J. S. DUNCAN.

PRINTING DEVICE.

APPLICATION FILED JUNE 14, 1909.

1,026,244.

Patented May 14, 1912.

Fig. 1.

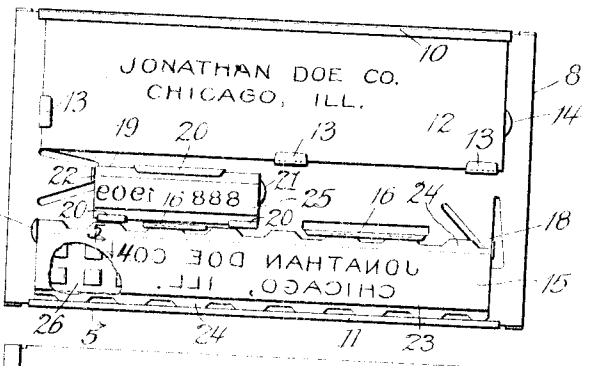


Fig. 2.

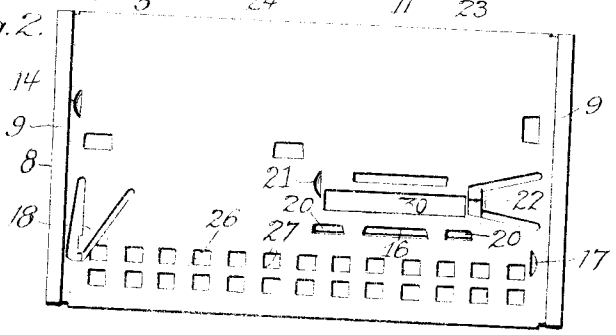


Fig. 3.

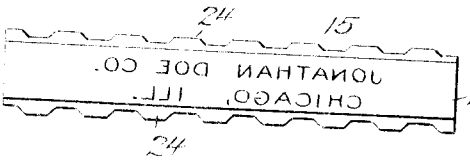


Fig. 8.

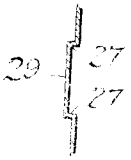


Fig. 4.

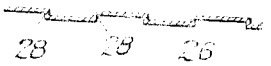


Fig. 5.

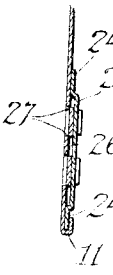


Fig. 6.

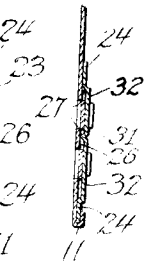
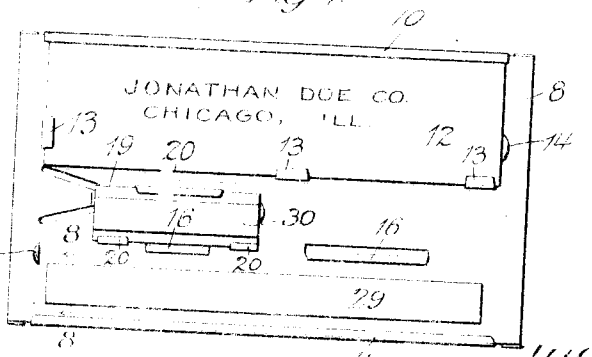


Fig. 7.



Witnesses:

Inventor

Joseph S. Duncan

By Lundquist Belt & Fuller

Attys.

UNITED STATES PATENT OFFICE.

JOSEPH S. DUNCAN, OF CHICAGO, ILLINOIS, ASSIGNOR TO ADDRESSOGRAPH COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

PRINTING DEVICE.

1,026,244. Specification of Letters Patent. Patented May 14, 1912.

Application filed June 14, 1909. Serial No. 501,993

To all whom it may concern:

Be it known that I, JOSEPH S. DUNCAN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Printing Devices, of which the following is a specification.

This invention relates to improvements in printing devices which are largely used by public and private corporations, publishers and other large concerns who send out ma bills, letters or circulars regularly to the same customers, for printing the addresses on envelops and sometimes on the contents thereof also.

The address has been stamped in relief on a plate and the latter has been removably mounted in a suitable frame which has also been provided with a card bearing an impression of the address and any other useful information. The frames are generally arranged in drawers in accordance with a regular card index system and they are run through addressing machines for printing and returned to the drawers in accordance with their original arrangement therein. The plates and cards have been held in place on the frames by engaging their edges with lips, flanges or other projections struck up or otherwise provided on the frames. Examples of these plates and frames are found in my Patents No. 692,994 dated February 11, 1902, No. 853,538 dated May 14, 1907 and No. 856,452 dated June 11, 1907. The plate engaging projections for holding the plate on the frame are nearly or quite as high as the face of the type and sometimes they are engaged by the inking device and become inked and smudge or mark the envelop or letter during the printing operation. This spoils the appearance of the work and particularly when an imitation of typewritten work is sought to be produced. To avoid this my present invention provides means of simple character for elevating the face of the type sufficiently above the projections on the frame to prevent said projections from engaging the work and also to prevent these projections from being engaged by the inking device.

My invention also has for its object to support the printing plate and the type thereon during the printing operation to keep the face of the type in proper position to produce a clear and distinct impression. And a further object of the invention is to provide a supplemental printing plate removably engaged with the frame between the address printing plate and the card for printing an expiration date or other subject matter above the address.

In the accompanying drawings illustrating the invention Figure 1 is a front view of the frame with the printing plate and card thereon and the address printing plate partly broken away. Fig. 2 is a back view of the frame. Fig. 3 is a face view of the address printing plate. Fig. 4 is a detail sectional view on the line 4—4 of Fig. 1. Fig. 5 is a detail enlarged sectional view on the line 5—5 of Fig. 1. Fig. 6 is a view similar to Fig. 5 showing a ribbed plate. Fig. 7 is a front view of a frame, without the printing plates, showing another embodiment of the invention. Fig. 8 is a detail enlarged sectional view on the line 8—8 of Fig. 7.

Referring to the drawings, 8 designates a frame which, in the form shown, is provided at its side edges with spacing flanges 9 and at its top and bottom with beads 10 and 11. A card 12 is removably held in place beneath the bead 10 and the lips 13 and it is prevented from moving endwise to the right by a stop 14. An address printing plate 15 is removably held in place below the card and beneath the bead 11 and the lips 16. The printing plate is securely held in place on the frame against a stop 17 by a spring locking device 18 of suitable character. A supplemental printing plate 19 is arranged on the frame beneath lips 20 and between the card 12 and the address printing plate 15, and it is held in place thereon between the stop 21 and the spring locking device 22.

The printing plate 15 may bear any number of lines of type for an address or for any other subject matter and the plate 20 may bear type for printing the date of expiration of a subscription to a magazine or newspaper, or any other subject matter.

The address printing plate is provided with an elevated panel 23 for one or more lines of type. The edge flanges 24 of the plate which engage the bead 11 and lips 16 of the frame may be broken as shown in Fig. 3 or they may be continuous. The type characters on the plate 19 are also located on an elevated panel 25. By thus arranging the type characters on elevated panels, the

plane of the faces thereof is sufficiently raised above the plane of the lips, beads and other projections on the frame to enable the type characters to be properly inked without the inking device engaging said projections and so that the impression may be taken from the type characters without the projections engaging the work. This entirely avoids the liability of the work, whether envelops, letters or other material, being smudged or blurred by contact therewith of any parts of the frame, whether they be inked or not, for the printing faces of the type characters are in a plane entirely above the projections on the frame.

The impression is taken from the type by pressure applied preferably through the medium of a platen roller, but a movable platen of other form may be employed for this purpose. In any event, but particularly when a roller platen is employed, it is desirable to provide for sustaining the type with their faces in the plane of the printing operation, that is to say, in printing position, during the impression operation, otherwise the pressure employed may be sufficient, in some instances at least, to bend or otherwise distort the plate sufficiently to disturb the uniformity of position of the printing faces of the type characters in a single plane. For this reason I provide the frame with an elevated bed to form a support for and sustain the elevated panel of the printing plate. This elevated bed may be made in various forms but I prefer to make it in sectional form as illustrated in Figs. 1 to 5 in which the bed consists of a plurality of raised rectangular sections 26 formed by cutting the frame on two sides of each section and then pressing or stamping the section up on the front of the frame until the tops of all the sections lie in the same plane. These sections are preferably spaced apart at regular intervals and I prefer to provide a row of sections beneath each line of type, as shown. I may cut the frame at the sides of the sections but I prefer to cut the frame at the top and bottom of the sections (at 27, Fig. 5) and leave the section connected at its side edges 28 (Fig. 4) with the frame, the metal at the side edges being drawn out in the pressing or stamping operation. If a roller platen is employed the pressure exerted thereby will travel transversely of the plate and be correspondingly applied to the elevated bed of the frame beneath the elevated panel of the plate. If the sections were not sustained at their side edges they might, under some conditions, yield under the pressure of the platen and any time give way sufficiently to disturb the level of the bed which might result in producing an imperfect impression. But as the pressure of the platen travels transversely across the bed the sections will be sustained if the metal is cut at the top and bottom of each section and the side edges of the sections remain integral with the rest of the frame and the face or top of the bed will constantly be maintained uniformly throughout in the same plane.

While the sections of the bed are preferably made in rectangular form as shown and described they may be made in other forms and differently arranged and spaced apart so long as the bed effects the results herein set forth. For some purposes I may make the bed in the form of a continuous elevated bed 29 as shown in Fig. 7. This panel may be stamped or pressed up from the frame without cutting the frame at the edges of the panel, or the frame may be cut at the short or end edges of the panel if desired to facilitate the stamping or pressing operation. The sectional form of bed illustrated in Figs. 1 and 2 is preferred to the form illustrated in Fig. 7 for the reason that it is more substantial and permanent and does not weaken the frame, whereas the elevated bed 29 of Fig. 7 by reason of its size may yield more or less under the pressure of the platen and may also weaken the frame. The frame is also provided with an elevated bed 30 (Fig. 7) to sustain the type panel of the supplemental printing plate 19 (Fig. 2) and this bed may be of sectional form as heretofore described, or it may be in the form of a continuous panel, as shown. With the form of bed shown in Figs. 1 and 2 I may use a plate provided with a longitudinal rib 31 (Fig. 6) which serves to stiffen the plate and also sustain the type panel 32 during the printing operation.

It will be noted that the opposite lips 20 constitute a guideway for the slidable attachment and detachment of the printing plate 30, while the lips 16 and 11 constitute a similar guideway for the printing plate 15.

What I claim and desire to secure by Letters Patent is;

1. A printing device comprising a frame plate having an elevated bed stamped up therefrom, and also provided with printing plate retaining means struck up from the frame plate at opposite sides of the bed, and a detachable printing plate having an elevated panel stamped up therefrom and provided with printing characters on the panel, said panel embracing and engaging the elevated bed and supported thereby, and the edges of the printing plate engaging the printing plate retaining means, the plane of the printing characters being above the plane of the printing plate retaining means, substantially as described.

2. A printing device comprising a frame plate having an elevated bed made up of a plurality of sections stamped up from the plate with their outer faces lying in one and the same plane, the frame plate also having printing plate retaining means struck

up from the frame plate at opposite sides of the bed, and a detachable printing plate having an elevated panel stamped therein and provided with printing characters on the panel, said panel embracing and engaging the elevated bed and supported thereby, opposite edges of the printing plate engaging the printing plate retaining means, the plane of the printing characters being above the plane of the printing plate retaining means, substantially as described.

3. A printing device comprising a frame plate having a bed stamped up therefrom and provided with printing plate retaining means stamped up from the frame plate at opposite sides of the bed, and a printing plate having an elevated panel stamped therein with edge flanges at opposite sides of the printing plate below the elevated face of the panel, said elevated face of the panel having printing characters thereon, the panel embracing and engaging the elevated bed and supported thereby, and the flanges engaging the printing plate retaining means, the plane of the printing characters being above the plane of the printing plate retaining means, substantially as described.

4. A frame adapted to receive a printing plate and provided with a sectional elevated bed therefor, each section of the bed being stamped up from the frame and cut at opposite edges to separate it at said edges from the rest of the frame.

5. A frame adapted to receive a printing plate and provided with a sectional elevated bed therefor, each section of the bed being stamped up from the frame and cut at its top and bottom edges to separate it at said edges from the rest of the frame.

6. The combination with a printing plate having an elevated panel and type characters on said panel, of a frame adapted to receive said plate and having a sectional elevated bed to sustain said panel, the sections of the bed being arranged in rows and with a row beneath each line of type on the plate.

7. A printing device comprising a frame having an elevated bed and a slideway parallel with the bed, and a detachable printing plate having an elevated panel stamped therein and provided with printing characters on the panel, said panel embracing and engaging the elevated bed and supported thereby, and said detachable printing plate having means engaging the slideway of the frame to permit slidable attachment and detachment of the detachable printing plate, substantially as described.

8. A printing device comprising a frame having an elevated bed and a slideway parallel with the bed and made up of lips carried by and overhanging the frame at opposite sides of the bed, and a detachable printing plate having an elevated panel stamped therein and provided with printing characters on the panel, said panel embracing and engaging the elevated bed and supported thereby, and said detachable printing plate having edge flanges slidably engaging the lips of the guideway, substantially as described.

9. The combination with a printing plate having edge flanges and an elevated panel with type characters thereon, of a frame adapted to receive said plate and provided with means to engage said flanges and with an elevated panel consisting of a plurality of sections integral with the frame and spaced apart, said sections being struck up from the frame with their outer faces lying in one plane to sustain the panel.

JOSEPH S. DUNCAN.

Witnesses.
WM. O. BELT,
M. A. KIDDIE.