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ADDRESS PLATE

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This invention relates to a printing device in the nature of an address plate, so designed that an unusually large amount of matter to be printed may be carried on the device. This means that for a given total area as much of the surface as possible should be free to be covered with type characters.

A customary address plate, comprising a holding frame and a printing plate mounted thereon, the printing frame and allows the other side of the frame both an indexing device, such as a cardboard strip, and the plate carrying the actual embossed characters from which the printing is done by the platen mechanism. My invention places the indexing card on one side of the printing frame and allows the other side to be used entirely to support plates having embossed characters thereon.

The holding frame is so designed that a plurality of plates carrying the printing characters may be mounted thereon with an edge of one plate abutting an edge of another plate, to conserve room and allow more characters to be included in the subject matter to be printed. Further, my new means of fastening the printing plates on the frame removes the necessity for any upstanding projections in the intermediate area of the frame, the printing plates being held by means disposed entirely along the edges of the frame.

Other specific objects of this invention will become more apparent from the following description, which refers to a preferred form of frame as illustrated by the following description and the drawing, the novel features of which will be set forth in the claims.

Referring now to the drawing, Fig. 1 is a plan of my printed frame, with two printing plates in position thereon; Fig. 2 is a plan of the reverse side of my improved printing frame, showing the index card thereon; Fig. 3 is an irregular longitudinal section, as indicated by 3—3 on Fig. 1; Fig. 4 is an irregular transverse section through my plate and frame, as indicated by 4—4 on Fig. 2; Fig. 5 is a partial longitudinal section, as indicated by 5—5 on Fig. 1; Fig. 6 is a fragmentary section, as indicated by 6—6 on Fig. 1; Fig. 7 is a broken plan, showing one of my printed plates in position on the frame and the other in a position assumed during its placement upon the printing frame.

In general, my invention comprises a comparatively flat holding frame 10, having mounted thereon in a suitable manner printing plates 12 and an index card 14. The function of the plates

12 is to carry characters embossed thereon which are adapted to be printed on a suitable medium by a platen mechanism. The index card 14 is adapted to contain a transcript of the embossed characters, or any other information desired. Along the ends of my frame are guide ribs 15, which serve as a means for retaining the device in proper alignment on the printing bed.

The long sides of the frame are, at their edges, bent over upon themselves, to form the overhanging ledges 16. These ledges are such a distance from the face of the frame 10 that the printing plates 12 may snugly underlie them along the entire length of the printing plate. Adapted to engage the corners of the plate, opposite the side underlying the ledge, are lips 17 and 18, each of which is connected with the body of the frame at the outer edge of the lip and also at right angles thereto on a longitudinal edge adjacent the corresponding lip for the other plate. Accordingly, each of these lips is in effect a corner pocket adapted to receive one corner of the plate in the intermediate region of the end portion of the frame. All of these lips are integral with the frame proper and are merely raised therefrom in the forming process.

There are two sets of plate retaining lips, one for each of the two printing plates shown. The manner in which they are formed requires substantial spacing between each pair, as 19 and 20. To counteract this spacing and still allow the plates to substantially abut each other along their long sides, notches 21 are cut in the corners thereof. These notches are of such depth that two of them combine to counteract spacings 19 and 20, as well as the thickness of the frame material bent upwardly to form the lips, and thus the two plates are allowed to come together. To allow reversibility of the plates, it is desirable that these notches be cut in each of the four corners.

It is to be noted that the lip 17 is of substantially less width than the lip 18. Further, it should be noted that the plate, as shown in Fig. 1, is placed to underlie a minor portion of the lip 18. This is to allow the ready removal of the plate in a manner to be hereinafter described.

A tongue 25 is provided to complete the retaining means on the frame for the plates. This tongue is connected to the frame in such a manner that the tongue points toward the adjacent edge of the frame. The formation is accomplished by cutting a U-shaped slot 26 in the frame. As shown in Fig. 5, the tongue 25 so formed is adapted to bear upwardly against a

printing plate, and when not so engaged rises at the free end to an appreciable height above the flat surface of the frame. At its free end, the tongue is so formed as to provide an abutment 27 having substantially the same height as the thickness of the printing plate. From the top of the abutment, the tongue continues outwardly parallel to its main portion. This parallel raised portion 28 may have its surface knurled to provide a grip for a thumb nail or tool used to depress the tongue into its slot in the frame.

The lower plate in Fig. 1 is shown as completely in position in the printing frame. Thus, the plate completely underlies the lip 17 and partially underlies the lip 18. The abutment 27 of the tongue 25 prevents the plate moving in such a direction as to underlie the rest of the lip 18. The ledge 16 completely overlies the long edge of the plate.

The manner in which the plate is inserted in the frame is best illustrated in Fig. 7. Here the upper plate is shown in position, and the lower plate partially in position. The method of assembly is substantially as follows:

A notched corner 21 of one of the printing plates is inserted under the lip 18, as far as the notch will allow. The plate is then swung about the lip 18 as a center, until it becomes parallel with the ledge 16, at which time it will underlie it. To achieve this position it is necessary to maintain the tongue 25 depressed, so that the plate 12 may completely cover it, as shown in the case of the lower plate in Fig. 7. When this position has been assumed, the lip 17 will be free, while the tongue 18 will have underlying it as much of the plate as the notch 21 will permit.

It is now possible to slide the plate back until it underlies the entire lip 17 and only partially underlies the lip 18. When the plate abuts the end of the lip 17, the spring tongue 25 will be allowed to rise until its flat portion comes substantially into contact with the underside of the plate. At this point the abutment 27 will have risen to be opposite the edge 30 of the plate. The position shown for the upper plate of Fig. 7 will then have been assumed, and the plate is completely mounted on the printing frame. In this position, the sides 32 and 33 of the lips 18 and 17 combine with the ledge 16 to prevent any movement away from the plate frame, as well as to prevent it sliding in one direction on the frame. Sliding in the other direction on the frame is prevented by the abutment 27 of the spring tongue 25, acting in conjunction with the end 34 of the lip 17.

Thus, both frame and plate are maintained firmly with respect to each other, insofar as the necessary clearances will permit. It is apparent that the width of the plate 12 must be slightly less than the inside distance from the ledge wall, to the wall 32 of the lip 18. Although this difference may be quite small, it must be sufficient to allow the plate to be pivoted about the tongue as it is slid into engagement with the ledge upon placement in the plate.

On the opposite side of the printing frame from the printing plates, I mount an index card 14, as shown in Fig. 2. Adjacent to one long edge of the frame are two tongues 40, which rise above the frame and then extend inwardly from the edge parallel with the frame. At the opposite side of the frame is a third tongue rising from the frame and extending inwardly from its edge substantially parallel with the frame proper, al-

though for a much less distance than do the other tongues 40.

The frame has the guide ribs 15 at its ends on the underside used to hold it in proper alignment on the printing bed and to furnish abutments for the feeding mechanism usual in such machines. In the present case, however, I form these ribs with their edge flanges 42 a short distance from the frame panel, instead of in contact therewith. The tongues 40 and 41 and the flanges 42 all have their inner faces spaced a sufficient distance from the frame panel to permit the insertion of a cardboard or other index beneath them. In Fig. 2, the card 14 is shown of dimensions commensurate with the frame panel and mounted on the frame but underlying the tongues and bounding flanges.

The tongue 41 is made small to permit the ready insertion or removal of the index card, the prime function of this tongue being to prevent the card sliding out. The card is inserted from the long edge of the frame which supports this tongue 41, being passed over the tongue while the ends of the card slide beneath the rib flanges 42. The card is then pushed onto the plate until its advanced edge lies under the tongues 40, and then the trailing edge is sprung slightly to permit its placement under the tongue 41, at which time the card is completely mounted on the frame. For removal the card is sprung free from the tongue 41 and then withdrawn by the reverse movement.

It will be understood that each of the printing plates 12 is adapted to have printing characters embossed thereon, reading in the proper direction for reproduction. By reason of the absence of frame retaining lips along the proximate edges of the printing plates, it is possible to extend the embossed characters substantially to such edges. These proximate edges may in practice actually engage each other, though they are shown in the drawing as separated for clearness of illustration. My method of mounting the plates enables continuous printing matter to be embossed on the plates, starting on one plate and finishing on another.

By making a plurality of printing plates and arranging them on the frame so that they may receive continuous matter, I have all the advantages of a single large plate, so far as reproduction is concerned, while I have the further advantage of enabling the plates to be embossed in a standard embossing machine, which cannot take material having a width much over half that of the up and down dimension of the frame. By separating the printing matter into two or more printing plates acting conjointly, I have greater adaptability in making changes since the portion of the matter which appears on either plate may, if suitable, be retained and only one plate changed to prepare a new form.

The provision of a card index of a size equal to the entire matter which may be printed is of advantage, and by mounting this on the rear of the frame, no additional frame area need be provided for such index. Moreover, the index is very simply retained by a slight difference in the formation of the guiding ribs, which would be employed for guiding and feeding purposes, and simple tongues pressed out from the frame panel.

The entire frame may be very readily constructed out of a single piece of metal and the mounting and removal of both the printing plates and the index card thereon is readily effected,

and, when mounted, the plates and card are effectively retained in position.

I claim:

1. The combination of a frame adapted to carry a plurality of printing plates, said frame having adjacent its ends in intermediate regions corner pockets adapted to coact with the proximate corners of the plates to limit the movement thereof both longitudinally and transversely, and the plates being notched at their corners to bring the proximate edges closer together than are the corresponding pockets.

2. A frame adapted to carry thereon a plurality of printing plates, said plates being retained on one side of said frame by means disposed about the edges of said frame, so that the plates may substantially abut along their proximate longitudinal edges, together with an index card carried on the opposite side of said frame and of a size corresponding to the sum of the plates.

3. A printing plate adapted to be embossed and mounted on a frame having retaining means for one edge of the plate and a pair of corner pockets, said plate comprising a strip of material of rectangular shape except that the four corners are notched, whereby the two corners at either longitudinal edge of the plate may coact with the two corner pockets.

4. A frame for carrying a printing plate to be retained thereon by means of overlying portions, comprising abutments on the frame to limit the sliding movement of said plate in one direction and to allow it to move slightly in the opposite direction, and a spring tongue on the frame adapted to limit the sliding movement of said plate in the latter direction, while the opposite end of the plate coacts with the first mentioned abutment.

5. A frame adapted to carry thereon a rectangular printing plate, said plate being carried by means comprising a raised ledge portion on the frame overlying one of said plate edges, together with raised retaining means overlying the opposite corners of said plate, said plate being adapted to reciprocate in said retaining means, and means for holding it in one extreme position.

6. A frame adapted to carry thereon a printing plate, said plate having notched corners and being retained on said frame by means comprising an overlying ledge portion on the frame, together with overlying retainers on the frame adjacent corners of the plate, each retainer being connected with the frame on longitudinal and transverse lines, said plate being adapted to reciprocate without losing the grasp of one of the corner retainers.

7. A frame for holding a printing plate, said frame having a spring tongue carrying an abutment adapted to engage the end of the plate, said frame having also two lips connected with the frame beyond the ends of the plate adjacent the corners thereof, the lip which engages the corner at the end engageable by the tongue having sufficient extent to enable the plate to shift longitudinally while under the lip to overlie the abutment and hold it depressed or to form an edge engagement with the abutment, and the lip engaging the other corner of the plate having less extent and being free from the plate when the plate overlies the abutment, but engaging the plate and forming an abutment for that end thereof when the other end of the plate makes the said edge engagement with the abutment on the tongue.

8. The combination of a frame adapted to

carry a printing plate, the frame having a pair of corner pockets to engage the plate at two corners and limit its movement both longitudinally and transversely, one of said pockets having greater extent than the other to enable it to coact with the plate whether the other corner is engaging its pocket or free therefrom, whereby the plate may be inserted first under the greater pocket and then by reverse movement shifted into engagement with the lesser pocket without releasing the hold of the greater pocket, and a spring tongue formed of material of the frame adjacent that end of the frame carrying the greater pocket, said tongue having a raised abutment adapted to underlie the printing plate when it is completely inserted in said greater pocket but adapted to engage the end of the plate when it is completely seated in the lesser pocket and only partially seated in the greater pocket.

9. The combination of a frame adapted to carry a printing plate, the frame having a doubled-over edge for retaining the plate along one edge, and having a pair of corner pockets to engage the plate at the two corners distant from said edge, one of said pockets having greater longitudinal extent than the other to enable it to coact with the plate whether the other corner is engaging its pocket or free therefrom, whereby the plate may be inserted first under the greater pocket and then by reverse movement shifted into engagement with the lesser pocket without releasing the hold of the greater pocket, and means for retaining the plate in the latter pocket.

10. A frame carrying a plurality of printing plates with an edge of one plate parallel with and substantially abutting an edge of the other plate throughout the character-carrying length thereof, each of said plates being retained thereon by means allowing a longitudinal sliding movement of said plates in said frame, the sliding movement of each of said plates being limited by a spring tongue and a fixed abutment which may engage one end of said plate and a fixed abutment on said frame which may engage the opposite end.

11. A frame adapted to carry thereon a pair of printing plates in such manner that an edge of one may lie parallel to and abut an edge of the other substantially throughout the character-carrying length of the plates, said plates being retained on said frame by means extending along and overlapping the distant edges of said plates and corner pockets at the proximate corners, each of said pockets being adapted to engage both an end and a longitudinal edge of the corresponding plate, the plates being shiftable longitudinally while in the corner pockets to free them at one corner only, and means on the frame for holding the plates against such shifting.

12. The combination of a printing plate and a frame adapted to carry the same, the frame having two raised lips connected thereto, said lips being spaced apart and adapted to overhang opposite end portions of the plate respectively, the plate having a length slightly greater than the distance between the free edges of said lips but less than the distance between the connection of the lips to the frame, whereby the plate may simultaneously underlie both lips but may clear one of them by longitudinal shifting, and a spring tongue on the frame having an abutment adapted to engage the plate to prevent such shifting and thus retain the plate in the grasp of both lips.

13. The combination of a printing plate and

a frame adapted to carry the same, the frame having two raised lips spaced apart and adapted to overhang opposite end portions of the plate respectively, the plate having a length slightly greater than the distance between said lips, one lip being connected with the frame beyond the end of the plate and the space between such connection and the other lip being greater than the length of the plate, and a spring tongue on the frame having an abutment adapted to engage the plate to limit shifting toward said connection and thus retain the plate in the grasp of both lips.

14. The combination of a printing plate and a frame adapted to carry the same, the frame having two raised lips spaced apart and adapted to overhang opposite ends of the plate respectively, each lip being connected with the frame by an offset portion of the frame adapted to be abutted by the corresponding end of the plate, the plate having a length slightly greater than the distance between said lips, but less than the distance between said offset connections, one lip being longer in the direction of the length of the plate than the other lip, and a spring tongue on the frame having an abutment in a region in substantial transverse alignment with said longer lip and adapted to engage the plate to prevent its shifting into engagement with the offset connection of the longer lip, whereby the plate may be held simultaneously beneath both lips but may clear one of them by longitudinally shifting when allowed by the depression of the spring tongue.

15. A frame having a body curled over toward the face at the top and bottom to provide a retainer to engage the top edge and bottom edge respectively of two plates on the face of the frame, overhanging lips rising from the body on the face side thereof to engage said plates near their proximate corners, and a single index card of a size corresponding to the sum of the two plates located on the other face of the frame and retained at its top and bottom edges by rearwardly extending lips formed out of the body of the frame.

16. A sheet metal frame having its face extending in a plane to its opposite ends and having such opposite ends bent backwardly and intermediately channeled to form hollow guide ribs, each of said guide ribs being formed with an edge

flange parallel with the general plane of the frame and a short distance from the surface thereof, together with tongues along other edges of said frame, and a removable leaf member adapted to be retained on said frame under said flanges and by said tongues.

17. The combination of a frame having a spring tongue carrying a movable abutment and two separated plate-retaining devices, and a printing plate of such size that it may span the distance between the retaining devices in a manner to be retained by both or while in final lateral position may extend into one retaining device and clear the other, whereby the plate may be inserted by movement in one direction into the grasp of one retaining device to the exclusion of the other when the abutment is idle, and thereafter by an opposite movement may be shifted into the grasp of the other retaining device without losing the grasp of the first retaining device, said abutment thereupon becoming active to prevent the plate shifting out of the grasp of the second retaining device, and means to prevent movement of the plate in the first stated direction out of the grasp of the retaining device which is active during said movement.

18. The combination of a frame and a printing plate adapted to be removably mounted thereon, the frame having a spring tongue adapted to provide an abutment for one end of the plate, said frame having a retaining device adapted to engage the end of the plate opposite the spring tongue abutment and another retaining device coacting with the plate adjacent the spring tongue abutment, said abutment and retaining devices being so located with reference to each other and with reference to the length of the plate that the first-mentioned retaining device cooperates with the far end of the plate when the spring abutment engages the near end, the second-mentioned retaining device being adapted to cooperate with the plate both when it engages the other retaining device and when it is free from the other retaining device and overlies the spring abutment, and means to prevent movement of the plate in a direction away from the first-mentioned retaining device out of engagement with the second-mentioned retaining device while overlying the abutment.

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