Dec. 9, 1952 C. H. GILBERT 2,620,729

PRINTING APPARATUS

Filed July 3, 1950 2 SHEETS—SHEET 1

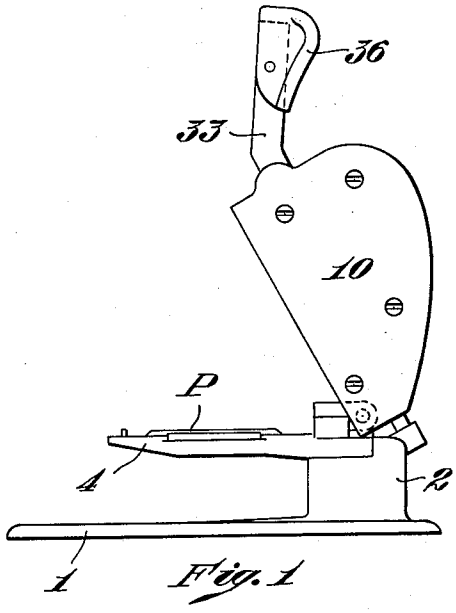


Fig. 1

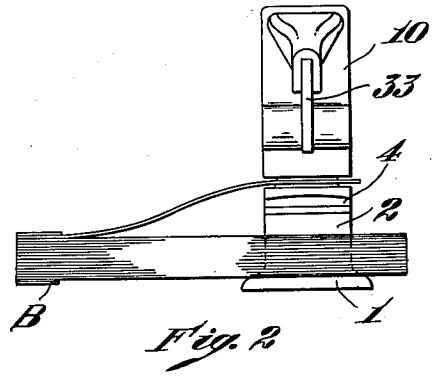


Fig. 2

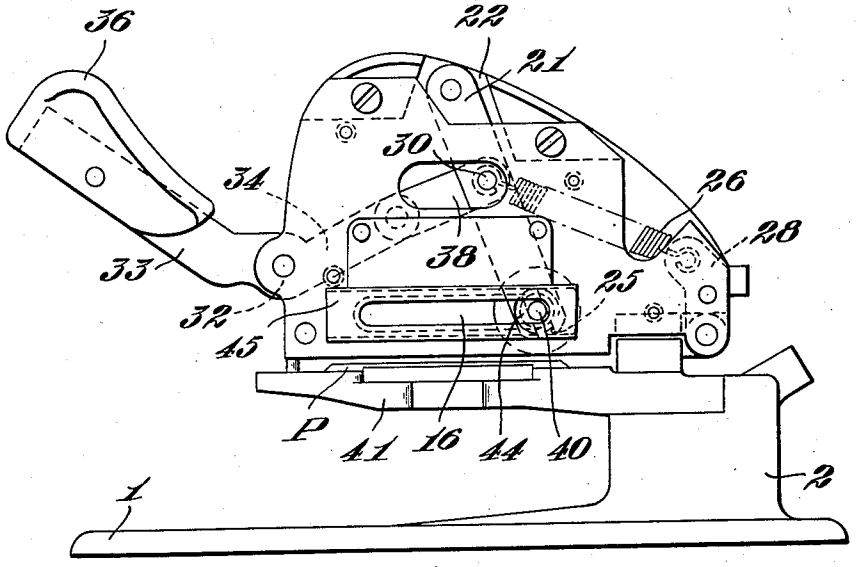


Fig. 4

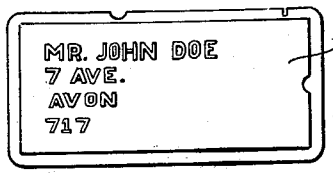


Fig. 3

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PRINTING APPARATUS

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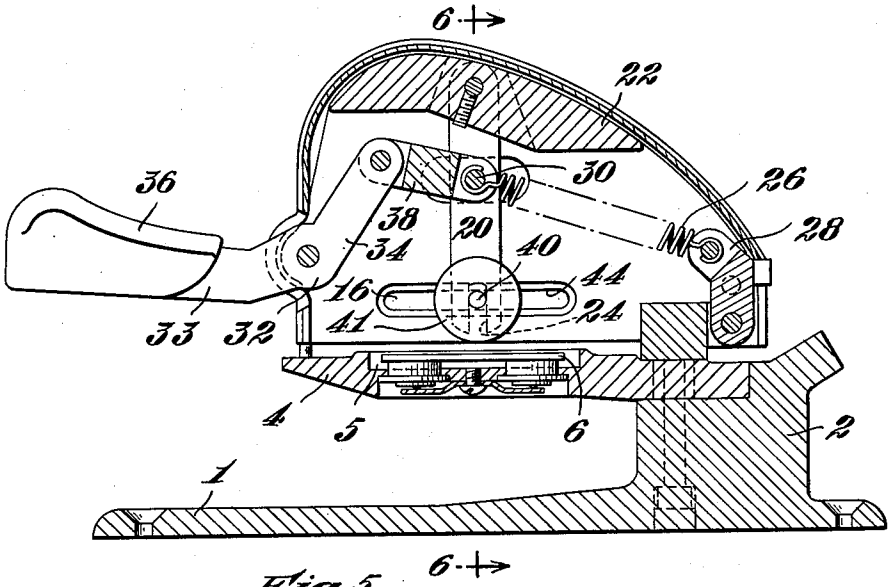


Fig. 5

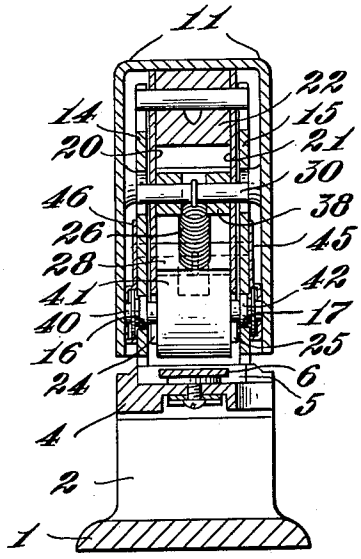


Fig. 6

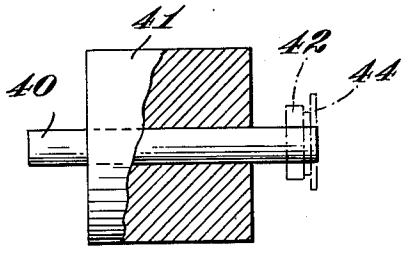


Fig. 7

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UNITED STATES PATENT OFFICE

2,620,729

PRINTING APPARATUS

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Application July 3, 1950, Serial No. 171,883

2 Claims. (Cl. 101—269)

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This invention relates to a device for printing indica such as names and addresses on sales slips or the like by means of typographical plates of a kind suitable for use as identification tokens and adapted to be carried by individual customers, this being a division of Sr. No. 47,785, filed September 4, 1948, now abandoned.

Objects of the invention are to provide a printing device which produces clean cut and uniform printing, which operates conveniently and with little effort, which is simple and economical in construction, which can be assembled and disassembled easily and quickly, which permits the printing roller to be removed easily and quickly and which is durable and reliable in use.

For the purpose of illustration a typical embodiment of the invention is shown in the accompanying drawings in which

Fig. 1 is a side elevation of a printing device constructed in accordance with the present invention, the head being shown in raised position to receive sales slips;

Fig. 2 is an end elevation showing the head in lowered position with a set of sales slips interposed between the head and base;

Fig. 3 is an enlarged top plan view of the printing plate;

Fig. 4 is an enlarged side elevation with the casing removed;

Fig. 5 is an enlarged longitudinal vertical section showing the inking roller and associated parts in mid-position;

Fig. 6 is a section on the line 6—6 of Fig. 5; and

Fig. 7 is an enlarged elevation of the inking roller.

The embodiment herein shown for the purpose of illustration comprises a base 1 formed at one end with an upstanding block 2 to which a plate holder 4 is rigidly secured in spaced relation to the base 1 so as to permit the body of a sales book B to be inserted beneath the plate holder, as illustrated in Fig. 2. The plate holder is recessed as indicated at 5 (Figs. 5 and 6) and is provided with a yieldable plate-centering member 6 adapted to support a printing plate P (Fig. 3) within the recess 5. The printing plate P may be of the construction shown in Patent 1,912,437, granted June 6, 1933, being formed with raised characters in nonreversed order.

A head 10 is pivotally mounted at the rear of the plate holder so as to swing upwardly, as shown in Fig. 1, to permit a sales slip or the like to be positioned on the printing plate P, the head 10 comprising a casing or housing 11 (Fig. 6)

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within which are spaced side walls 14 and 15 formed with aligned elongate guide slots 16 and 17 defining a path parallel to the plane of the characters of the printing plate P.

Spaced depending arms 20 and 21 are pivoted at their upper ends to a spacer block 22 (Figs. 4–6) and the lower ends of these arms terminate in bifurcated portions 24 and 25 aligned with the guide slots 16 and 17. One end of a tension spring 26 is connected with a spacer block 28 at the rear of the housing and its other end is connected with a pin 30 extending between the central portions of the arms 20 and 21, the tension spring 26 being operative to retract and hold the arms in retracted position (Fig. 4).

An actuating member 32 in the form of a bell crank is pivotally mounted between the side walls 14 and 15 with one arm 33 projecting forwardly through an opening in the front of the casing 11 and its other arm 34 extending inwardly. The arm 33 is provided with an operating handle 36 and the inner end of the arm 34 is pivotally connected by a link 38 with the pin 30, the construction and arrangement of parts being such that by depressing the handle 36, the arms 20 and 21 are swung forwardly and upon releasing the handle, the spring 26 retracts the arms and restores the handle to elevated position.

The bifurcated ends 24 and 25 of the arms 20 and 21 embrace the end portion of an axle or shaft 40 associated with an ink-carrying roller arranged to travel along a path parallel to and substantially contiguous with the plane of the characters of a printing plate P carried by plate-holder 4. As shown in Figs. 4, 6 and 7, the shaft 40 has a sliding fit within a porous ink-carrying roller 41 having minute internal cavities which collectively constitute a storage reservoir for ink, the roller, or at least the peripheral portion thereof, preferably having the physical characteristics specified in parent application Sr. No. 47,785, now abandoned. Instead of using an ink-absorptive printing roller an ink ribbon may be employed as in Patents 1,829,586, 1,928,685 and 1,945,264. The ends of the shaft 40 carry disc-like flanged rolls 42 fitting within the slots 16 and 17 with their flanges 44 contiguous to the outer faces of side walls 14 and 15.

Retainers 45 and 46 are riveted or otherwise secured to the outer faces of side walls 14 and 15 to prevent displacement of the flanged rolls 42 and these retainers are formed with slots corresponding to but slightly smaller than the slots 16 and 17, so as to permit the shaft 40 to be slid outwardly therethrough and the inking

roller 41 removed without displacing the flanged rolls 42. With this construction and arrangement, the roller 41 may be quickly removed simply by withdrawing the shaft 40 and replaced by holding the roller aligned with the flanged rolls and then inserting the shaft. As shown in Fig. 6 the lower edges of the retaining plates 45 and 46 are turned inwardly to extend under the bearing rollers 42.

When a sales slip is positioned on a printing plate carried by the plate holder, as illustrated in Fig. 2, and the handle 36 is depressed, the inking roller 41 is carried across the uppermost slip or on the areas corresponding to the raised type a thin film of ink, thus printing on the side of the sheet opposite the printing plate. In this operation pressure is transmitted to the printing roller 41 from the handle through the side walls 14 and 15 of the head, thence from the downwardly facing upper edges of the slots 16 and 17 to the bearing rollers 42 and thence through the shaft 40 to the printing roller. By having the handle project from the front of the head and connecting it to the roller actuating means as herein disclosed the head may be swung from retracted to printing position and the printing roller caused to roll over the printing plate all in one continuous movement of the handle in the same general counterclockwise direction.

I claim:

1. In the art of printing machines of the type adapted to use portable printing plates, a machine comprising a frame, a seat in the frame to hold a printing plate in upwardly-facing printing position without attachment, an ink roller having an axial bore, a shaft extending through the bore with its ends projecting beyond the roller, actuating means acting on said ends for moving the roller over the printing plate, said shaft being slidable endwise out of the roller and actuating means, a handle extending from one end of the frame, the handle being pivoted on the frame intermediate its ends, means interconnecting the inner end of the handle with said actuating means, and a hollow casing telescoping downwardly over the frame with opposite walls overlapping said ends of the shaft, said casing

having a slot extending upwardly from its lower edge to receive said handle when the casing is telescoped downwardly over the frame.

2. In the art of printing machines of the type adapted to use portable printing plates, a machine comprising a base having a recess in its top side to receive a printing plate, a head having its rear end pivotally mounted on the base to swing between printing and retracted positions, the head having spaced parallel side walls provided with downwardly facing bearing surfaces which are substantially parallel with the top of the base when the head is in printing position, a printing roller for pressing paper against the printing plate, shaft ends projecting from the ends of the roller, bearing rollers fitting over said shaft ends and bearing against said bearing surfaces, retaining plates for preventing outward displacement of the bearing rollers, means for mounting said retaining plates on the outer surfaces of said side walls, means for moving the printing roller over the printing plate including arms having slots to receive said shaft ends and an actuator pivoted intermediate its ends, the front end of the actuator projecting forwardly from the front end of the head to form a handle having swinging movement up and down and the rear end being interconnected with said arms to swing the arms back and forth in response to said swinging movement, and a hollow casing telescoping downwardly over the head, the casing having a slot extending upwardly from the lower edge at said front end of the head to receive said handle when the casing is telescoped downwardly over the head.

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REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
1,829,586	Dugdale	Oct. 27, 1931
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2,480,436	Benavides	Aug. 30, 1949