

No. 662,868.

Patented Nov. 27, 1900.

E. HETT.
PRINTING FORM AND PRESS.

(Application filed Nov. 20, 1899.)

(No Model.)

2 Sheets—Sheet 1.

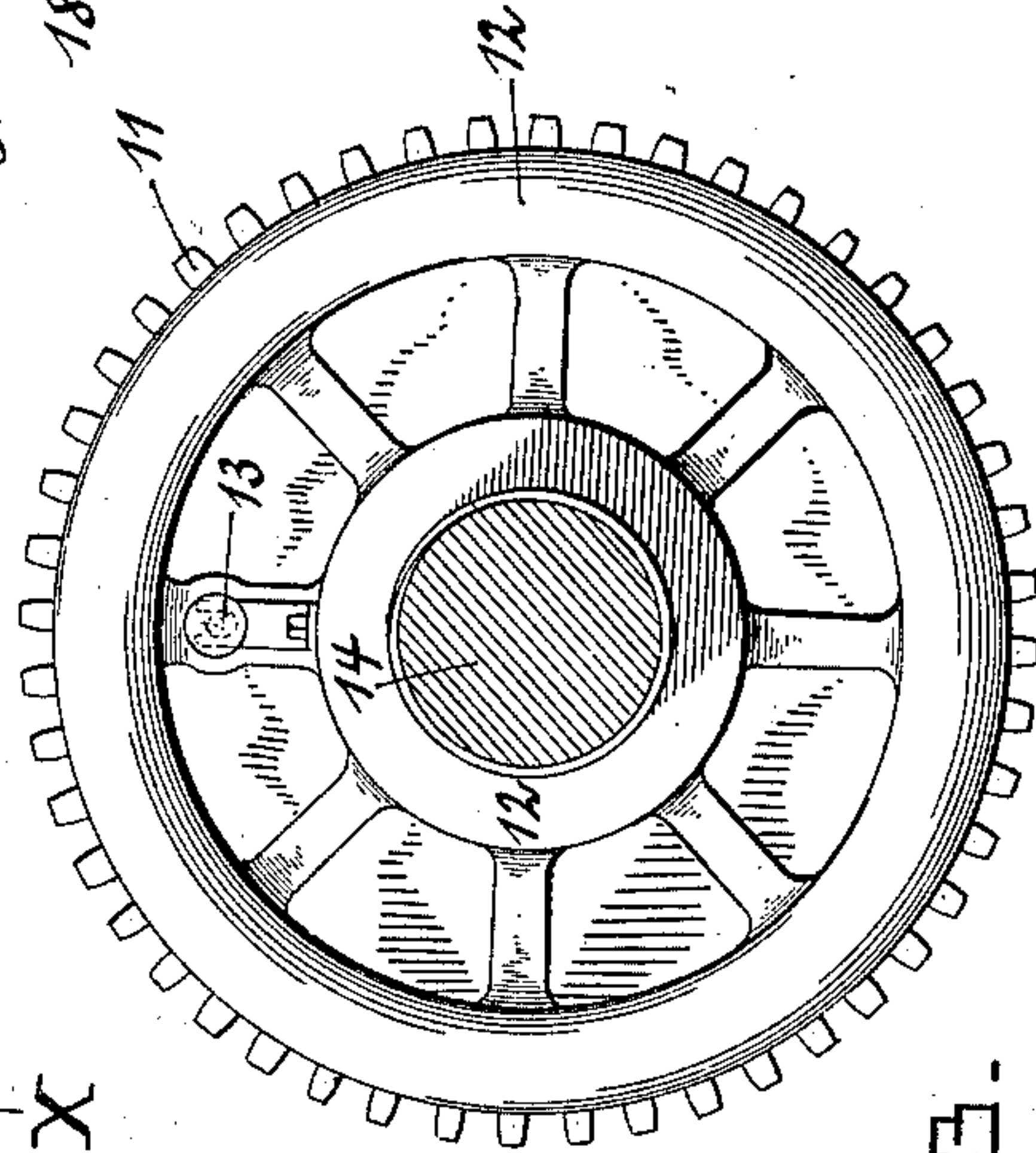
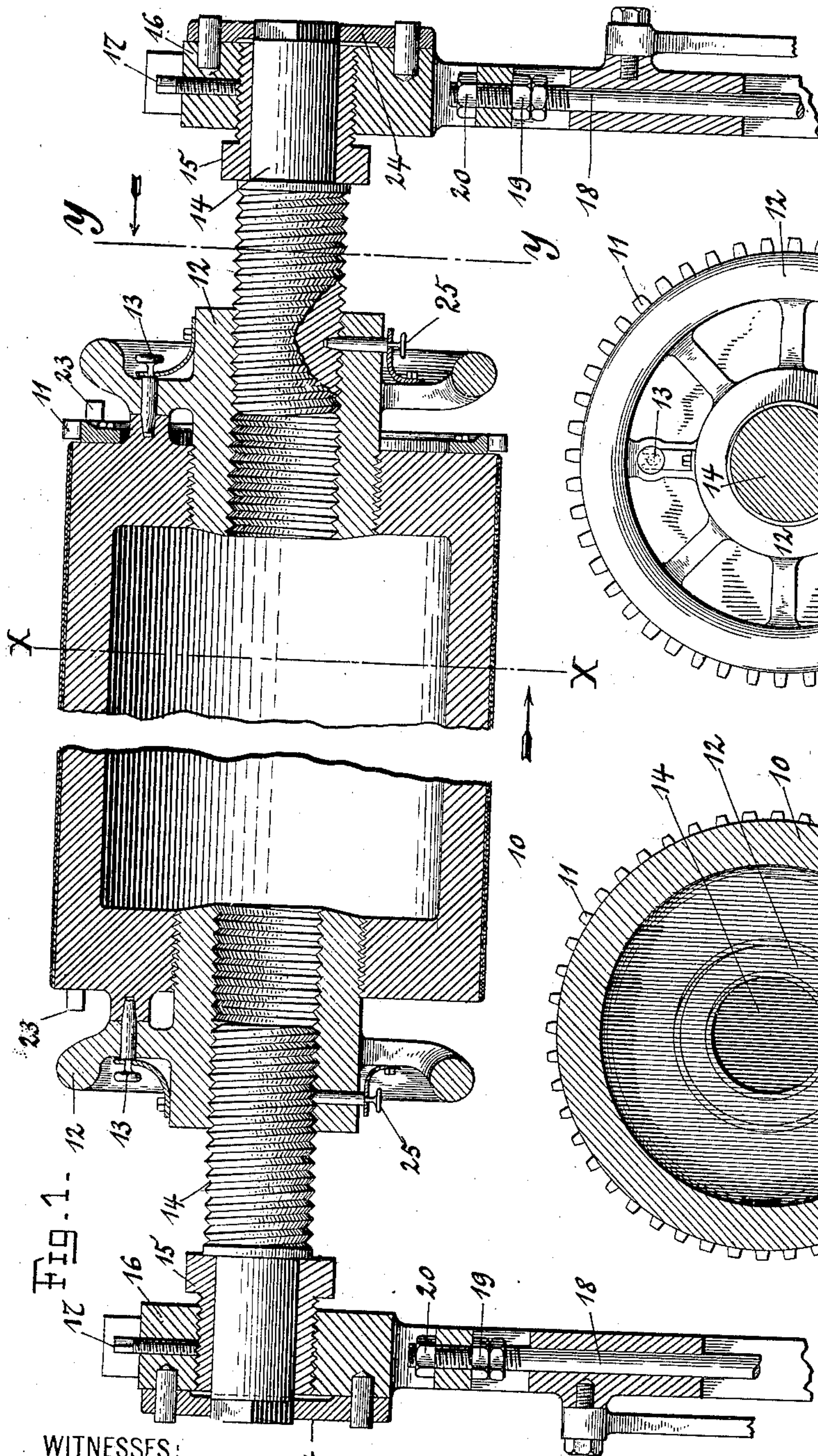


Fig. 2.

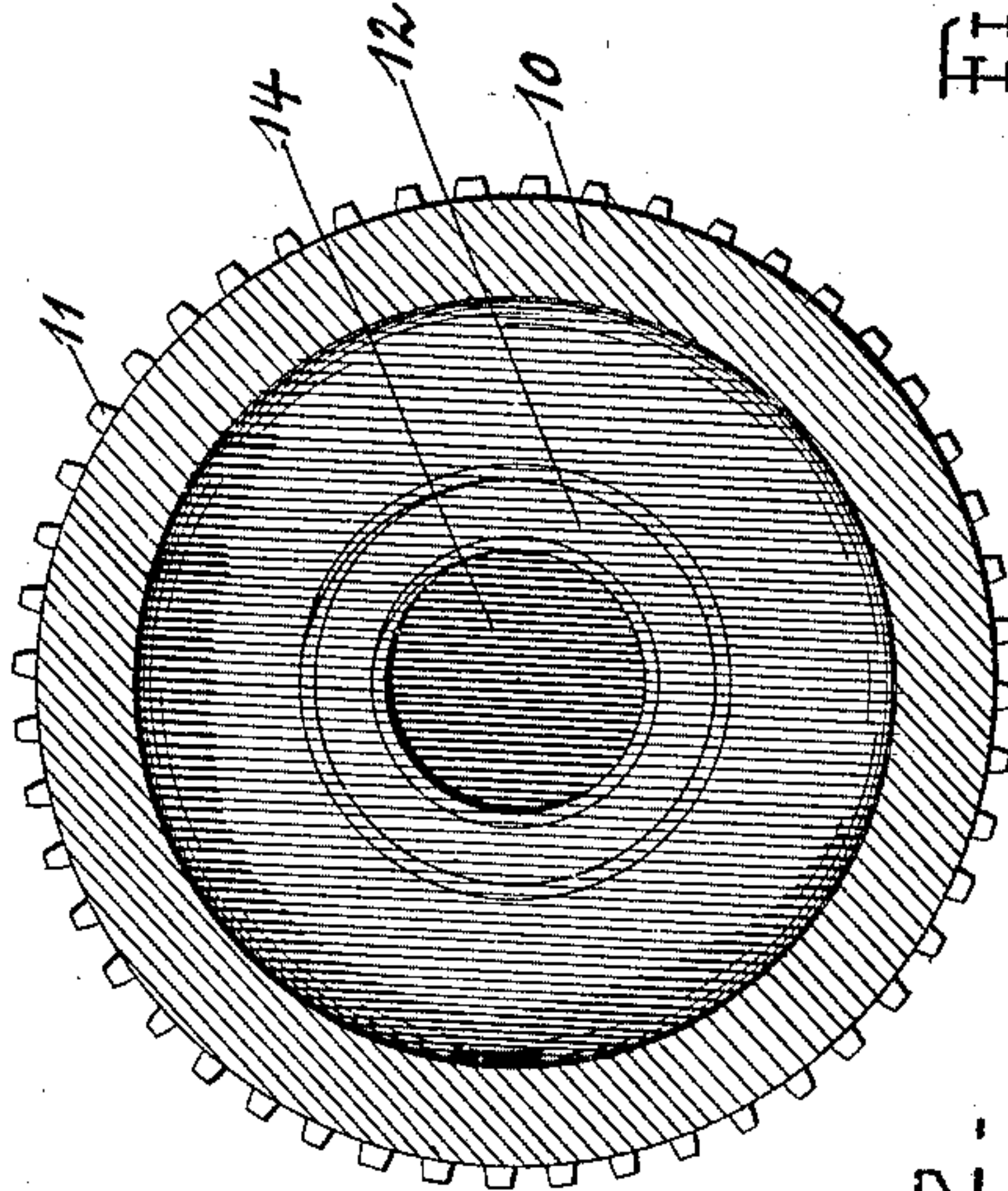
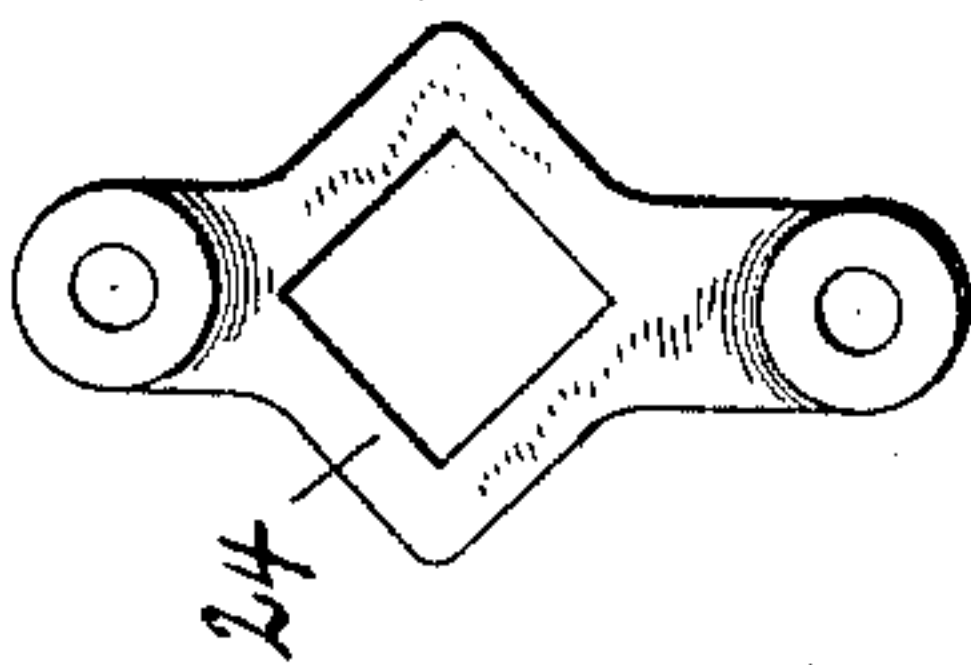


Fig. 3.

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Fig. 4



INVENTOR

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No. 662,868.

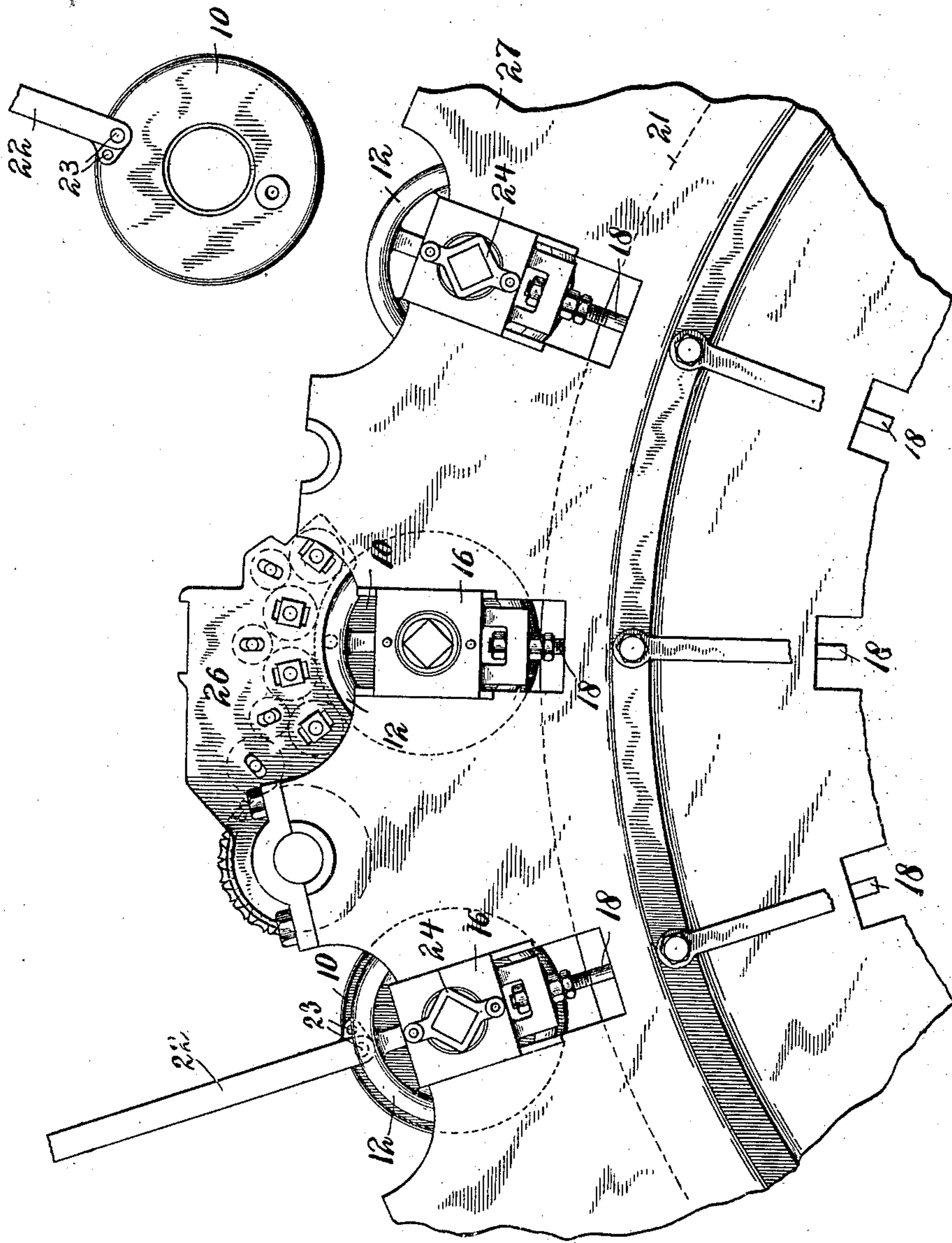
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UNITED STATES PATENT OFFICE.

EDWARD HETT, OF NEW YORK, N. Y.

PRINTING FORM AND PRESS.

SPECIFICATION forming part of Letters Patent No. 662,868, dated November 27, 1900.

Application filed November 20, 1899. Serial No. 737,655. (No model.)

To all whom it may concern:

Be it known that I, EDWARD HETT, a citizen of the United States, and a resident of New York, (New Dorp,) county of Richmond, and State of New York, have invented certain new and useful Improvements in Printing Forms and Presses, of which the following is a specification.

The invention relates to printing and other presses and to mechanism in such presses permitting the ready and convenient mounting and unmounting of rollers in general, and in particular tubular and cylindrical printing-forms having surfaces that are continuous or unbroken.

It consists of the combinations and devices herein shown and described and claimed.

Referring to the accompanying drawings, which form a part of this specification, Figure 1 is a sectional view, with some of the parts broken away, of one of the rollers or printing-forms of my invention in its preferred form. Fig. 2 is a section of the same taken at right angles to the section of Fig. 1 and on the line *x x*, and Fig. 3 a similar section on the line *y y*. Fig. 4 is a detail. Fig. 5 represents a portion of a series of printing-forms in a multicolor-press.

10 is the roller or printing-form or form-support. It is represented in Fig. 1 as a printing-form having a body or base, as, say, of aluminium, a thin layer upon that, as, say, of electrolytically-deposited copper, and a thin layer upon that, as, say, of electrolytically-deposited zinc, the surface being continuous or unbroken. The roller 10 has a suitable gear-wheel 11 bolted to it at one end, by which it may be rotated. The roller also has at each end internally depending flanges which are internally screw-threaded and adapted to receive removable end hubs or inner journal extension-pieces 12, which are externally screw-threaded for the purpose of removal and insertion. The end hubs or journal extensions 12 have spring locking-pins 13, operating to lock the hubs 12 fast to the roller or printing-form 10 at any desired predetermined point. The hubs or journal extensions 12 are internally screw-threaded and adapted to receive the inner ends of short journal-shafts proper, 14, the inner ends of which are screw-threaded for the purpose and the outer ends of which are adapted to rotate in the usual way in the bearings.

25 is a spring locking-pin for locking the hub or journal extension 12 to the journal-shaft proper, 14, at any desired predetermined point. The hubs 12 may properly be regarded as the inner retractile or removable ends or extensions of the short journal-shafts 14, these inner ends or extensions 12 being retractile or removable from the roller 10.

15 represents removable and adjustable bushings or bearings, the inner ends of which constitute lateral guides, against which collars on the shafts 14 take, thereby accurately determining the lateral position of the printing-form or roller in the press. These bushings or bearings 15 are externally screw-threaded and fit into internally-screw-threaded bearings 16, as shown, and hence they are removable from and replaceable in said parts 16, and when replaced and adjusted they are permanently set in such adjustment by the set-screws 17. A series of such lateral guides 15 in a multicolor-press permit the exact and accurate remounting and interchangeable mounting of a printing-form and of all the printing-forms of a series always in the same identical lateral relationship. Similar guides 15 in the transfer-press will permit the accurate transferring of a series of component and registering designs to a series of printing-surfaces and the accurate printing of all those designs simultaneously in register in a multicolor-printing press. The removability of the bearings 15 from their supporting parts 16 permits the long-continued use together of a particular short journal-shaft 14 with its particular bearing 15, whether in transfer-press or in printing-press and whether one particular roller or printing-form 10 be in use or another. This attains the snug fit and smooth running of long-used machinery in spite of indefinite interchangeability of rollers or printing-forms or of the other parts. The bearings 16 are movable toward and from the impression-surface of the press or other surface with which the roller coöperates. To that end they are carried by pressure-rods 18, having adjusting-nuts 19 and holding or clamping nuts 20. These pressure-rods 18 may be moved by any desired mechanism.

In Fig. 3 the middle part of the figure represents the printing-surfaces as moved into operative printing position in contact with the impression-surface 21. The left-hand side of the figure represents the printing-sur-

faces as moved outwardly by the pressure-bars out of operative position and out of contact with the impression-surface.

To unmount the roller or printing-form, a
5 suitable lifting device 22 is attached to the roller or printing-form and preferably at two points at each end, as shown at 23 in Figs. 1 and 5. The short journal-shafts proper, 14,
10 which have a squared projecting outer end for that purpose, have the lock 24 applied to them to keep them from turning during the operation. The movable hubs or journal extensions 12 are then unlocked both from the roller or printing-form 10 and from the screw-
15 threaded part of the journal-shafts proper, 14, by the pulling out of the spring locking-bolts 13 and 25. The hubs or journal extensions 12 are then unscrewed from the roller or printing-form and simultaneously screwed
20 upon the journal-shafts proper until they are entirely free and clear from the roller or printing-form. This is the situation shown at the left of Fig. 5. The roller or printing-form may then be lifted to any desired extent until it is entirely clear of all parts of the frame
25 of the machine, as is indicated at the right of Fig. 5. In remounting the roller or printing-form the reverse procedure is adopted, and when the hubs or journal extensions 12 are
30 screwed tightly in place they are, as before, locked respectively to the roller or printing-form and also to the short journal-shafts proper, and the locking devices 24 are then in condition for operation in use. The hubs or
35 journal extensions 12 have a spoked wheel mounted upon them for convenience in handling.

For the purposes of some features of the invention the roller need not be a printing-form
40 nor yet a form-support, but may have other uses. For the purposes of other features of the invention the roller is a printing-form.

Many of the details and parts of the structure as specifically shown in the drawings and
45 heretofore described may be changed or omitted without departing from my invention, the essentials of the several features of which are set out in the several claims hereto appended. It is to be observed, however, that the feature
50 of convenient mounting and dismounting of the roller or printing-form is attained without breaking into or sacrificing the circumferential continuity of the surface of the roller or printing-form.

55 26 represents a series of inking mechanisms for the printing-forms.

27 is the frame of the machine.

The printing-form referred to in this specification may have either a planographic, relief, or intaglio printing-surface.
60

What I claim as new, and desire to secure by Letters Patent, is—

1. In a press, a tubular roller having a surface that is continuous or unbroken, in combination with two short journal-shafts supporting the roller at its ends, one of which
65 journal-shafts is retractile from the roller and

means to retract the same whereby the roller may be mounted and dismounted and removable bearings for said retractile journal-shaft
70 and means for locking said bearings in operative position, substantially as described.

2. In a press, a tubular printing-form having a surface that is continuous or unbroken, in combination with two short journal-shafts
75 supporting the printing-form at its ends, one of which journal-shafts is retractile from the roller and means to retract the same whereby the printing-form may be mounted and dismounted and removable bearings for said retractile journal-shaft and means for locking
80 said bearings in operative position, substantially as described.

3. In a press, a tubular roller having a surface that is continuous or unbroken, in combination with two short journal-shafts supporting the roller at its ends, both of said journal-shafts being retractile from the roller,
85 and means to retract the same, whereby the roller may be mounted and dismounted and removable bearings for said retractile journal-shafts and means for locking said bearings in operative position, substantially as described.
90

4. In a press, a tubular printing-form having a surface that is continuous or unbroken, in combination with two short journal-shafts supporting the printing-form at its ends, both of said journal-shafts being retractile from the roller, and means to retract the same,
95 whereby the printing-form may be mounted and dismounted and removable bearings for said retractile journal-shafts and means for locking said bearings in operative position, substantially as described.
100

5. In a press, a cylindrical roller having a surface that is continuous or unbroken, in combination with two short journal-shafts supporting the roller at its ends, one of which journal-shafts is retractile from the roller,
105 and means to retract the same whereby the roller may be mounted and dismounted and removable bearings for said retractile journal-shaft and means for locking said bearings in operative position, substantially as described.
110

6. In a press, a cylindrical printing-form having a surface that is continuous or unbroken, in combination with two short journal-shafts supporting the printing-form at its
115 ends, one of which journal-shafts is retractile from the roller, and means to retract the same, whereby the printing-form may be mounted and dismounted and removable bearings for said retractile journal-shaft and means for locking said bearings in operative position, substantially as described.
120

7. In a press, a cylindrical roller having a surface that is continuous or unbroken, in combination with two short journal-shafts supporting the roller at its ends, one of which journal-shafts is retractile from the roller,
125 and means to retract the same mounted upon the journal-shaft proper, whereby the roller
130

may be mounted and dismounted and removable bearings for said retractile journal-shaft and means for locking said bearings in operative position, substantially as described.

5 8. In a press, a cylindrical printing-form having a surface that is continuous or unbroken, in combination with two short journal-shafts supporting the printing-form at its ends, one of which journal-shafts is retractile
10 from the roller and means to retract the same mounted upon the journal-shaft proper, whereby the printing-form may be mounted and dismounted and removable bearings for said retractile journal-shaft and means for
15 locking said bearings in operative position, substantially as described.

9. In a printing-press, in combination with suitable impression surface or surfaces and a series of suitable inking mechanisms, a series
20 of tubular printing-forms, the printing-forms having a surface that is continuous or unbroken and having two short journal-shafts supporting the printing-form at its ends, one of which is retractile therefrom, and means
25 for retracting the same, and a series of lateral guides, whereby the printing-forms may be mounted and dismounted, and mounted always accurately in the same relative position laterally with respect to one another, substan-
30 tially as described.

10. In a printing-press, in combination with suitable impression surface or surfaces and a series of suitable inking mechanisms, a series of tubular printing-forms, the printing-forms
35 having a surface that is continuous or unbroken and having two short journal-shafts supporting the printing-form at its ends, both of which are retractile therefrom, and means for retracting the same, and a series of lateral guides, whereby the printing-forms may
40 be mounted and dismounted, and mounted always accurately in the same relative position laterally with respect to one another, substantially as described.

45 11. In a printing-press, in combination with suitable impression surface or surfaces and a series of suitable inking mechanisms, a series of tubular printing-forms, the printing-forms having a surface that is continuous or un-
50 broken and having two short journal-shafts supporting the printing-form at its ends, one of which is retractile therefrom, and means for retracting the same mounted upon the journal-shaft proper, and a series of lateral
55 guides, whereby the printing-forms may be mounted and dismounted, and mounted always accurately in the same relative position laterally with respect to one another, substantially as described.

60 12. In a printing-press, in combination with suitable impression surface or surfaces and a series of suitable inking mechanisms, a series of tubular printing-forms, the printing-forms having a surface that is continuous or un-
65 broken and having two short journal-shafts supporting the printing-form at its ends, both of which are retractile therefrom, and means

for retracting the same mounted upon the journal-shafts proper, and a series of lateral guides, whereby the printing-forms may be
70 mounted and dismounted, and mounted always accurately in the same relative position laterally with respect to one another, substantially as described.

13. In a press, the roller 10 having a sur- 75 face that is continuous or unbroken, in combination with two short journal-shafts 14 having retractile inner extensions or hubs 12 and removable bearings 15, substantially as de-
80 scribed.

14. In a press, the roller 10 having a sur- face that is continuous or unbroken, in com-
bination with two short journal-shafts 14 hav-
ing retractile inner extensions or hubs 12, and
means for locking the inner journal exten- 85
sions or hubs to the roller and to the journal-
shaft proper and unlocking them therefrom,
substantially as described.

15. In a press, the roller 10 having a sur- face that is continuous or unbroken, in com- 90
bination with two short journal-shafts 14 hav-
ing retractile inner extensions or hubs 12, and
locking devices 24, substantially as described.

16. In a press, a tubular roller having a sur- face that is continuous or unbroken, in com- 95
bination with two short journal-shafts sup-
porting the roller at its ends, one of which
journal-shafts is retractile from the roller and
means to retract the same and suitable lift-
ing devices whereby the roller may be mount- 100
ed and dismounted, substantially as de-
scribed.

17. In a press, a tubular printing-form hav- ing a surface that is continuous or unbroken,
in combination with two short journal-shafts 105
supporting the printing-form at its ends, one
of which journal-shafts is retractile from the
roller and means to retract the same and suit-
able lifting devices whereby the roller may
be mounted and dismounted, substantially 110
as described.

18. In a press, a tubular roller having a sur- face that is continuous or unbroken, in com-
bination with two short journal-shafts sup-
porting the roller at its ends, both of said 115
journal-shafts being retractile from the roller,
and means to retract the same and suitable
lifting devices, whereby the roller may be
mounted and dismounted, substantially as
described. 120

19. In a press, a roller or printing-form in combination with two short journal-shafts supporting the roller or printing-form at its ends, one of said journal-shafts being retractile from the roller, and means to retract the
125 same, whereby the roller or printing-form may be mounted and dismounted, and adjustable and removable bearings for said retractile journal-shaft and means for locking said bearings in adjusted operative position, 130
substantially as described.

20. In a press, a cylindrical roller having a surface that is continuous or unbroken, in combination with two short journal-shafts

supporting the roller at its ends, one of which journal-shafts is retractile from the roller, and means to retract the same and suitable lifting devices whereby the roller may be
5 mounted and dismantled, substantially as described.

21. In a press, a cylindrical printing-form having a surface that is continuous or unbroken, in combination with two short journal-shafts supporting the printing-form at its
10 ends, one of which journal-shafts is retractile from the roller, and means to retract the same, and suitable lifting devices whereby the printing-form may be mounted and dis-
15 mounted, substantially as described.

22. In a printing-press, in combination with suitable impression surface or surfaces and a series of suitable inking mechanisms, a series of tubular printing-forms, the printing-forms
20 having a surface that is continuous or unbroken and having two short journal-shafts supporting the printing-form at its ends, one of which is retractile therefrom, and means for retracting the same, and a series of lateral
25 guides, and suitable lifting devices whereby the printing-forms may be mounted and dismantled, and mounted always accurately in the same relative position laterally with respect to one another, substantially as de-
30 scribed.

23. In a printing-press, in combination with suitable impression surface or surfaces and a series of suitable inking mechanisms, a series of tubular printing-forms, the printing-forms
35 having a surface that is continuous or unbroken and having two short journal-shafts supporting the printing-form at its ends, both of which are retractile therefrom, and a series of lateral guides, and suitable lifting de-
40 vices, whereby the printing-forms may be mounted and dismantled, and mounted always accurately in the same relative position laterally with respect to one another, sub-
stantially as described.

24. In a printing-press, in combination with suitable impression surface or surfaces and a series of suitable inking mechanisms, a series of tubular printing-forms, the printing-forms
45 having a surface that is continuous or unbroken and having two short journal-shafts supporting the printing-form at its ends, both of which are retractile therefrom, and means for retracting the same mounted upon the
50 journal-shafts proper, and a series of lateral guides, and suitable lifting devices, whereby the printing-forms may be mounted and dismantled, and mounted always accurately in the same relative position laterally with re-
55 spect to one another, substantially as described.

25. In a press, the roller 10, in combination with two short journal-shafts 14 having retractile inner extensions or hubs 12 and removable bearings 15, substantially as de-
65 scribed.

26. In a press, a tubular roller, in combi-

nation with two short journal-shafts supporting the roller at its ends, one of which journal-shafts is retractile from the roller, and means to retract the same, whereby the roller
70 may be mounted and dismantled and removable bearings for said retractile journal-shaft and means for locking said bearings in operative position, substantially as described.

27. In a press, a tubular printing-form, in
75 combination with two short journal-shafts supporting the printing-form at its ends, one of which journal-shafts is retractile from the roller and means to retract the same, whereby the printing-form may be mounted and dis-
80 mounted and removable bearings for said retractile journal-shaft and means for locking said bearings in operative position, substantially as described.

28. In a press, the roller 10, in combination
85 with two short journal-shafts 14 having retractile inner extensions or hubs 12, and suitable lifting devices, substantially as described.

29. In a press, a tubular roller, in combina-
90 tion with two short journal-shafts supporting the roller at its ends, one of which journal-shafts is retractile from the roller, and means to retract the same, whereby the roller may be mounted and dismantled, and suitable lift-
95 ing devices, substantially as described.

30. In a press, a tubular printing-form, in combination with two short journal-shafts supporting the printing-form at its ends, one of which journal-shafts is retractile from the
100 roller and means to retract the same, whereby the printing-form may be mounted and dismantled, and suitable lifting devices, substantially as described.

31. In a press, the roller 10, in combination
105 with two short journal-shafts 14 having retractile inner extensions or hubs 12, and adjustable lateral guides, substantially as described.

32. In a press, a tubular roller, in combina-
110 tion with two short journal-shafts supporting the roller at its ends, one of which journal-shafts is retractile from the roller, and means to retract the same, whereby the roller may be mounted and dismantled, and adjustable
115 lateral guides, substantially as described.

33. In a press, a tubular printing-form, in combination with two short journal-shafts supporting the printing-form at its ends, one of which journal-shafts is retractile from the
120 roller and means to retract the same, whereby the printing-form may be mounted and dismantled, and adjustable lateral guides, substantially as described.

In testimony whereof I have signed my
125 name to this specification in the presence of two subscribing witnesses.

EDWARD HETT.

Witnesses:

EDWIN SEGER,
GEO. W. MILLS, Jr.