

March 6, 1934.

C. G. KRANZ

1,949,688

PRINTING DEVICE

Original Filed Nov. 1, 1929

Fig. 1

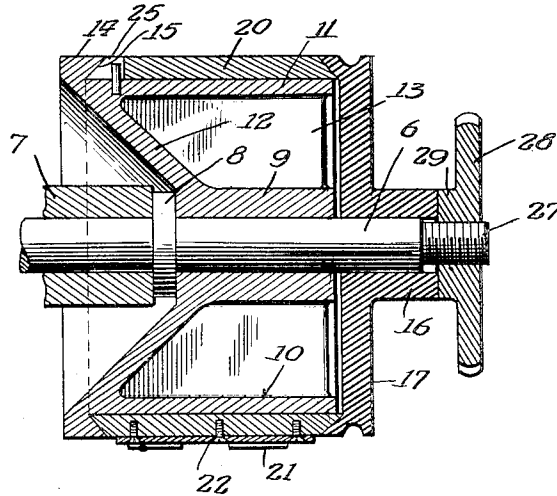


Fig. 2

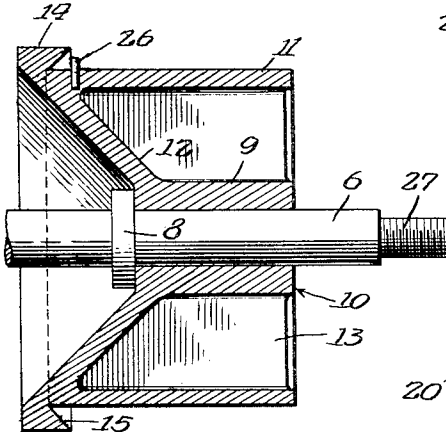


Fig. 3

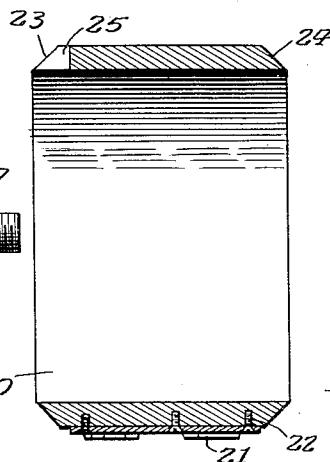


Fig. 9

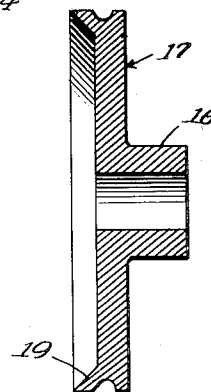
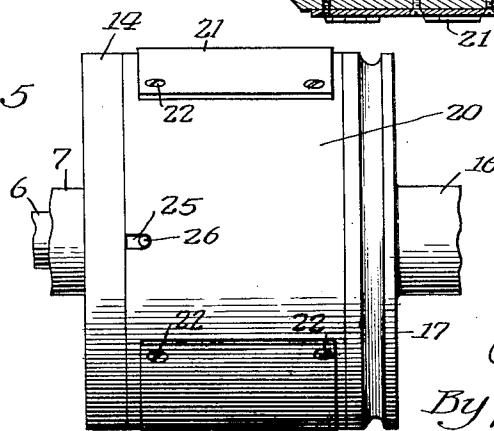


Fig. 5



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UNITED STATES PATENT OFFICE

1,949,688

PRINTING DEVICE

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Original application November 1, 1929, Serial No.
404,092. Divided and this application January
28, 1931, Serial No. 511,707

3 Claims. (Cl. 101—375)

This application is a division of my application Serial No. 404,092, filed November 1, 1929.

This invention relates to printing devices of the character employing an electroplate or other permanent printing form and particularly to devices used in printing couples for making impressions on sheets passed between the printing form and a cooperating impression roller. It is desirable that such forms be demountable in order that they may be removed and replaced when so desired and therefore the salient object is to provide a novel mounting for a printing form on which the form may be readily installed or from which it may be readily removed.

Further objects are to provide a mounting wherein the form is held against lateral movement; wherein a circular form is held against circumferential movement; and wherein the various parts may be expeditiously and economically manufactured.

In the selected embodiment of my invention illustrated in the accompanying drawing

Fig. 1 is a vertical section of the mounting with a printing form retained thereon;

Fig. 2 is a vertical section of the main portion of the mounting;

Fig. 3 is a vertical section of the printing form;

Fig. 4 is a vertical section of a retaining cap; and

Fig. 5 is a side elevational view of the mounting with a form retained thereon.

The printing device illustrated in the accompanying drawing is adapted to be rotated during operation when used as a part of a printing couple embodying, in addition to the illustrated device, an impression roller which, for example, may be of the character disclosed in my co-pending application Serial No. 513,947, filed February 6, 1931. The device is mounted on a shaft 6 journaled in a bearing 7 which may be a portion of the frame of the printing couple. The collar 8 fast on the shaft 12 engages the inner end of the bearing 7 to properly position the shaft. Abutting the collar 8 is the bearing portion 9 of the drum 10. One end of the periphery 11 of the drum 10 is connected to the bearing 9 by a conical web 12, and ribs 13 are disposed between the bearing 9 and the inner portion of the periphery 11, these ribs extending from the conical web 12, and in this manner a rigid support is provided. At the end of the periphery 11 connected to the web 12, a ring 14 is provided which extends above the outer surface of the periphery 11 and a bevelled annular shoulder 15 thereon extends over the periphery. The portion of the shaft 6 ex-

tending beyond the collar 8 is of greater length than the bearing 9 of the drum 10 to extend therebeyond, and on a portion of the shaft adjacent the drum the bearing portion 16 of a circular cap 17 may be arranged. This cap 17 includes an annular bevelled shoulder 19 similar to but extending in a direction opposite to the inclination of the bevelled shoulder 15. The printing form comprises a wide ring 20, which may be either split or continuous, on the periphery of which the printing members are removably secured as by screws 22. Opposite ends of the ring 20 are bevelled, as indicated at 23 and 24. In the ring 20 extending inwardly through the bevelled edge 23 thereof is a slot 25. Fixed in the periphery 11 is a pin 26 which is disposed adjacent the inner edge of the ring 14. The ring 20 is slipped over the periphery 11 and neatly fits thereon and the bevelled edge 23 engages the bevelled edge 15. When the ring 20 is so disposed on the periphery 11, the pin 26 is disposed in the slot 25. After the ring 20 has been disposed in position, the cap 17 is mounted on the shaft 6 and the bevelled shoulder 19 thereon is engaged with the bevelled edge 24. Therefore the ring 20 is retained between the ring 14 and the cap 17 with the bevelled edges thereof engaged with the bevelled edges on said ring 14 and cap 17. The outer end portion 27 of the shaft 6 is of reduced diameter and is screw-threaded whereby a hand wheel 28 may be fitted thereon and the bearing portion 29 of this hand wheel engages the end of the bearing portion 16. Thus, by tightening the hand wheel the cap 17 may be forced toward the ring 20 to thereby securely clamp said ring 20 between the ring 14 and cap 17 and thus endwise displacement of the ring 20 is effectively prevented. Circumferential movement of the ring 20 on the drum 10 is prevented by the disposition of the pin 26 in the slot 25. Outward movement of the ring 20 due to any centrifugal force which may be developed is prevented by the interengagement of the bevelled edges on the ring 20 with the bevelled shoulders on the ring 14 and cap 17. It is therefore manifest that the ring 20 is tightly secured on the drum 20, and it is also apparent that the ring 20 is readily removable by merely removing the hand wheel 28 and the cap 17, after which the ring 20 may be slipped from the drum 10.

In the foregoing description I have set forth a selected embodiment of my invention, but it is to be understood that this is capable of variation and modification and I therefore do not wish to be limited to the precise details set forth but desire to

avail myself of such changes and alterations as fall within the purview of the following claims. I claim:

1. A printing device including a shaft, a drum
5 including a bearing mounted on said shaft and of less axial extent than the drum and having one end thereof spaced inwardly from one end of the drum, a conical web interconnecting said ends of the drum and bearing, a shoulder at said
10 end of said drum on the periphery thereof, a ring-shaped printing form removably mounted on said drum and having an edge thereof engaged with said shoulder, means preventing circumferential movement of said printing form on the periphery
15 of said drum, a cap mounted on said shaft and engaged with the opposite edge of said printing form, said shaft having a screw-threaded end portion, and a nut mounted on the screw-threaded end portion of said shaft and engageable with
20 said cap to force said cap toward said printing form whereby said printing form is tightly clamped on the periphery of said drum between said cap and shoulder, said conical web uniformly dissipating the thrust attendant to the forcing
25 ing of said printing form toward said shoulder.
2. A printing device including a shaft, a drum including a bearing mounted on said shaft and of less axial extent than the drum and having one end thereof spaced inwardly from one end of
30 the drum, a conical web interconnecting said ends of the drum and bearing, an abutment on the periphery of the drum at said end thereof, a printing form on the periphery of the drum, and means mounted on said shaft at the end of the

drum opposite said abutment and engaging the printing form and forcing it toward and holding it in engagement with said abutment, said conical web uniformly dissipating the stress attendant to the forcing of the printing form toward
80 said abutment.

3. A printing form including a shaft, a collar on said shaft, a drum mounted on said shaft and including a bearing having one end thereof abutted against said collar, spaced ribs connecting
85 said drum to the bearing therefor, a shoulder at the end of the drum above said collar, said shoulder having a beveled edge, a ring-shaped printing form mounted on the drum and including beveled side edges and having one of said edges engaged with the beveled edge on the shoulder,
90 said shaft providing a bearing portion at the end of said drum opposite said collar and having a reduced threaded end outwardly of said bearing portion, a cap mounted on the bearing portion on
95 said shaft and including a sleeve partially extending over the reduced threaded end and also including an inwardly extending flange having a beveled edge thereon engageable with the other beveled edge on the printing form to space said
100 cap from the adjacent end of the drum, and a retaining nut mounted on the reduced threaded end on said shaft and adapted to force said cap toward and hold it in engagement with said printing form, said retaining means acting on said
105 cap to apply uniform pressure on said printing form.

CURTIS GEORGE KRANZ.

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