

No. 662,869.

Patented Nov. 27, 1900.

E. HETT.
PRESS.

(Application filed Nov. 20, 1899.)

2 Sheets—Sheet 1.

(No Model.)

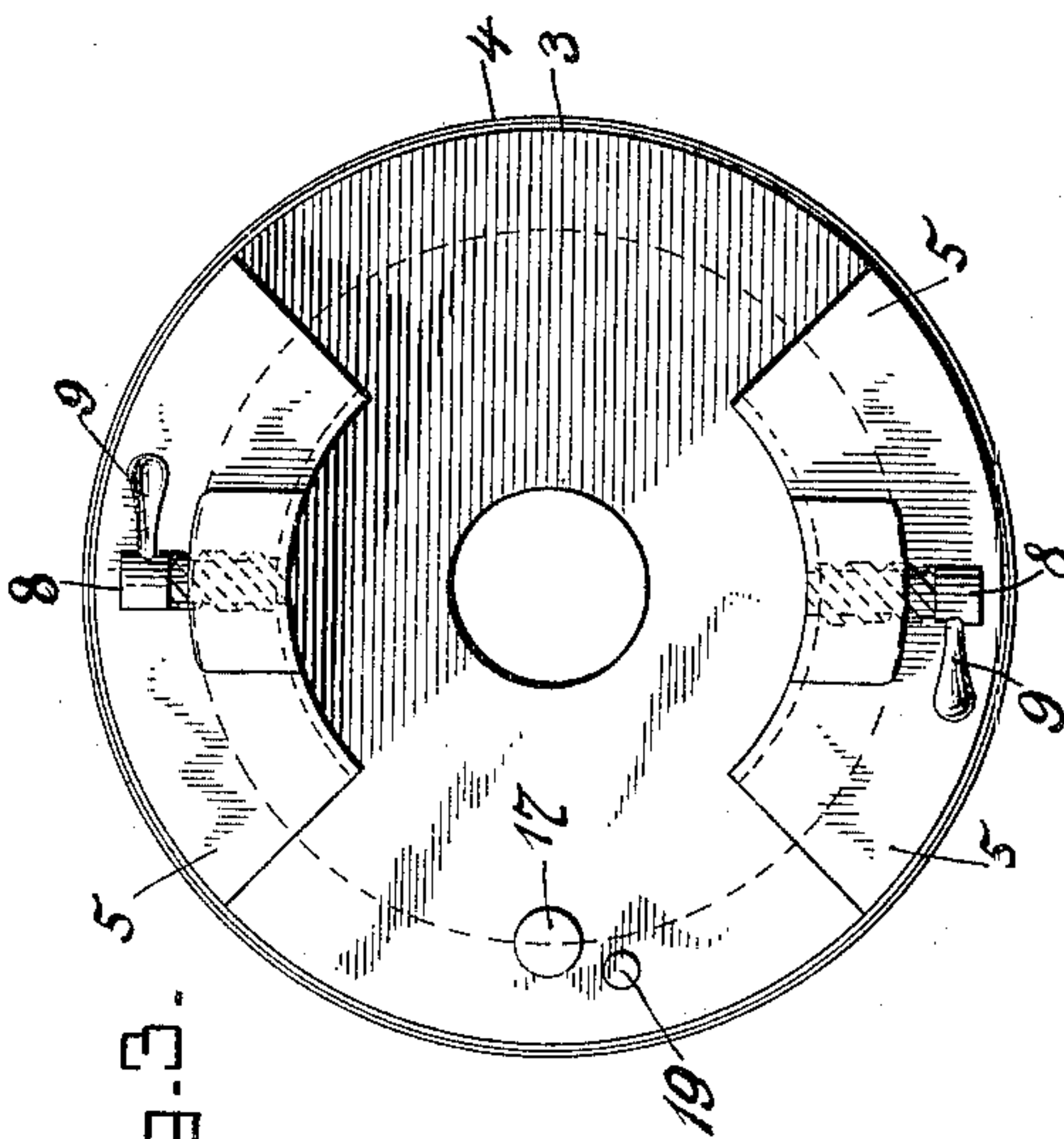
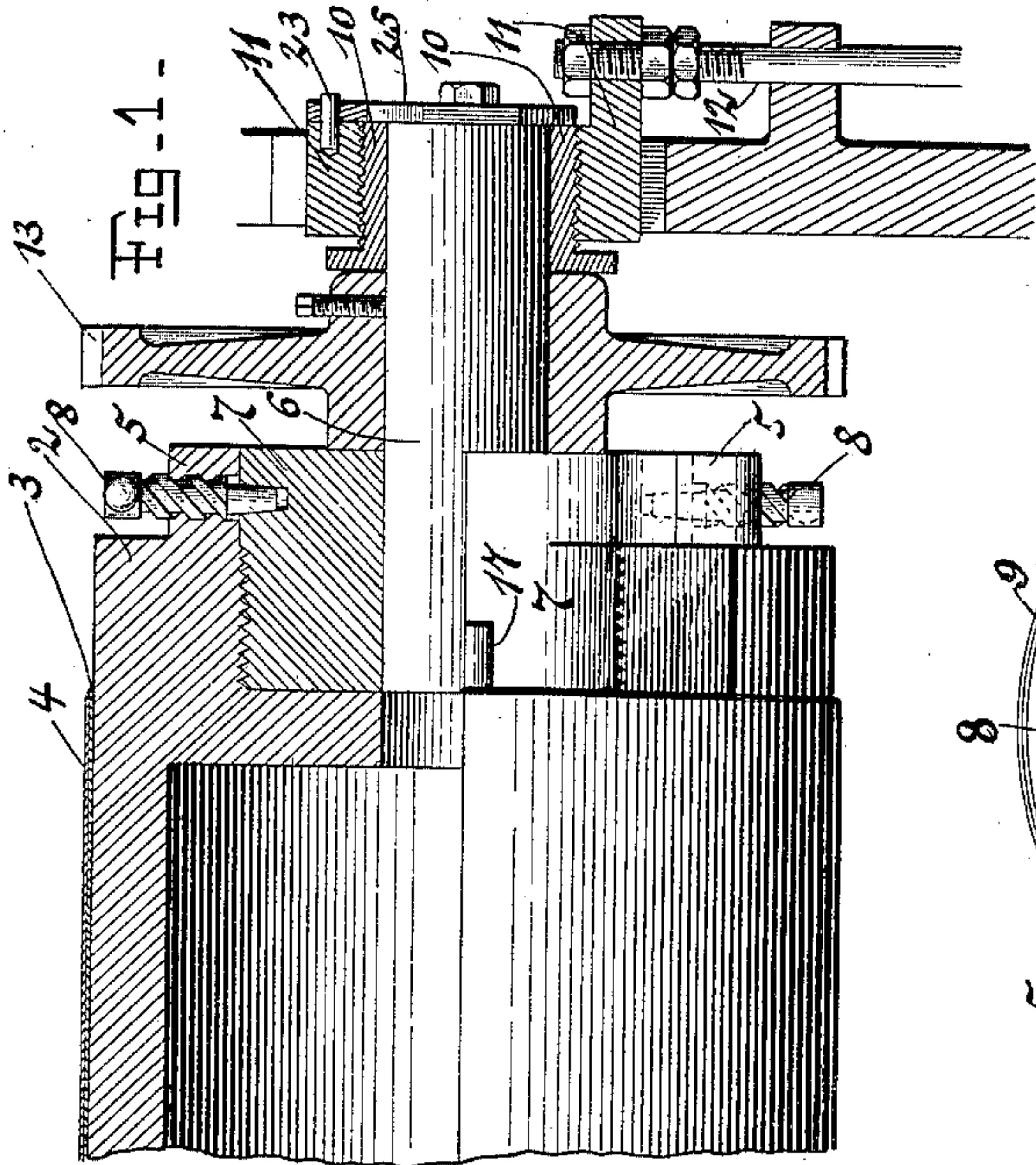


Fig. 3.

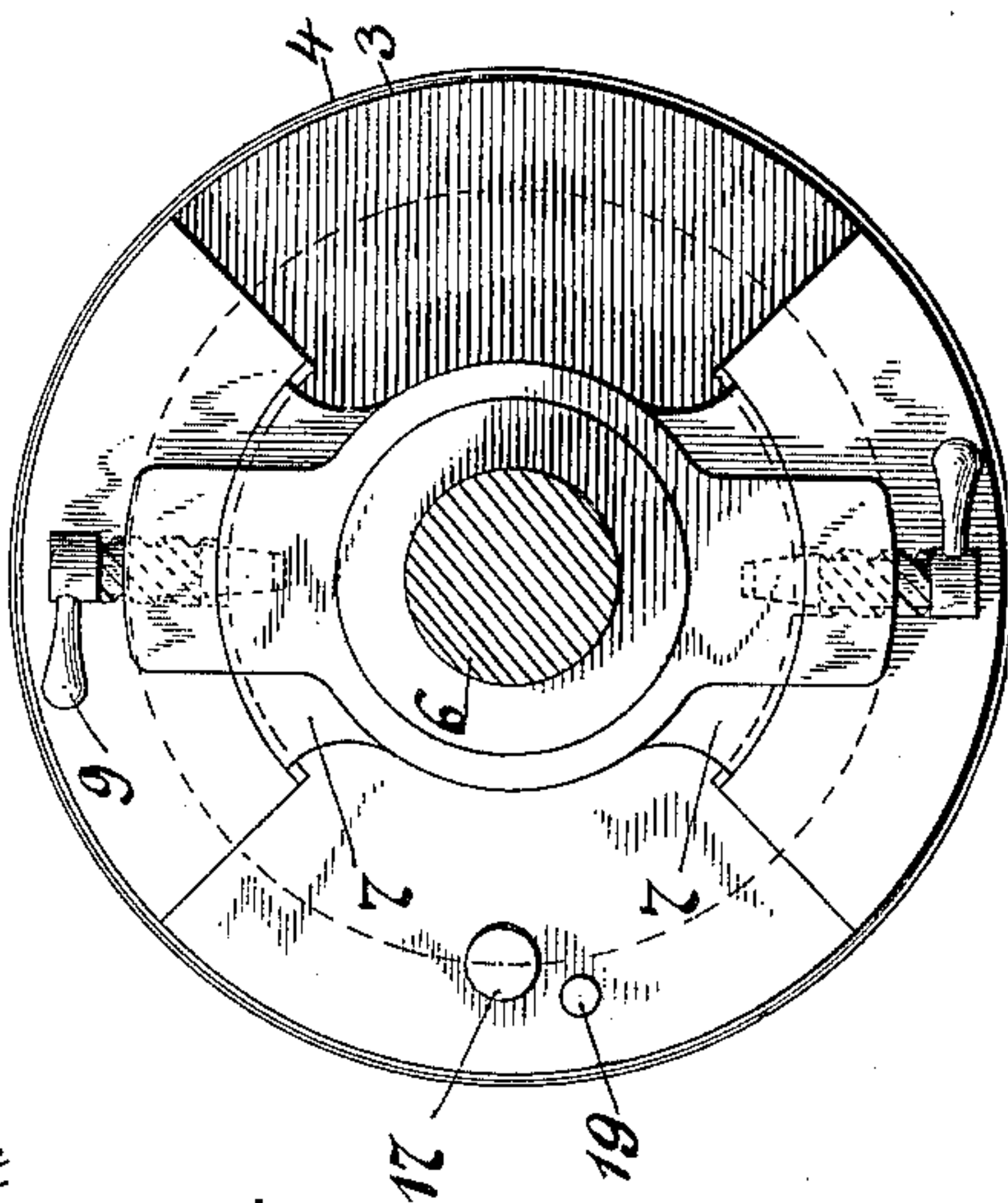
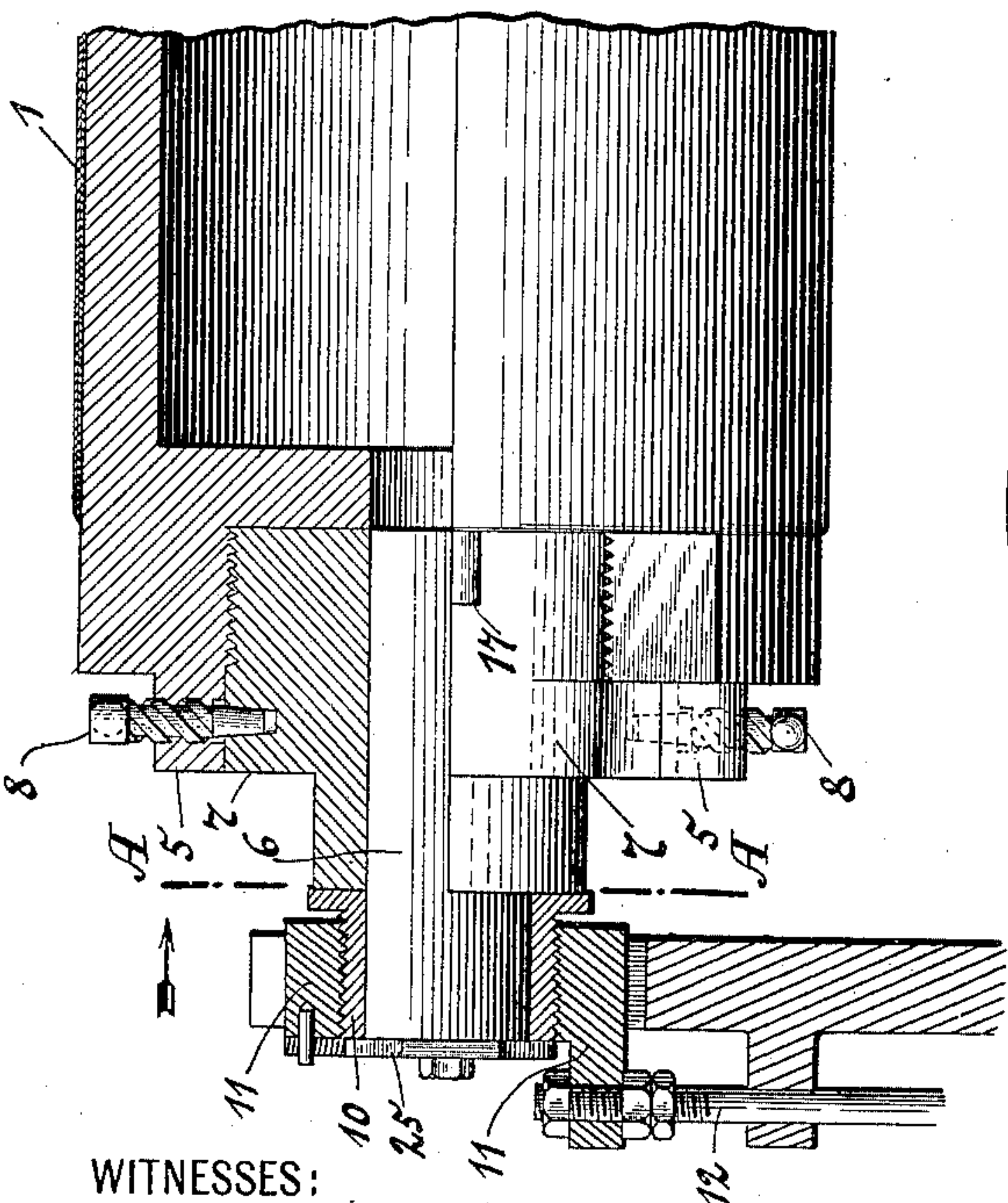


Fig. 2.

WITNESSES:

F. N. Roehrich
Spencer

INVENTOR

Edward Hett

BY

Kerny & Kerny
ATTORNEYS

No. 662,869.

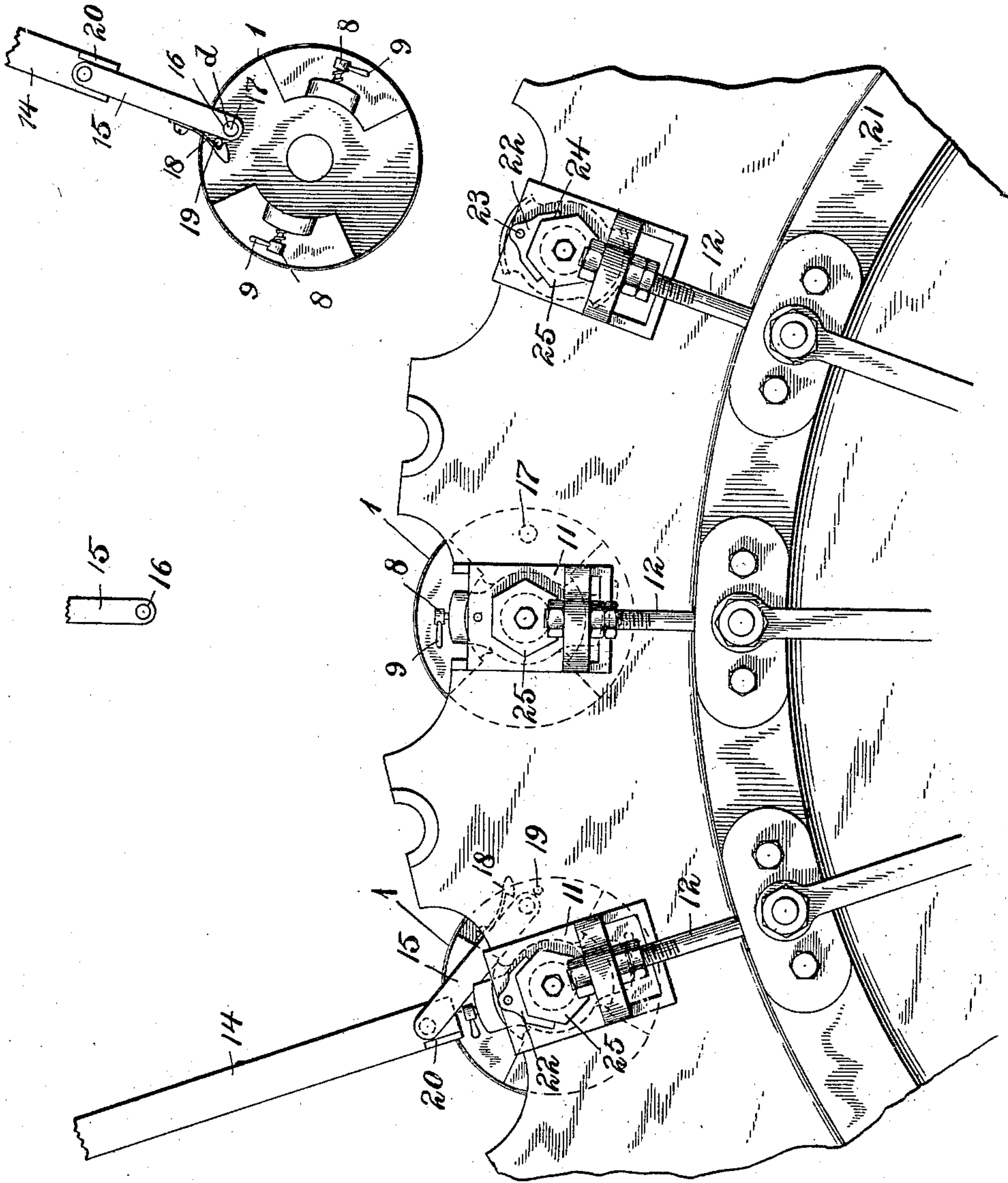
Patented Nov. 27, 1900.

E. HETT.
PRESS.

(Application filed Nov. 20, 1899.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

F. N. Roehrich
Edward Hett

4-119-4-

INVENTOR

Edward Hett

BY

Kempner & Kempner
ATTORNEYS

UNITED STATES PATENT OFFICE.

EDWARD HETT, OF NEW YORK, N. Y.

PRESS.

SPECIFICATION forming part of Letters Patent No. 662,869, dated November 27, 1900.

Application filed November 20, 1899. Serial No. 737,656. (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,) in the county of Richmond and State of New York, have invented a new and useful Improvement in Presses, of which the following is a specification.

My invention relates to presses, and particularly to printing-forms and their supports in presses.

It has for its object to simplify the means for inserting and removing printing-forms into or from their positions in a press, and particularly in a multicolor-press, and to render such insertion and removal more easy of accomplishment.

It consists of the novel devices herein shown and described.

In the drawings accompanying this specification and forming part hereof, and in which like reference characters in the different figures represent corresponding parts, I have shown and will now proceed to describe the preferred form or embodiment of my invention.

Referring to the drawings, Figure 1 is a view, partly in section and partly in elevation, of a printing-form and surrounding parts as the same are mounted in a press containing or embodying the preferred form of my improved devices. Fig. 2 is an end elevation of the printing-form shown in Fig. 1 viewed from the lines A A of Fig. 1, as indicated by the arrow. Fig. 3 is an end view of the printing-form removed from the press. Fig. 4 is a view of my improved devices in connection with a portion of a multicolor-press, being a side elevation of a part of the press.

Referring to the embodiment of my invention shown in the drawings, 1 is a printing-form. It may be of any suitable form and construction. As shown, it is composed of a hollow base 2, upon which a tube or shell 3 of copper has been driven and upon the outer surface of which a coating 4 of zinc has been electrolytically deposited. It is not essential to my invention, however, that the printing-form be constructed in this manner, as any suitable printing-form may be used having a printing-surface or a surface adapted to be transformed into a printing-surface by any

suitable means, or it may be merely a support for a printing-surface.

The printing-form or its support is provided at one or both ends with projections 5 5, 55 shaped like opposite sectors of a ring concentric with the center of the printing-form or its support. As shown, the printing-form 1 is provided with such projections 5 5 at each end, and the form of these projections is clearly shown in Fig. 3. I provide at one or both ends of the printing-form or its support as it is mounted in the press a shaft having oppositely-disposed segmental projections concentric with the center of the shaft and adapted to fit and turn within the ring-like sectors of the printing-form. As shown, I provide two short shafts 6 6, one at each end of the printing-form, each shaft provided with two segmental projections 7 7, oppositely disposed upon the shaft and concentric with it. These segmental projections 7 7 fit and turn within the ring-like sectors 5 5 of the printing-form, as clearly shown in Fig. 2. The ring-sectors are preferably interiorly screw-threaded, and the segments 7 are preferably exteriorly screw-threaded, as shown in Fig. 1, the screw-threads of the two parts intermeshing. I also preferably employ means for locking each ring-sector to its corresponding segment when the printing-form is in position to firmly hold the printing-form upon the shaft. The means shown consist of screw-threaded pins 8, fitting screw-threaded holes in ring-sectors 5 and adapted to take into holes in segments 7. By turning handle 9 these pins can be projected into or withdrawn from the holes in segment 7. Preferably the pitch of the screw-threads of pins 8 is made steep, so that a slight turning of the handle will throw the pins into or out of engagement with the holes of segments 7.

Shafts 6 are suitably mounted in bearings 10 and supporting-boxes 11, carried by pressure-bars 12 12. These pressure-bars are moved up and down to move the printing-form into or out of printing position and to regulate the pressure in the ordinary well-known manner.

My improved printing-form is inserted into position in the press by causing the ring-sectors of the printing-form to pass between the

segmental projections of the shafts, and then the printing-form is rotated substantially a quarter of a revolution, thus locking the printing-forms upon the shafts and making the united printing-form and shafts a complete unit for the purposes of printing. For further security in locking, handles 9 are then turned to throw pins 8 into the holes in segments 7. The printing-form is now ready for printing. Rotation is imparted to the completed printing-form and shaft through gear-wheel 13, secured to one of the shafts 6 and driven from any suitable source of power.

The printing-form is removed from the shafts and from the press by withdrawing pins 8 and rotating printing-form 1 substantially a quarter of a revolution until ring-sectors 5 are freed from segments 7, whereupon the printing-form may be lifted away from the shafts and be moved out of the press.

In Fig. 4 I have shown my improved devices as applied to a multicolor-printing press, to which they are peculiarly applicable and in which they are particularly serviceable. In Fig. 4 two of the printing-forms are shown in working position in the press, one of them—the one to the left of this figure—in a position ready to be removed. The printing-form to the right, as shown in said figure, is represented as removed from working position either in position to be inserted into position in the press or to be removed from the press. Any suitable means may be used for inserting or removing the printing-tubes. Preferably I employ a rod 14, moving in a radial direction and adapted to move the printing-form radially inward or outward. At its inward end it is provided with a swinging arm 15, pivoted to the rod. At the inner end of arm 15 a hole 16 is adapted to fit over a pin 17, projecting from the end of the printing-form, as shown in the printing-tube at the right of Fig. 4. A spring-catch 18, also secured near the end of arm 15, is adapted to take over another pin 19, projecting from the end of printing-tube 1, contiguous to pin 17. 20 is a stop on one side of the end of rod 14 to prevent arm 15 from swinging in that direction beyond a certain point. When arm 15 engages with pin 17 and catch 18 with pin 19 and arm 15 with stop 20, the printing-form 1 is held radially in line with rod 14 and is prevented from swinging on pin 17 and hanging directly beneath that pin. By these means the printing-forms can be inserted or withdrawn into or from working position in the press on radial lines. Rod 14 and arm 15 also assist in the quarter-revolution of the printing-form during its insertion or removal. For example, in removing a tube the arm 15 is secured at its end to pins 17 and 19 in the manner above described, when the same are in the position shown at the left in Fig. 4. As rod 14 is withdrawn tube 1 will first be rotated a quarter of a revolution, which frees it from the segments 7 of the shafts 6, and

then it will be withdrawn radially outward from the press.

21 is the impression-drum of the multicolor-press. (Shown in Fig. 4.)

In order to prevent the rotation of shafts 6 during the insertion or removal of a printing-tube, I preferably employ a lock for temporarily holding these shafts and preventing their rotation at such times. The lock shown consists of a locking-piece 22, which can be temporarily secured by means of pin 23 to supporting-boxes 11. Locking-piece 22 has sides 24, which embrace the sides of an hexagonal disk 25, secured to the end of each shaft. These disks 25 also act as stops to prevent the bearings 10 from moving endwise from off the shafts.

By means of my improved devices printing-forms can be readily inserted into or removed from their seats in a press and can be securely locked in position in the press.

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

1. In a press, the combination of a printing-form or a support therefor provided at one end with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a shaft at said end of the printing-form having oppositely-disposed segmental projections concentric with the center of the shaft and adapted to fit and turn within the ring-like sectors of the printing-form to hold the printing-form upon the shaft, all arranged and adapted so that the ring-sectors of the printing-form may pass between the segmental projections of the shaft to enable the printing-form to be inserted or removed from the shaft and the segmental projections and the ring-sectors may be turned one within the other to hold the printing-form upon the shaft.

2. In a press, the combination of a printing-form or a support therefor provided at its ends with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a shaft at each end of the printing-form having oppositely-disposed segmental projections concentric with the center of the shaft and adapted to fit and turn within the ring-like sectors of the printing-form to hold the printing-form upon the shafts, all arranged and adapted so that the ring-sectors of the printing-form may pass between the segmental projections of the shafts to enable the printing-form to be inserted or removed from the shaft and the segmental projections and the ring-sectors may be turned one within the other to hold the printing-form upon the shafts.

3. In a press, the combination of a printing-form or a support therefor provided at one end with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a shaft at said end of the printing-form having oppositely-disposed segmental projections concentric with the center

of the shaft and adapted to fit and turn within the ring-like sectors of the printing-form to hold the printing-form upon the shaft, all arranged and adapted so that the ring-sectors of the printing-form may pass between the segmental projections of the shaft to enable the printing-form to be inserted or removed from the shaft and the segmental projections and the ring-sectors may be turned one within the other to hold the printing-form upon the shaft, and means for locking a ring-sector to a segmental projection to hold the printing-form firmly upon the shaft and for unlocking them.

4. In a press, the combination of a printing-form or a support therefor provided at its ends with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a shaft at each end of the printing-form having oppositely-disposed segmental projections concentric with the center of the shaft and adapted to fit and turn within the ring-like sectors of the printing-form to hold the printing-form upon the shafts, all arranged and adapted so that the ring-sectors of the printing-form may pass between the segmental projections of the shafts to enable the printing-form to be inserted in or removed from the shafts, and the segmental projections and the ring-sectors may be turned one within the other to hold the printing-form upon the shafts, and means for locking the ring-sectors to the segmental projections to hold the printing-form firmly upon the shafts and for unlocking them.

5. In a press, the combination of a printing-form or a support therefor provided at its ends with projections shaped like opposite sectors of a ring concentric with the center of the printing-form and interiorly screw-threaded, a shaft at each end of the printing-form having oppositely-disposed segmental projections concentric with the center of the shaft, exteriorly screw-threaded and adapted to fit and turn within the screw-threads of the ring-like sectors of the printing-form to hold the printing-form upon the shafts, all arranged and adapted so that the ring-sectors of the printing-form may pass between the segmental projections of the shafts to enable the printing-form to be inserted upon or removed from the shafts and the segmental projections and the ring-sectors may be turned one within the other, the screw-threads of the two parts intermeshing, to hold the printing-form upon the shafts.

6. In a press, the combination of a printing-form or a support therefor provided at its ends with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a shaft at each end of the printing-form having oppositely-disposed segmental projections concentric with the center of the shaft and adapted to fit and turn within the ring-like sectors of the printing-form to hold the printing-form upon the shafts, all arranged and adapted so that the ring-sectors

of the printing-form may pass between the segmental projections of the shafts to enable the printing-form to be inserted in or removed from the shaft and the segmental projections and the ring-sectors may be turned one within the other to hold the printing-form upon the shafts, means for locking the ring-sectors to the segmental projections to hold the printing-form firmly upon the shafts and for unlocking them, and means for rotating the united printing-form and shafts.

7. In a press, the combination of a printing-form or a support therefor provided at one end with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a shaft at said end of the printing-form having oppositely-disposed segmental projections concentric with the center of the shaft and adapted to fit and turn within the ring-like sectors of the printing-form to hold the printing-form upon the shaft, all arranged and adapted so that the ring-sectors of the printing-form may pass between the segmental projections of the shaft to enable the printing-form to be inserted or removed from the shaft and the segmental projections and the ring-sectors may be turned one within the other to hold the printing-form upon the shaft, and a lock for temporarily preventing the shaft from rotating during the insertion or removal of the printing form.

8. In a press, the combination of a printing-form or a support therefor provided at its ends with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a shaft at each end of the printing-form having oppositely-disposed segmental projections concentric with the center of the shaft and adapted to fit and turn within the ring-like sectors of the printing-form to hold the printing-form upon the shafts, all arranged and adapted so that the ring-sectors of the printing-form may pass between the segmental projections of the shafts to enable the printing-form to be inserted in or removed from the shaft and the segmental projections and the ring-sectors may be turned one within the other to hold the printing-form upon the shafts, and a lock for temporarily preventing the shafts from rotating during the insertion or removal of the printing-form.

9. In a multicolor-press the combination of an impression-drum, a series of printing-forms or supports therefor arranged concentrically around the periphery of the drum, each printing-form provided at one end with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a series of shafts, one for each printing-form, each shaft having oppositely-disposed segmental projections concentric with the center of the shaft and adapted to fit and turn within the ring-like sectors of the printing-form to hold the printing-form upon the shafts, all arranged and adapted so that the ring-sectors of the printing-forms may pass between the segmental projections of the shafts to enable

the printing-forms to be inserted or removed from the shafts and the segmental projections and the ring-sectors may be turned one within the other to hold the printing-forms upon the shafts.

10. In a multicolor-press the combination of an impression-drum, a series of printing-forms or supports therefor arranged concentrically around the periphery of the drum, each printing-form provided at its ends with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a series of shafts one at each end of each printing-form, having oppositely-disposed segmental projections concentric with the center of the shafts and adapted to fit and turn within the ring-like sectors of the printing-forms, to hold the printing-forms upon the shafts, all arranged and adapted so that the ring-sectors of the printing-forms may pass between the segmental projections of the shafts to enable the printing-forms to be inserted or removed from the shafts and the segmental projections and the ring-sectors may be turned one within the other to hold the printing-forms upon the shafts.

11. In a multicolor-press the combination of an impression-drum, a series of printing-forms or supports therefor arranged concentrically around the periphery of the drum, each printing-form provided at one end with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a series of shafts, one for each printing-form, having oppositely-disposed segmental projections concentric with the center of the shaft and adapted to fit and turn within the ring-like sectors of the printing-form to hold the printing-form upon the shafts, all arranged and adapted so that the ring-sectors of the printing-forms may pass between the segmental projections of the shafts to enable the printing-forms to be inserted or removed from the shafts and the segmental projections and the ring-sectors may be turned one within the other to hold the printing-forms upon the shafts, and means for locking each ring-sector to its corresponding segmental projection to hold the printing-forms firmly upon the shafts and means for unlocking them.

12. In a multicolor-press the combination of an impression-drum, a series of printing-forms or supports therefor arranged concentrically around the periphery of the drum, each printing-form provided at its ends with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a series of shafts one at each end of each printing-form, having oppositely-disposed segmental projections concentric with the center of the shafts and adapted to fit and turn within the ring-like sectors of the printing-forms, to hold the printing-forms upon the shafts, all arranged and adapted so that the ring-sectors of the printing-forms may pass between the segmental projections of the shafts to enable the printing-forms to be inserted upon or

withdrawn from the shafts and the segmental projections and the ring-sectors may be turned one within the other to hold the printing-forms upon the shafts, and means for locking the ring-sectors to the segmental projections to hold the printing-forms firmly upon the shafts and for unlocking them.

13. In a multicolor-press the combination of an impression-drum, a series of printing-forms or supports therefor arranged concentrically around the periphery of the drum, each printing-form provided at its ends with projections shaped like opposite sectors of a ring concentric with the center of the printing-form and interiorly screw-threaded, a series of shafts one at each end of each printing-form, having oppositely-disposed segmental projections concentric with the center of the shafts exteriorly screw-threaded and adapted to fit and turn within the screw-threads of the ring-like sectors of the printing-forms, to hold the printing-forms upon the shafts, all arranged and adapted so that the ring-sectors of the printing-forms may pass between the segmental projections of the shafts to enable the printing-forms to be inserted or removed from the shafts and the segmental projections and the ring-sectors may be turned one within the other, the screw-threads of the two parts intermeshing to hold the printing-forms upon the shaft.

14. In a multicolor-press the combination of an impression-drum, a series of printing-forms or supports therefor arranged concentrically around the periphery of the drum, each printing-form provided at its ends with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a series of shafts one at each end of each printing-form, having oppositely-disposed segmental projections concentric with the center of the shafts and adapted to fit and turn within the ring-like sectors of the printing-forms, to hold the printing-forms upon the shafts, all arranged and adapted so that the ring-sectors of the printing-forms may pass between the segmental projections of the shafts to enable the printing-forms to be inserted or withdrawn from the shafts and the segmental projections and the ring-sectors may be turned one with the other to hold the printing-forms upon the shafts, means for locking the ring-sectors to the segmental projections to hold the printing-forms firmly upon the shafts and for unlocking them, and means for rotating the different united printing-forms and shafts.

15. In a multicolor-press the combination of an impression-drum, a series of printing-forms or supports therefor arranged concentrically around the periphery of the drum, each printing-form provided at one end with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a series of shafts, one for each printing-form, having oppositely-disposed segmental projections concentric with the center of the shaft and adapted to fit and turn within the ring-like sec-

tors of the printing-form to hold the printing-form upon the shafts, all arranged and adapted so that the ring-sectors of the printing-forms may pass between the segmental projections of the shafts to enable the printing-forms to be inserted or removed from the shafts and the segmental projections and the ring-sectors may be turned one within the other to hold the printing-forms upon the shafts, and a lock for each shaft for temporarily preventing it from rotating during the insertion or removal of the printing-form.

16. In a multicolor-press the combination of an impression-drum, a series of printing-forms or supports therefor arranged concentrically around the periphery of the drum, each printing-form provided at its ends with projections shaped like opposite sectors of a ring concentric with the center of the printing-form, a series of shafts one at each end of each printing-form, having oppositely-disposed segmental projections concentric with the center of the shafts and adapted to fit and turn within the ring-like sectors of the printing-forms, to hold the printing-forms upon the shafts, all arranged and adapted so that the ring-sectors of the printing-forms may pass between the segmental projections of the shafts to enable the printing-forms to be inserted in or removed from the shafts and the segmental projections

and the ring-sectors may be turned one within the other to hold the printing-forms upon the shafts, and a lock for each shaft for temporarily preventing it from rotating during the insertion or removal of its printing-form.

17. In a multicolor-press the combination with an impression-drum and a series of printing-forms arranged concentrically around the periphery of the drum, a radial rod for moving printing-forms radially outward from the drum or inward toward it, to aid in the removal or insertion of printing-forms in the press, a swinging arm mounted on the end of the radial arm, a stop on the rod to prevent the arm from moving in one direction beyond the line of the rod, and connections at the end of the radial arm for engaging with two points upon the printing-form to hold the printing-form in the radial line along which the printing-form is to move inward or outward as it is inserted or removed from the press.

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

EDWARD HETT.

Witnesses:

EDWIN SEGER,
GEO. W. MILLS, Jr.