No. 662,866.

Patented Nov. 27, 1900.

E. HETT.

PRESS.

(Application filed Nov. 20, 1899.)

(No Model.)

2 Sheets—Sheet 1.

Fig. 1.

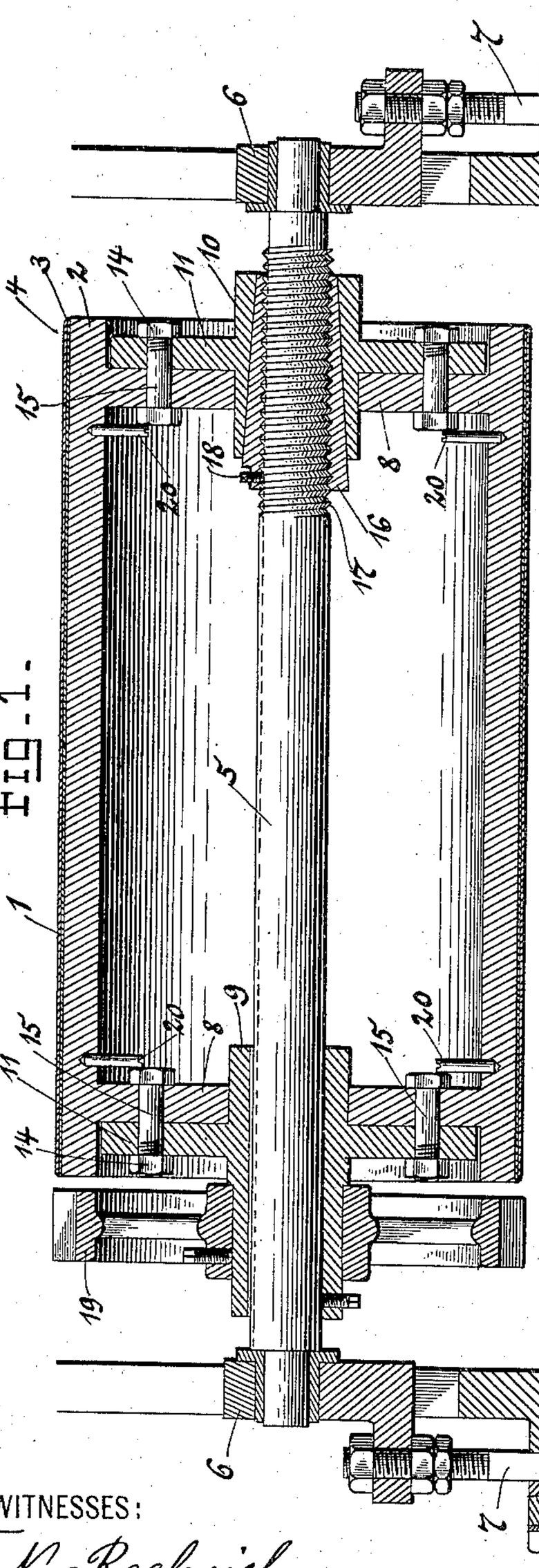


Fig. 2.

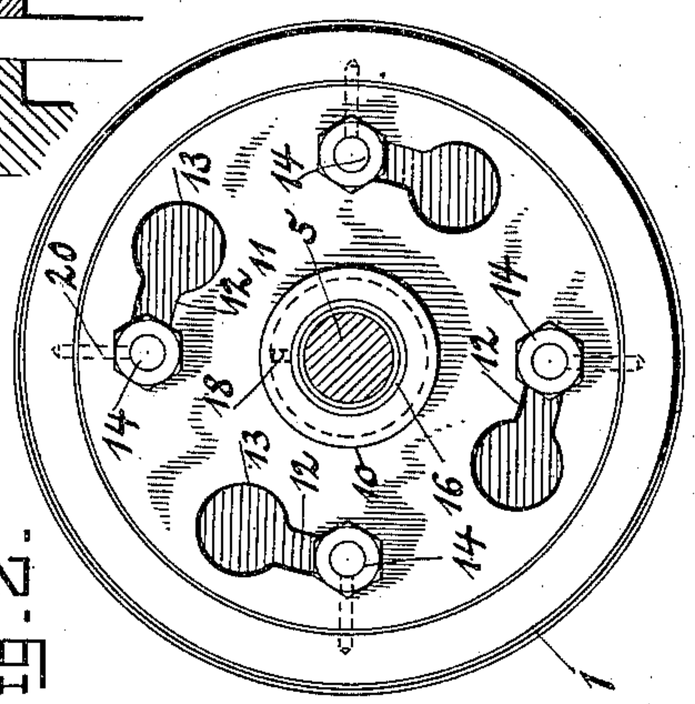
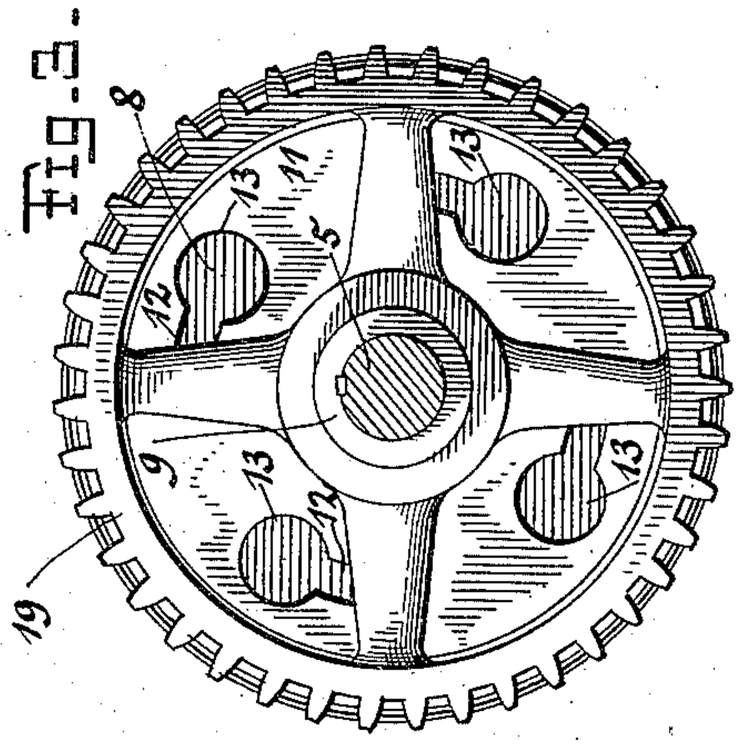


Fig. 3.



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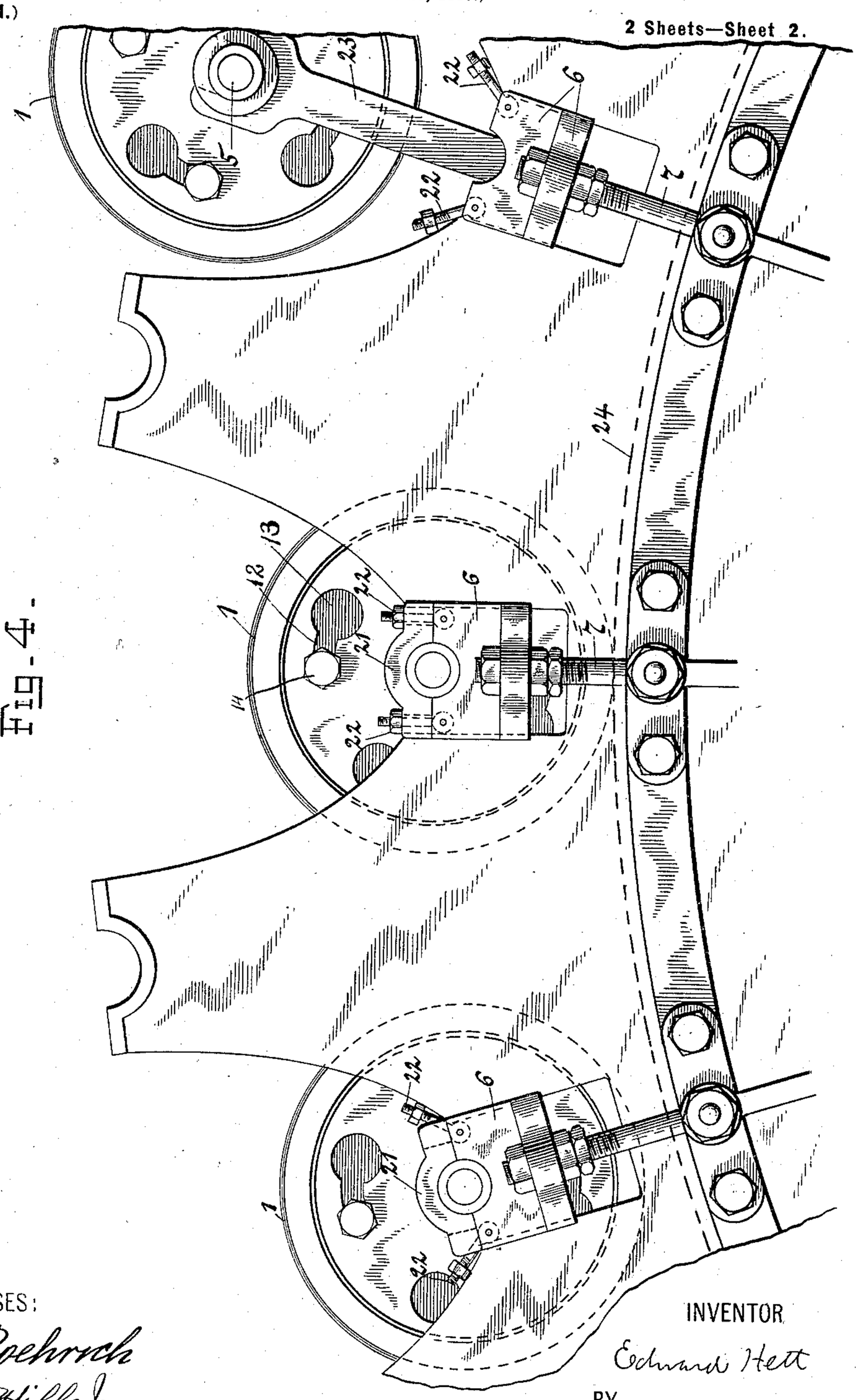
2 Sheets—Sheet 2.

Fig. 4.



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UNITED STATES PATENT OFFICE.

EDWARD HETT, OF NEW YORK, N. Y.

PRESS.

SPECIFICATION forming part of Letters Patent No. 662,866, dated November 27, 1900.

Application filed November 20, 1899. Serial No. 737,653. (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 Presses, of which the following is a specification.

My invention relates to presses, and particularly to printing-forms or their form-supports and means for mounting the same in the press.

It has for its objects to provide an improved means for mounting printing-forms or their form-supports in a press, and especially in a multicolor-printing press to enable the printing-forms or their supports to be readily removed from their shafts in the press or to be replaced thereon; also, to means for easily and reliably adjusting the position of the printing-forms or their supports longitudinally upon their shafts in the press.

It consists of the novel devices herein shown and described.

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

Referring to the drawings, Figure 1 is a vertical section through a printing-form containing the preferred form of my improved devices. Fig. 2 is a face view of the left-hand end of the cylinder shown in Fig. 1 with the outer frame of the press and the supporting-box and connections removed. Fig. 3 is a similar view of the other end of the printing-form shown in Fig. 1 with the outer frame of the press and the supporting-box and connections removed. Fig. 4 shows a part of a multicolor-printing press, showing a plurality of my improved printing-forms mounted as shown in Fig. 1, two of the printing-forms there shown being in working position and the other moved outward from its working position preparatory to removal from the press.

1 represents a cylindrical printing-form to which my improved devices are applied. As here shown, it is composed of a hollow cylindrical base 2 of substantial pressure-resisting thickness, made of any suitable material, preferably of aluminium, with an outer tube or shell 3 of copper driven permanently on the base 2 or placed thereon in any suitable way, and an outer coating 4 of electrolytically-deposited zinc, the surface of the latter being either a printing-surface or adapted to be transformed into a printing-surface.

In the drawings my invention is shown as applied to a finished printing-form; but it is equally applicable to a form-support upon which a printing-form of any suitable character may be placed in any suitable way.

5 is a shaft for carrying the printing-form or form-support. As shown, it is adapted to be permanently placed in a press, although adapted to be raised and lowered with the printing-form, as shown in Fig. 4, for the purpose of allowing the printing-form or form-support, or both, to be removed from the press or inserted therein. Shaft 5 is mounted in suitable bearings in supporting-boxes 6, carried by pressure-rods 7. These pressure-rods are adapted to be moved up or down by any suitable means for moving the printing-forms into and out of printing position and for regulating the pressure. As this mechanism forms no part of the present invention it is not shown in detail and will not be further described.

In the form shown in the drawings the printing-form or its support is provided with depending flanges 8 8, provided with holes for bolts. Shaft 5 is provided at one end with a supporting hub or collar 9 and at the other end with a supporting hub or collar 10. Each of these hubs is shown as provided with a flange 11. These flanges 11 have circumferentially elongated or slotted bolt-holes 12, which are enlarged at one end, as at 13, beyond the size of the outer bolt-head 14 of bolts 15. I have shown one of the hubs—namely, hub 10—as tapered internally and carried on an externally-tapered sleeve 16. This sleeve 16 is preferably adjustable along shaft 5, and for this purpose it is screw-threaded internally so as to mesh and move in the screw-threads 17 on the exterior of shaft 5. It is locked in any set position by set-screw 18. Hub 9 can, if desired, either in place of hub 10 or conjointly with it, be similarly tapered internally and be carried on a similarly-tapered sleeve adjustable along the shaft. By these

means the longitudinal adjustment of the printing-form or its support on shaft 5 can be accurately regulated.

When it is desired to remove a printing-form or its support from the shaft, one of each set of bolt-heads is unloosened and the printing-form or its support is rotated slightly, so as to bring the bolt-heads opposite the enlarged portions 13 of the bolt-holes, whereupon the printing-form or its support can be slipped off from shaft 5. In the form of my device shown in Fig. 1 hub 10 and flange 11 are slipped off with the printing-form and can then be removed from the printing-form or not, as desired. A printing-form or its support is placed upon the shaft in a like manner, the steps being taken in the reverse order.

19 is a gear-wheel secured to shaft 5 through hub 9 for imparting rotation to the printing-form. It may be driven in any desired manner. In the form shown in the drawings hub 9 is made fast to shaft 5. Pins 20 are for the purpose of locking the inner heads of the bolts in their position.

In Fig. 4 I have shown a part of a multi-color-press containing a plurality of the printing-forms mounted according to my improved devices. The central printing-form is shown as locked in working position. The printing-form to the left in said figure is shown with the top 21 of the supporting-boxes unlocked and ready for removal, the locking-screws 22 having been swung out of their locking position. The right-hand printing-form shown in Fig. 4 is shown as lifted up out of its working position on arms 23 preparatory to removal from the press. These arms 23 may be lifted by any suitable mechanism.

Any suitable printing-form of any suitable shape and construction may be used with my improved devices, although I prefer to use the kind shown in the drawings, having a base of aluminium of substantial pressure-resisting thickness with a shell of copper and a coating of electrolytically-deposited zinc, the surface of the latter being circumferentially continuous or unbroken. Other changes and modifications may be made in the form of my devices shown in the drawings without departing from my invention, the essentials of which are set forth in the claims herein.

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

1. In a press, a printing-form or form-support in combination with a carrying-shaft having at one end a supporting hub or collar adapted to be bolted to the printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, whereby the printing-form or form-support may be readily mounted on and dismounted from the shaft, substantially as described.

2. In a press, a printing-form or form-support in combination with a carrying-shaft having at one end a supporting hub or collar adapted to be bolted to the printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, the hub or collar being tapered internally and carried on an externally-tapered sleeve on the shaft, whereby the printing-form or form-support may be readily mounted on and dismounted from the shaft and reliably to the same position, substantially as described.

3. In a press, a printing-form or form-support in combination with a carrying-shaft having at one end a supporting hub or collar adapted to be bolted to the printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, the hub or collar being tapered internally and carried on an externally-tapered sleeve that is adjustable on the shaft, whereby the printing-form or form-support may be readily mounted on and dismounted from the shaft and reliably to the same adjustable position, substantially as described.

4. In a press, a hollow printing-form or form-support of substantial pressure-resisting thickness in combination with a carrying-shaft having at one end a supporting hub or collar adapted to be bolted to an internally-depending flange of the printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, whereby the printing-form or form-support may be readily mounted on and dismounted from the shaft, substantially as described.

5. In a press a hollow printing-form or form-support of substantial pressure-resisting thickness and the surface of which is continuous or unbroken, in combination with a carrying-shaft having at one end a supporting hub or collar adapted to be bolted to an internally-depending flange of the printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, whereby the printing-form or form-support may be readily mounted on and dismounted from the shaft, substantially as described.

6. In a press, a cylindrical printing-form or form-support in combination with a carrying-shaft having at one end a supporting hub or collar adapted to be bolted to the cylindrical printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, whereby the printing-form or form-support may be readily mounted on and dismounted from the shaft, substantially as described.

7. In a press, a cylindrical printing-form or form-support in combination with a carrying-shaft having at one end a supporting hub or

collar adapted to be bolted to the cylindrical printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, the hub or collar being tapered internally and carried on an externally-tapered sleeve on the shaft, whereby the printing-form or form-support may be readily mounted on and dismounted from the shaft and reliably to the same position, substantially as described.

8. In a press, a cylindrical printing-form or form-support in combination with a carrying-shaft having at one end a supporting hub or collar adapted to be bolted to the cylindrical printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, the hub or collar being tapered internally and carried on an externally-tapered sleeve that is adjustable on the shaft, whereby the printing-form or form-support may be readily mounted on and dismounted from the shaft and reliably to the same adjustable position, substantially as described.

9. In a press, a hollow cylindrical printing-form or form-support of substantial pressure-resisting thickness in combination with a carrying-shaft having at one end a supporting hub or collar adapted to be bolted to an internally-depending flange of the cylindrical printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, whereby the printing-form or form-support may be readily mounted on and dismounted from the shaft, substantially as described.

10. In a press a hollow cylindrical printing-form or form-support of substantial pressure-resisting thickness and the surface of which is continuous or unbroken, in combination with a carrying-shaft having at one end a supporting hub or collar adapted to be bolted to an internally-depending flange of the cylindrical printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, whereby the printing-form or form-support may be readily mounted on and dismounted from the shaft, substantially as described.

11. In a multicolor-press, the combination of an impression-drum, a series of printing-forms or form-supports arranged circumferentially around the impression-drum, carrying-shafts for the printing-forms or form-supports, each carrying-shaft having at one end a supporting hub or collar adapted to be bolted to the printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, whereby the printing-forms or form-supports may be readily mounted on and dismounted from the shaft, substantially as described.

12. In a multicolor-press, the combination of an impression-drum, a series of printing-forms or form-supports arranged circumferentially around the impression-drum, carrying-shafts for the printing-forms or form-supports, each carrying-shaft having at one end a supporting hub or collar adapted to be bolted to the printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, the hub or collar being tapered internally and carried on an externally-tapered sleeve on the shaft, whereby the printing-forms or form-supports may be readily mounted on and dismounted from the shaft and reliably to the same position, substantially as described.

13. In a multicolor-press, the combination of an impression-drum, a series of printing-forms or form-supports arranged circumferentially around the impression-drum, carrying-shafts for the printing-forms or form-supports, each carrying-shaft having at one end a supporting hub or collar adapted to be bolted to the printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, the hub or collar tapered internally and carried on an externally-tapered sleeve that is adjustable on the shaft, whereby the printing-forms or form-supports may be readily mounted on and dismounted from the shaft and reliably to the same adjustable position, substantially as described.

14. In a multicolor-press, the combination of an impression-drum, a series of hollow printing-forms or form-supports of substantial pressure-resisting thickness arranged circumferentially around the impression-drum, carrying-shafts for the printing-forms or form-supports, each having at one end a supporting hub or collar adapted to be bolted to an internally-depending flange of the printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, whereby the printing-forms or form-supports may be readily mounted on and dismounted from the shaft, substantially as described.

15. In a multicolor-press, the combination of an impression-drum, a series of hollow printing-forms or form-supports of substantial pressure-resisting thickness and the surfaces of which are continuous or unbroken, arranged circumferentially around the impression-drum, carrying-shafts for the printing-forms or form-supports, each carrying-shaft having at one end a supporting hub or collar adapted to be bolted to an internally-depending flange of the printing-form or form-support, the hub or collar having circumfer-

entially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, whereby the printing-form or form-support may be readily mounted on and dismounted from the shaft, substantially as described.

16. In a multicolor-press, the combination of an impression-drum, a series of cylindrical printing-forms or form-supports arranged circumferentially around the impression-drum, carrying-shafts for the printing-forms or form-supports, each carrying-shaft having at one end a supporting hub or collar adapted to be bolted to the cylindrical printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, whereby the printing-forms or form-supports may be readily mounted on and dismounted from the shaft, substantially as described.

17. In a multicolor-press, the combination of an impression-drum, a series of cylindrical printing-forms or form-supports arranged circumferentially around the impression-drum, carrying-shafts for the printing-forms or form-supports, each carrying-shaft having at one end a supporting hub or collar adapted to be bolted to the cylindrical printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end and beyond the size of the outer bolt-head or securing-nut, the hub or collar being tapered internally and carried on an externally-tapered sleeve on the shaft, whereby the printing-forms or form-supports may be readily mounted on and dismounted from the shaft and reliably to the same position, substantially as described.

18. In a multicolor-press, the combination of an impression-drum, a series of cylindrical printing-forms or form-supports arranged circumferentially around the impression-drum, carrying-shafts for the printing-forms or form-supports, each carrying-shaft having at one end a supporting hub or collar adapted to be bolted to the cylindrical printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, the hub or collar tapered internally and carried on an externally-tapered sleeve that is adjustable on the shaft, whereby the printing-forms or form-supports may be readily mounted on and dismounted from the shaft and reliably to the same adjustable position, substantially as described.

19. In a multicolor-press, the combination of an impression-drum, a series of hollow cylindrical printing-forms or form-supports of substantial pressure-resisting thickness arranged circumferentially around the impression-drum, carrying-shafts for the printing-forms or form-supports, each having at one end a supporting hub or collar adapted to be bolted to an internally-depending flange of the cylindrical printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, whereby the printing-forms or form-supports may be readily mounted on and dismounted from the shaft, substantially as described.

20. In a multicolor-press, the combination of an impression-drum, a series of hollow cylindrical printing-forms or form-supports of substantial pressure-resisting thickness and the surfaces of which are continuous or unbroken, arranged circumferentially around the impression-drum, carrying-shafts for the printing-forms or form-supports, each carrying-shaft having at one end a supporting hub or collar adapted to be bolted to an internally-depending flange of the cylindrical printing-form or form-support, the hub or collar having circumferentially elongated or slotted bolt-holes enlarged at one end beyond the size of the outer bolt-head or securing-nut, whereby the printing-form or form-support may be readily mounted on and dismounted from the shaft, substantially as described.

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.