H. C. GAMMETER.

PRINTING MECHANISM.

APPLICATION FILED JULY 30, 1910.

999,023.

Patented July 25, 1911.

2 SHEETS—SHEET 1.

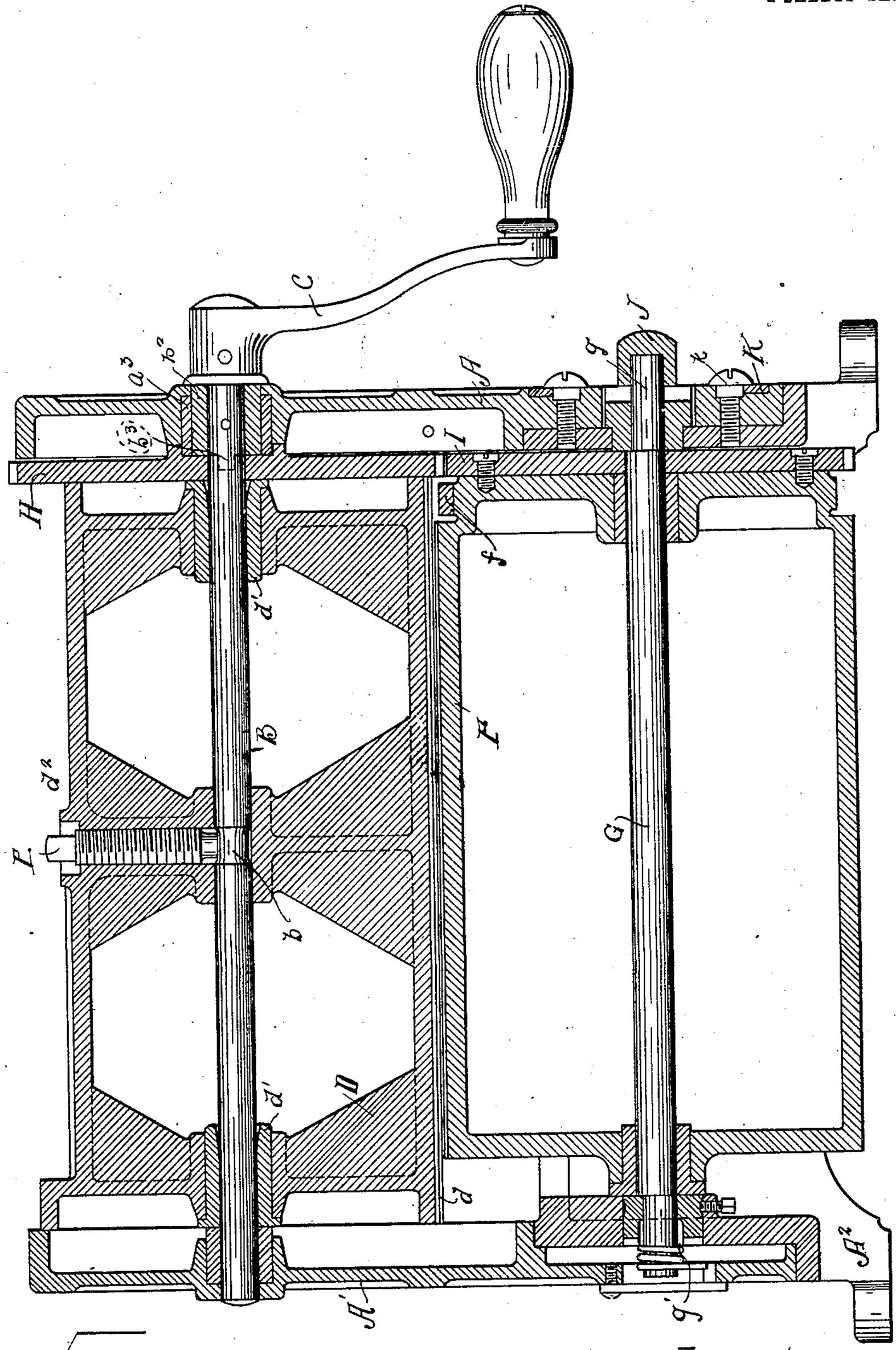

Fig. 1.

Witnesses
Oliver M. Kappler.
Hugh B. McGill

Inventor
Harry C. Gammeter,
By Acker & Page,
Attorney

H. C. GAMMETER.

PRINTING MECHANISM.

APPLICATION FILED JULY 30, 1910.

999,023.

Patented July 25, 1911.

2 SHEETS—SHEET 2.

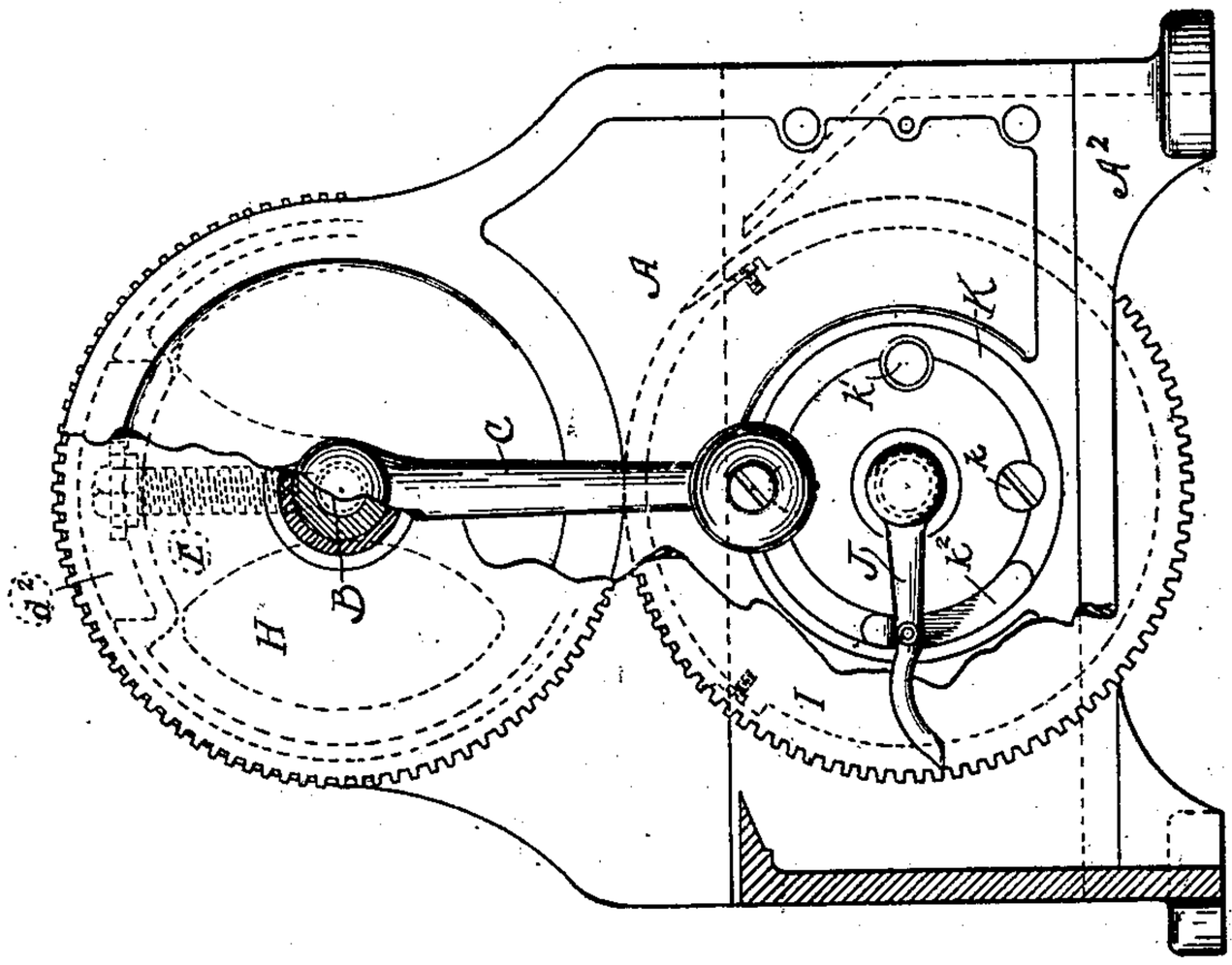

FIG. 3.

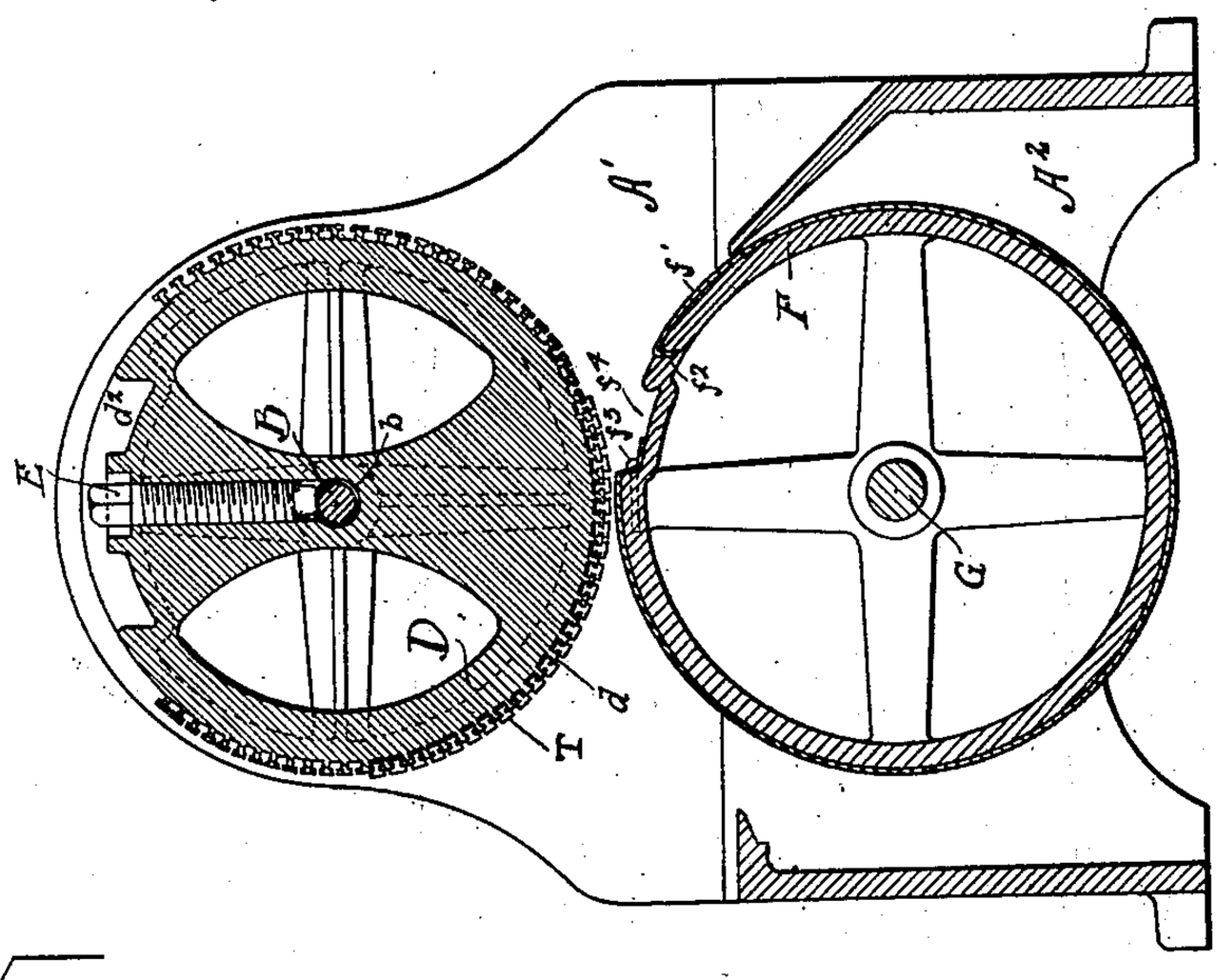

FIG. 2.

Witnesses.
Oliver M. Kappler.
Hugh B. McGill

Inventor
Harry C. Gammeter,
By Albert G. Davis.
Attorney

UNITED STATES PATENT OFFICE.

HARRY C. GAMMETER, OF BRATENAHL, OHIO, ASSIGNOR TO THE AMERICAN MULTIGRAPH COMPANY, OF CLEVELAND, OHIO, A CORPORATION OF OHIO.

PRINTING MECHANISM.

999,023. Specification of Letters Patent. Patented July 25, 1911.

Original application filed March 28, 1906, Serial No. 308,379. Divided and this application filed July 30, 1910. Serial No. 574,660.

To all whom it may concern:

Be it known that I, HARRY C. GAMMETER, a citizen of the United States, and residing at Bratenahl, in the county of Cuyahoga and State of Ohio, have invented a certain new and useful Improvement in Printing Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings.

This invention is designed to provide a simple and efficient printing device adapted for embodiment in a small office machine. The machine prints from individual type mounted in longitudinal rows on a removable member, the removability of such member allowing one form to be assembled while another is in use printing, and allowing forms, when assembled, to remain ready for subsequent use by the simple removal of the form-carrying member from the machine.

The present invention is a division of my application #308,379, filed March 28, 1906 and relates primarily to the removable feature above referred to. The features of the platen construction and operation shown are covered in that application, as well as suitable inking means, not here shown, but which may coöperate with the printing mechanism shown.

In the drawings, Figure 1 is a longitudinal vertical central section through the printing mechanism; Fig. 2 is a transverse vertical section; and Fig. 3 is an end view, partly broken away.

Referring by letters to the embodiment shown in the drawing, A and A^1 are a pair of rigid end plates mounted on a suitable hollow base A^2. The end plates occupy a recessed portion in the ends of the base and are firmly fastened to those ends by screws. This forms a very stiff and rigid frame.

B designates a shaft mounted in suitable bearings carried by the two end plates of the frame. On the end of this shaft is a crank C, by which it may be rotated.

D indicates the printing drum, the body of which is a hollow webbed structure, as shown. On the exterior of the body and connected with it are parallel overhanging rails *d*, held equidistant by the body and presenting type channels between them, the type having grooves in their opposite edges whereby they may be held in such channels. The drum carries bushings d^1 surrounding the shaft. Mounted radially in the drum is a set screw E, adapted to extend into a reduced portion *b* of the shaft B. The head of this set screw occupies a recess d^2 in the drum, whereby it does not project sufficiently to interfere with the type. When the set screw is loosened, the shaft B may be drawn out endwise, and the drum removed for storage with its forms or for the assemblage of type into its channels or the distribution of type already therein.

Coöperating with the printing drum is an impression drum F, mounted within the base on a shaft G. The drums D and F are geared together by the gears H and I respectively. The gear I is secured to the drum F, while the gear H is mounted on a frame-bushing a^3, but is driven by lugs b^3 on the bushing b^2 rigid with the shaft B. The impression platen with its covering of removable soft material f^1 is of the same diameter as the printing drum with the type thereon. Thus, in the successive rotations of the drums, any type bears on the same portion of the impression platen. This enables the impression platen to be overlaid or underlaid to provide for inequalities in the type, or extra heavy impression at particular places. The soft covering f^1 is secured at one end in a slot f^2 in the drum, while the other end is held by a spring bail f^3 bending the covering into a recess f^4 in the drum.

As already mentioned, the feature of the platen-covering, above described, is covered in the parent application, of which this is a division. Another feature here shown and covered in that application is the mechanism for adjusting the impression platen. This mechanism is as follows:—The shaft G of the impression platen is shown as having eccentric extensions *g*, *g'* mounted in bushings carried by the end members of the frame base. On the extension *g* is an arm J by which the shaft may be rotated to adjust the impression platen with reference to the printing drum. To lock this lever J in various adjusted positions, while allowing its convenient release, I provide the ring K which seats in an annular groove in the end frame member A. The heads of screws *k* confine this ring in the groove while allowing it movement therein, and thumb screw

k^1 furnishes means for clamping the ring in any desired position. Mounted on the ring is a detent spring k^2 with which the arm J is adapted to engage. A projection or pin on the inner side of this arm comes opposite an opening or depression k^3 in the spring, holding the arm in place. To release the arm, the spring is pressed toward the end plate of the machine.

No means is shown in the drawings for inking the type carried by the upper drum. Any suitable means may be employed, as an inking roller or an inking ribbon, both shown in the application of which this is a division. Other means may be employed, if desired.

In the operation of my machine, the type, which are short pieces of metal grooved on their opposite sides, as shown at T in Fig. 2, are assembled on the drum between the rails thereof and are held against longitudinal displacement by suitable means, as plugs between the rails, or other mechanism, as is well understood. The assemblage of the type may be conveniently effected by loosening the set screw E and removing the drum, and after it has been loaded by returning it to place. While one drum is in use, another smaller drum may be having type assembled in it. Similarly, after the desired number of copies have been printed, the drum may be removed with the form thereon and set aside for future use. By this means I am enabled, not only to accomplish assemblage or distribution while the printing mechanism is in use, but I also may preserve forms which are assembled, so that, if they are again desired, it will not be necessary to reassemble the form; or portions of the form may be preserved and other portions assembled anew, as desired. These are features of much importance in enabling a device of this kind to be of the utmost practicability in producing circular letters and other office forms.

Having thus described my invention, what I claim is:—

1. The combination, with a platen, of cooperating rotatable mechanism including a member for carrying a page form of type held individually and loosely in assembled lines parallel with the axis of rotation and allowing its removal intact both as to words and lines, there being a non-printing space between the ends of the page form in the machine, and means accessible within such space for locking the page form in the machine, the said member carrying the page form comprising a series of straight parallel overhanging rails together with means connected with the various rails and holding them in such relation to each other that adjacent rails may be able to confine a line of grooved type between them, whether the member be in the machine or out, whereby a page form may be assembled outside of the machine or removed and preserved intact after printing in the machine.

2. In a duplicating machine, the combination, with a pair of frame plates having a space between them open above, of an impression platen mounted between said plates, a shaft removably mounted in the plates above the platen, a printing drum adapted to carry longitudinal rows of individual type, said drum standing between said frame-plates and being removably mounted on said shaft, and a radial set screw whose head occupies a recess in the drum for removably clamping the drum to the shaft whereby the shaft may be drawn endwise out of the drum and the drum removed upward out of the frame.

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

HARRY C. GAMMETER.

Witnesses:
GEO. H. BARTHOLOMEW,
BELLE C. ROBINSON.