

No. 819,371.

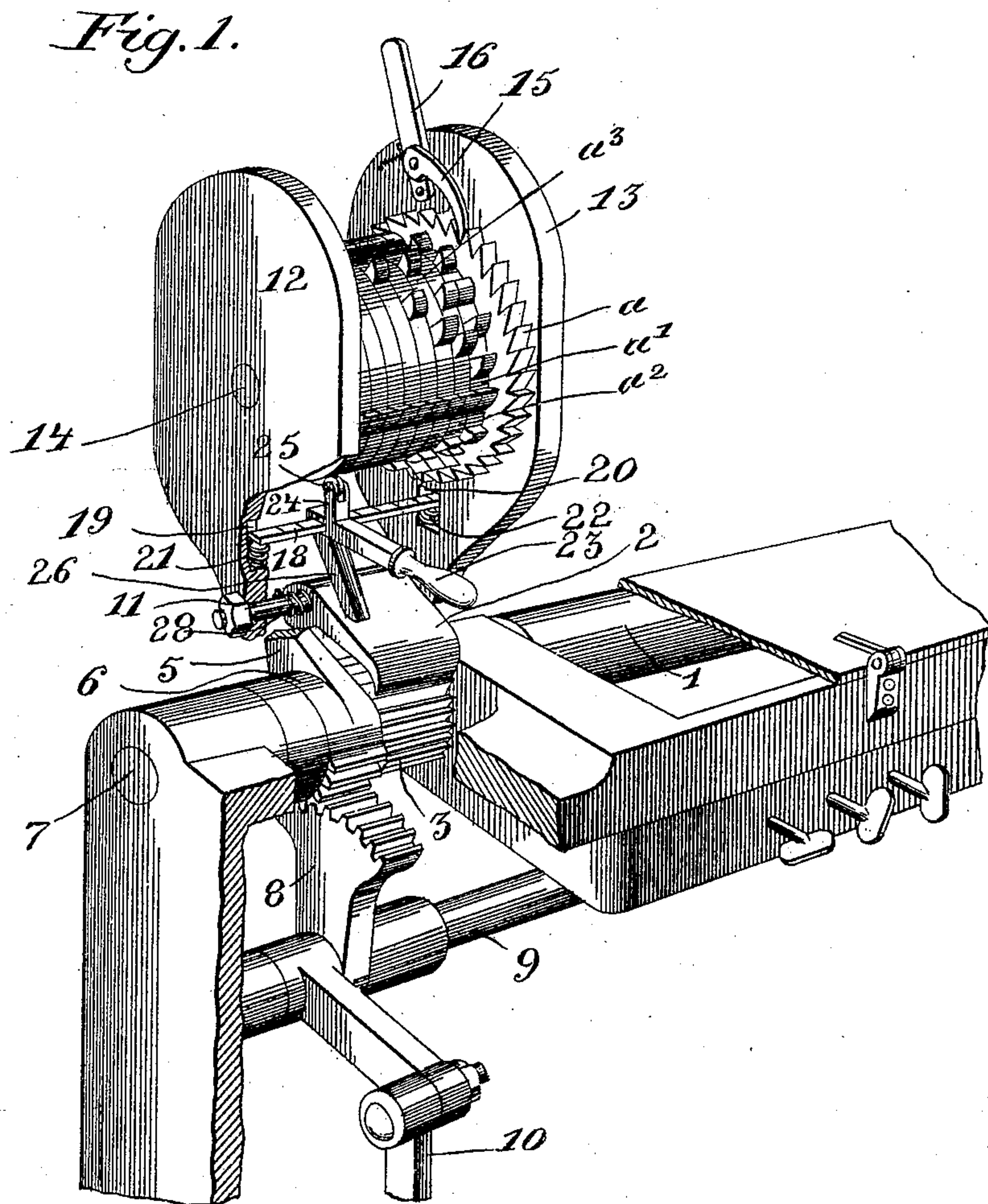
PATENTED MAY 1, 1906.

J. A. NOEL.

INKING APPARATUS FOR PRINTING PRESSES.

APPLICATION FILED SEPT. 15, 1905.

2 SHEETS—SHEET 1.



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2 SHEETS—SHEET 2.

Fig. 2.

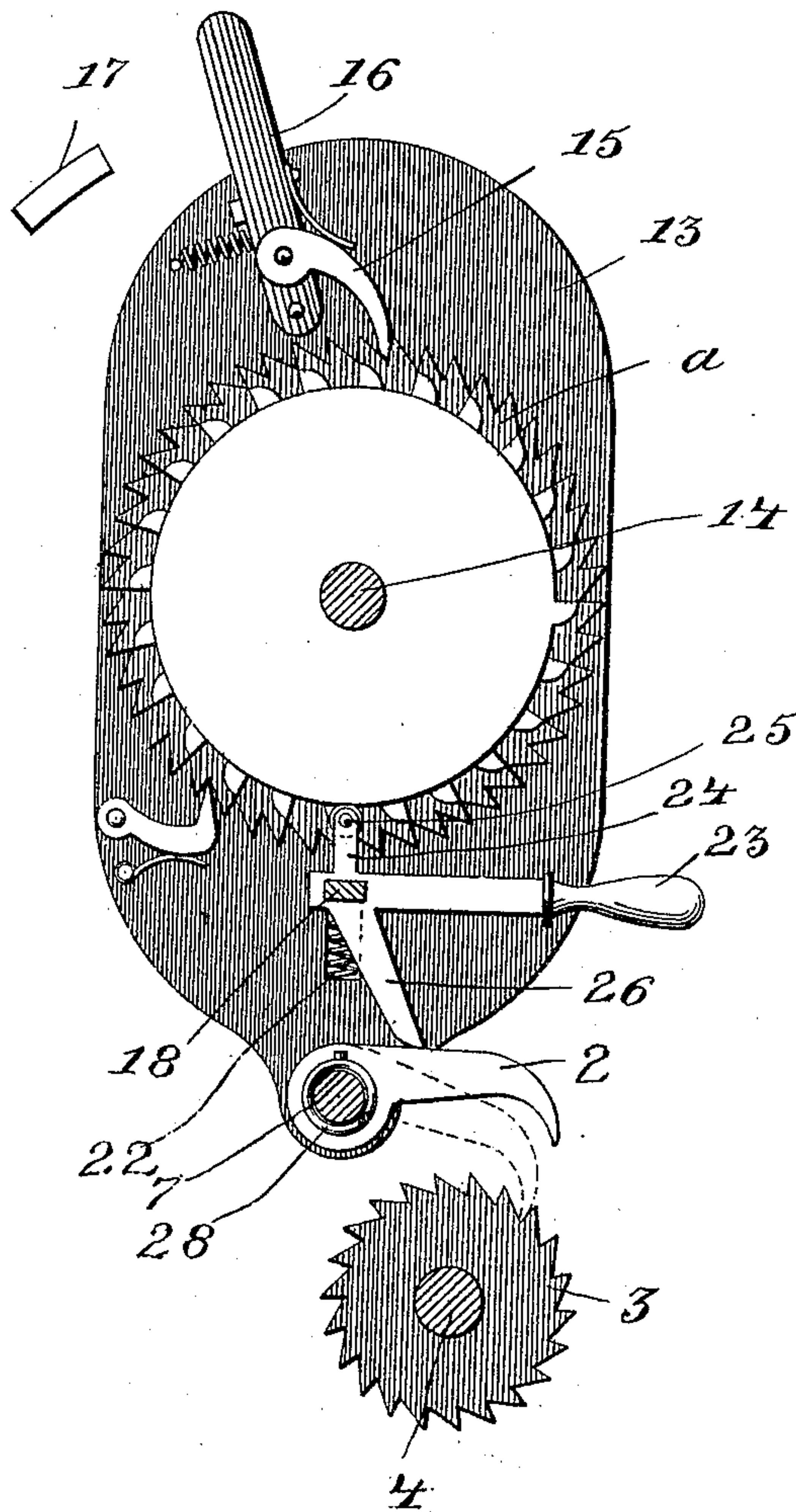


Fig. 4.

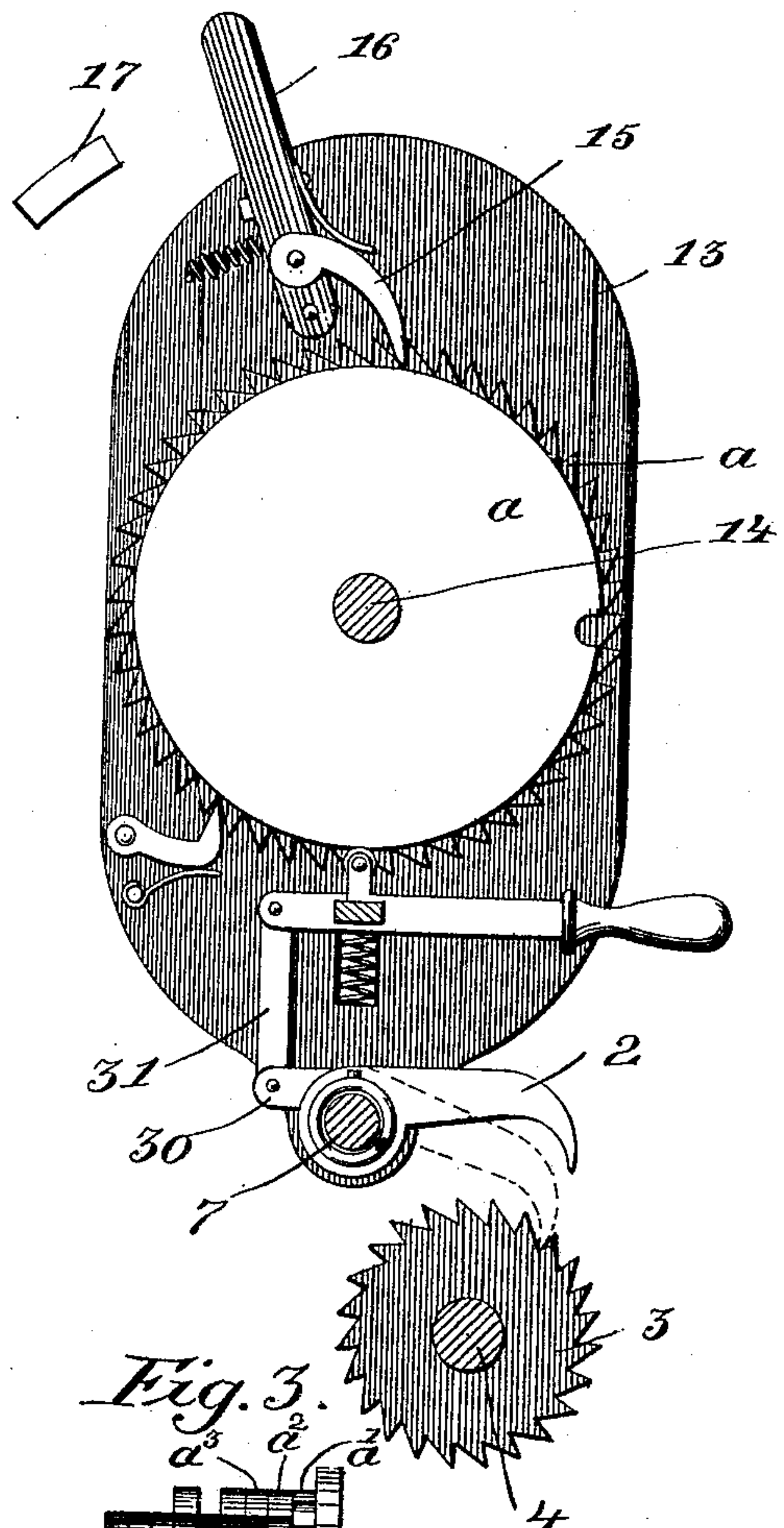
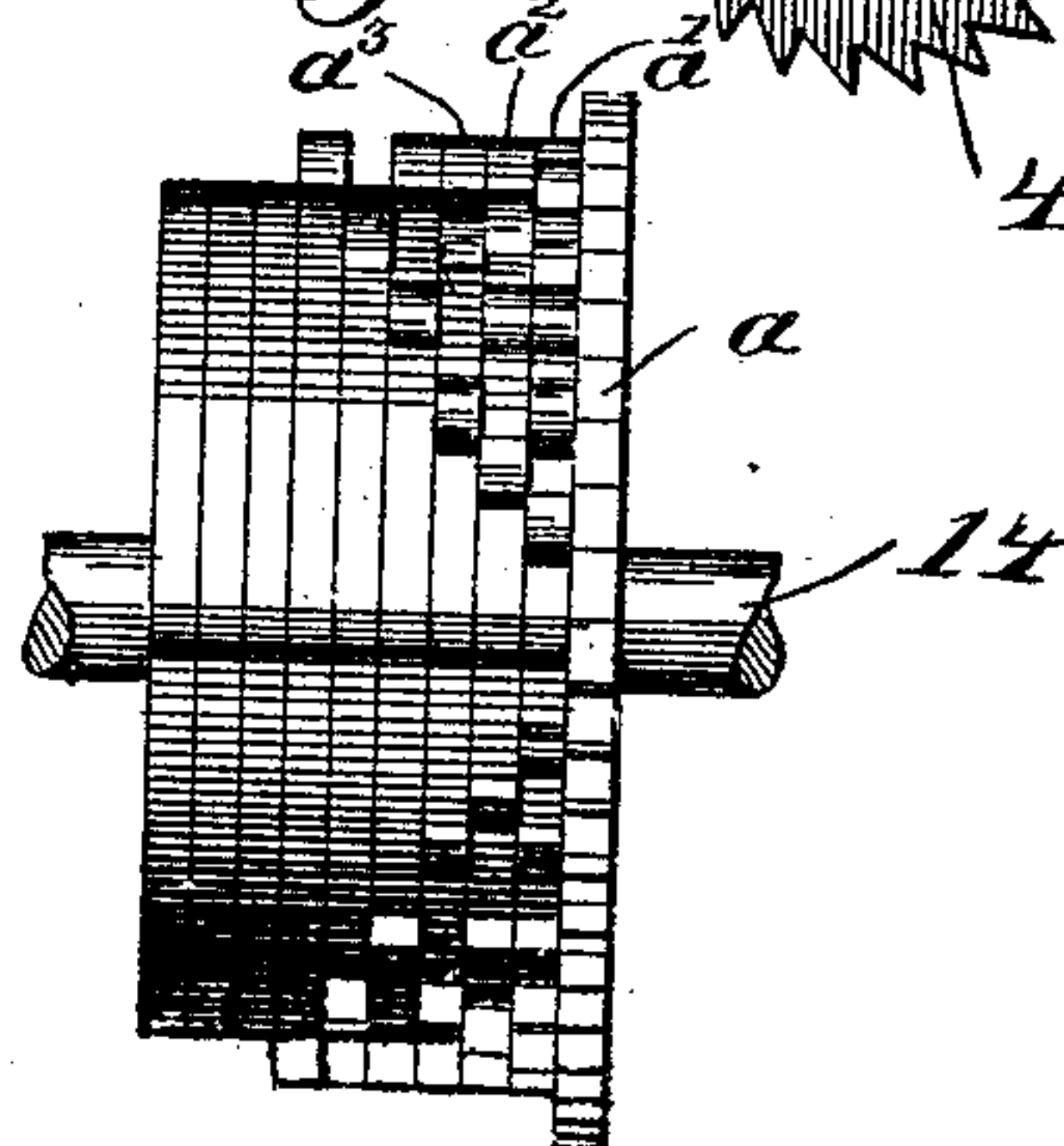


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOHN A. NOEL, OF WASHINGTON, DISTRICT OF COLUMBIA.

INKING APPARATUS FOR PRINTING-PRESSES.

No. 819,371.

Specification of Letters Patent.

Patented May 1, 1906.

Application filed September 15, 1905. Serial No. 278,645.

To all whom it may concern:

Be it known that I, JOHN A. NOEL, a citizen of the United States, residing at Washington, in the District of Columbia, have invented certain new and useful Improvements in Inking Apparatus for Printing-Presses, of which the following is a specification.

My invention relates to mechanism for controlling the movement of the inking apparatus of a printing-press.

The object of my invention is to produce a simple and efficient mechanism whereby the relation between the number of partial rotational movements of the fountain-roller and the number of reciprocations of the bed may be varied at the will of the pressman. In other words, through the agency of my invention it is possible to obtain a partial rotation of the fountain-roller for every single reciprocating movement of the bed or a partial rotation of the fountain-roller for a plurality of reciprocations of the bed.

In printing-presses as now constructed the amount of movement which is automatically imparted to the fountain-roller cannot be reduced sufficiently for all kinds of work which may be performed upon the press. These presses are so constructed that a single reciprocating movement of the bed may operate the pawl-and-ratchet mechanism, which turns the fountain-roller the space of one tooth or of several, but cannot operate it less than the space of one tooth; but the amount of movement imparted to the roller by one reciprocation of the bed moving the roller the space of one tooth of the ratchet-wheel gives an amount of movement to the fountain-roller which supplies an amount of ink in excess of that required for many kinds of work which the press is capable of doing. For this reason a smaller press must be used for printing smaller papers, which could as well be printed upon the larger but for this excessive supply of ink. In some cases the pressman attempts to modify this excessive supply by allowing the fountain-roller to feed for a certain length of time and then cutting off the supply by disconnecting the roller from its operating mechanism, the form being supplied with ink during this interval from the quantity left upon the distributing and form rollers. As soon as the work begins to get light from an insufficient supply of ink the fountain-roller is again connected until the rollers are again supplied, and so on. This course is very objectionable, as the operator

is compelled to keep a constant watch upon the work being done, and in spite of all his care the work will assume different shades of color.

The object of my invention is to overcome these difficulties and to reduce the supply of ink to any desired degree by reducing the movement of the fountain-roller.

The primary movement from which the varied feed of the ink-fountain roller is to be derived is always the same; and my invention consists of a mechanism whereby the pawl of the ordinary mechanism is held out of engagement with its ratchet during any desired number of reciprocations of the bed and is forced into engagement with its ratchet-wheel intermittently with said reciprocations.

The means which I have devised for carrying out my invention I have shown in the accompanying drawings, in which—

Figure 1 shows in perspective a part of the ink-fountain with its roller, the oscillating toothed segment operated by the reciprocating bed, and the intermediate mechanism for communicating motion to the fountain-roller; Fig. 2, a vertical section of the intermediate mechanism for communicating motion to the fountain-roller, together with the operating-pawl and its ratchet; Fig. 3, a partial front elevation of the cylinder which controls the intermittent engagement of the operating-pawl with its ratchet; Fig. 4, a view similar to Fig. 2, showing a modified form of the intermediate mechanism.

The main parts (shown in Fig. 1) are of well-known construction and represent part of a Hoe press in which the fountain-roller 1 is moved by means of a pawl 2, which engages with a ratchet-wheel 3, keyed upon the shaft 4 of the roller. The pawl is carried upon an arm 5 of the sleeve 6, loose upon the shaft 7 and having teeth in mesh with a segment 8, pivoted upon a shaft 9 and operated by the reciprocating bar 10, which is moved in the usual manner by the incline on the side of the reciprocating bed.

As heretofore constructed the only reduction of movement of which the machine was capable was effected by limiting the action of the pawl on the teeth of the ratchet-wheel fixed to the fountain-roller. This reduction was limited to the movement of a single tooth at each reciprocation of the bed. Any further reduction would stop the working of the inking apparatus.

Carried by the arm 5 of the sleeve 6

through the agency of the bolt 11 are the up-
rights or standards 12 and 13. A shaft 14
connects the standards 12 and 13, and a cyl-
inder formed of a series of disks a a' a^2 a^3 , &c.,
5 is rotatably mounted on said shaft. The
number of disks composing said cylinder may
be varied to suit the conditions to which a
press of a certain type is designed to be sub-
jected. The disks a a' a^2 a^3 are adapted to
10 rotate in unison and are actuated through
the medium of the pawl 15, carried by the le-
ver 16, said pawl engaging the teeth of the
disk a and rotating said disk the distance of
one tooth for every reciprocation of the bed
15 as a result of the oscillation of the arm 5,
which carries the standards 12 and 13, and
the consequent intermittent engagement of
the pawl-supporting lever 16 with the fixed
stop 17. The disk a' has a less number of
20 teeth than disk a and the disk a^2 a less num-
ber of teeth than disk a' , and so on. The rel-
ative proportion between the number of
teeth of the disks may be varied to suit con-
ditions. As shown, however, the number of
25 teeth on disk a is forty-eight and on each suc-
ceeding disk to the left is twenty-four, eight-
een, twelve, eight, six, four, three, two, and
one, respectively. A bar 18 has its ends
movably mounted in the grooves 19 and 20
30 in the standards 12 and 13, and springs 21
and 22 constantly tend to press said bar to
the top of the grooves. Longitudinally ad-
justable on said bar is a link provided with a
handle 23, an upward projection 24, carrying
35 a roller 25, which constantly contacts with
one of the disks of the cylinder, and a down-
wardly-projecting toe 26, which constantly
engages the upper surface of the pawl 2, said
pawl being held upward out of engagement
40 with its ratchet 3 and in engagement with
the toe 26 through the medium of the spring
28. The bar 18 is graduated or scaled, so
that the link may be adjusted along the bar
beneath any desired disk of the cylinder with
45 despatch and precision. If it is desired to
move the fountain-roller the distance of one
tooth of the ratchet 3 with every reciproca-
tion of the bed, a disk with the same number
of teeth as the disk a can be provided. It
50 will be apparent that if the projection 25 of
the link is adjusted directly beneath the disk
 a' one movement of the apparatus will be in-
effective to turn the fountain-roller; but the
second movement will cause the pawl 2 to
55 engage the ratchet 3 and turn the ratchet 3
and in turn the roller 1 the distance of one
tooth, giving one-half the amount of ink-feed
which would be given by the lowest gage of
the machine as heretofore constructed. A
60 further reduction of the ink-feed can be had
by adjusting the projection 25 of the link to
the left on the rod 18 directly beneath a disk
having a less number of teeth than the disk
 a' . This reduction may be continued at will
65 according to the character of the work.

In the modification shown in Fig. 4 all the
disks except disk a are provided with recesses
 b instead of teeth, each successive disk from
left to right having a less number of recesses
70 than the preceding one. These recesses are
adapted to receive the projection 25 of the
link when in line, the constant tendency of
said projection being to move upward as a re-
sult of the influence of the springs 21 and 22
75 on the bar 18. When this upward move-
ment of the projection 25 takes place, pres-
sure on the heel 30 of pawl 2 by the secondary
link 31 is relieved, the pawl is moved into en-
gagement with ratchet 3 by spring 28, and
80 the next movement of the apparatus will
move the fountain-roller the distance of one
tooth of the ratchet 3.

I have described my invention so that one
skilled in the art may make it; but I do not
limit myself to the details of construction, 85
which may obviously be varied without de-
parting from the scope of the invention.

I claim—

1. In combination with the fountain-roller
of a printing-press and with its pawl-and- 90
ratchet wheel, an arm supporting said pawl
and complete means carried by said arm
whereby the pawl is brought into engagement
with the ratchet-wheel at intervals.

2. In combination with the fountain-roller 95
of a printing-press and with its pawl-and-
ratchet wheel, an arm supporting said pawl
and complete means carried by said arm for
controlling the intermittent engagement of
the pawl and ratchet. 100

3. In combination with the fountain-roller
of a printing-press and with its pawl-and-
ratchet wheel, an arm supporting said pawl, a
rotatable member carried by said arm and
means interposed between the pawl and mem- 105
ber and actuated by the rotation of said
member for controlling the intermittent en-
gagement of the pawl and ratchet.

4. In combination with the fountain-roller 110
of a printing-press and with its pawl-and-
ratchet wheel, an arm supporting said pawl, a
rotatable member carried by said arm and
means interposed between said pawl and
member for controlling the intermittent en-
gagement of the pawl and ratchet. 115

5. In combination with the fountain-roller
of a printing-press and with its pawl-and-
ratchet wheel, an arm supporting said pawl,
a rotatable member carried by said arm and
means interposed between the pawl and 120
member and actuated by the rotation of said
member whereby said pawl is brought into
engagement with the ratchet-wheel at inter-
vals.

6. In combination with the fountain-roller 125
of a printing-press and with its pawl-and-
ratchet wheel of a rotatable member having
a bearing independent of the fountain-roller
adapted by its rotation to control the inter-
mittent engagement of the pawl and ratchet. 130

7. In combination with the fountain-roller of a printing-press and with its pawl-and-ratchet wheel of a rotatable member having a bearing independent of the fountain-roller and means interposed between the pawl and member and actuated by the rotation of said member for controlling the intermittent engagement of the pawl and ratchet.

8. In combination with the fountain-roller of a printing-press and with its pawl-and-ratchet wheel, a spring normally holding said

pawl out of engagement with its ratchet-wheel and means for varying the interval of time between the engagements of the pawl with its ratchet-wheel.

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. NOEL.

Witnesses:

HENRY T. BRIGHT,

HENRY E. GLOTZBACH.