendered inoperative at will, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 10th day of October, 1893.

WALTER SCOTT.

Witnesses:

FREDERIC GOODWIN,
RICHARD W. BARKLEY.