

Oct. 10, 1933.

E. U. T. BERTHELSEN

1,929,472

PRINTING DEVICE

Filed Oct. 17, 1931

Fig. 1

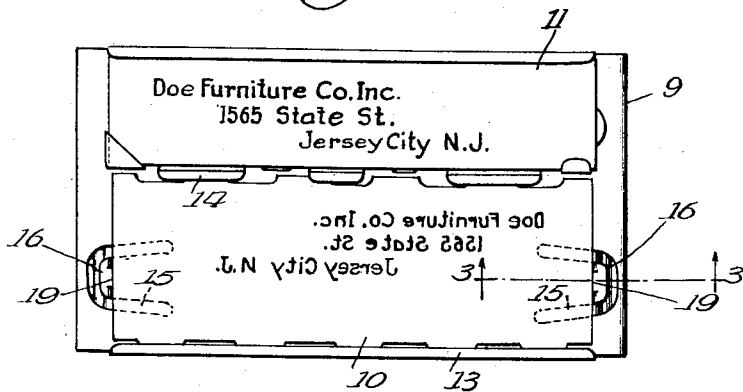


Fig. 2

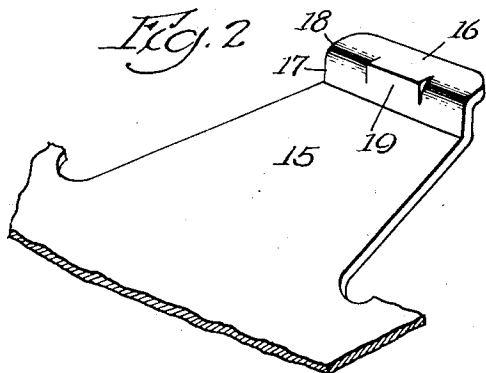


Fig. 3

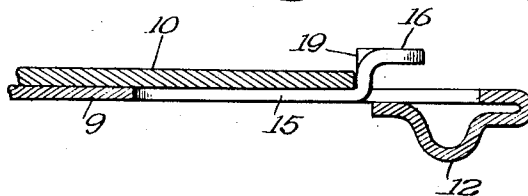


Fig. 4

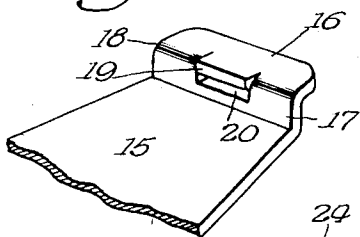


Fig. 5

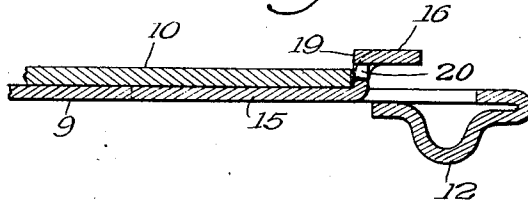


Fig. 6

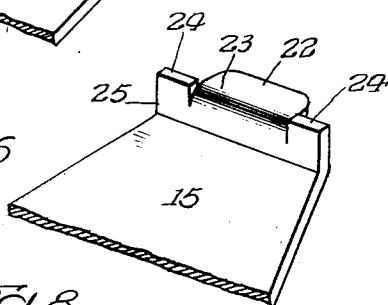


Fig. 7

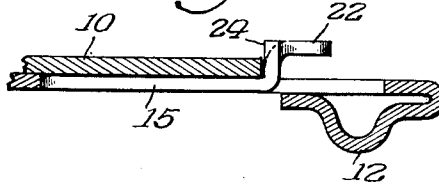
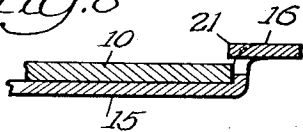


Fig. 8



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UNITED STATES PATENT OFFICE

1,929,472

PRINTING DEVICE

Erhard U. T. Berthelsen, Chicago, Ill., assignor
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a corporation of Delaware

Application October 17, 1931. Serial No. 569,465

7 Claims. (Cl. 101—369)

This invention relates to printing devices of the kind comprising a frame on which an embossed printing plate is detachably held by retaining means integral with the frame, one example being disclosed in the patent to Valentine J. Mohler, No. 1,812,894, patented July 7, 1931.

These printing devices are stored in drawers of cabinets in accordance with a classification system, and are deposited in a magazine of an addressing machine and are sequentially passed through printing position to print addresses and the like, after which they are returned to storage. The retaining means by which the plate is detachably held on the frame comprise resilient tongues having stops thereon which engage the ends of the plate and prevent endwise displacement thereof. By depressing one or the other of the tongues the plate may be slid endwise in the retaining devices and over the depressed tongue and removed from the frame; and a new plate may be inserted by sliding it endwise over the depressed tongue into engagement with the retaining devices. In the Mohler patent referred to, the end portions of the tongues are stepped to form stops with which the ends of the plate are adapted to engage. These stops or steps are formed by bending the tongue and to avoid breaking the metal the outer edge of the stop or step is bent on a radius which will vary somewhat in the work and become greater as the dies wear. Since these stops are formed on the end portions of the spring tongues, it has been found that sometimes a plate may coast over a stop and become dislodged on the frame and even become dislodged therefrom. This may be due to accidental pressure, or to failure of the tongue to return to normal position, or to enlarged radius of the outer bend of the tongue, or to other causes, and it is the primary object of the invention to overcome the liability of the plate being accidentally disengaged from its predetermined position on the frame as defined by the stops on the tongues and the other retaining devices.

And further objects of the invention are to provide the stop with means to prevent the plate from accidentally coasting over the tongue and becoming dislodged from its position on the plate; to provide the stop with a shoulder to compensate for the radius of the bend forming the stop; and to make this shoulder integral with the stop and in the same operation by which the stop is formed.

In the accompanying drawing illustrating selected embodiments of the invention

Fig. 1 is an elevation of a printing device including one form of my invention.

Fig. 2 is a detail enlarged perspective view showing one of the tongues of Fig. 1.

Fig. 3 is an enlarged detail sectional view on the line 3—3 of Fig. 1.

Fig. 4 is a perspective view of a tongue showing another form of the invention.

Fig. 5 is a detail sectional view similar to Fig. 3 but showing the form of the invention of Fig. 4.

Fig. 6 is a perspective view of the tongue showing another form of the invention.

Fig. 7 is a sectional view similar to Fig. 3 showing the form of invention of Fig. 6, and

Fig. 8 is a sectional view showing a modified form of the invention of Figs. 4 and 5.

Referring to the drawing 9 is the frame, 10 is the printing plate, and 11 is an information card which generally bears an impression of the printing plate and is detachably held on the frame. The frame is made of sheet metal and it is provided at its ends and on its back with spacing flanges 12, and on its front with plate retaining devices including the bottom bead 13 for engaging the bottom edge of the plate, the lips 14 for engaging the top edge of the plate, and the yielding locking tongues 15 which have stepped end portions 16 forming stops 17 for engaging the ends of the plate, all of these parts being conveniently stamped from the body of the frame. The end portion 16 forms a finger piece on the tongue by which the tongue may be depressed to clear the stop from the end of the plate and the depression of the tongue is limited by engagement of the finger piece with the spacing flange 12. The outer bend 18 of each tongue is formed on a radius and intermediate of the side edges of the tongue at this bend I provide a shoulder 19, Figs. 2 and 3, which is made as nearly as possible in the form of a right angle with its top in the plane of the extreme end portion or finger piece of the tongue and its side in the plane of the riser of the step which forms the stop 17. This shoulder thus forms a continuation of the stop in the plane of the body thereof as nearly as it could be made in a stamping operation if the outer bend was formed sharply instead of on a radius. It is not practicable in a stamping operation to make this outer bend a right angle throughout its length because of the liability of breaking the metal, but it is practicable to make a part of the bend a right angle to form the shoulder 19, and this shoulder makes the stop

effective from bottom to top for engaging the end of the plate and preventing it from coasting over the rounded parts of the bend at each end of the shoulder.

5 The shoulder may be formed as shown in Figs. 1 to 3 without breaking the metal but it will not be objectionable if the metal is broken as indicated at 20, Figs. 4 and 5. The dies may be made to intentionally break the metal and
10 form a shoulder 21, Fig. 8, which will project inwardly of the frame slightly beyond the riser forming the stop to slightly overlap the end of the plate. A clearance is provided between the ends of the plate and the stops and, therefore,
15 this lip 21 may be employed without interfering with the insertion of the plate on the frame or the removal of the plate therefrom. In Figs. 6 and 7, I have shown another embodiment of the invention in which the end portion or finger
20 piece 22 of the tongue is reduced in width outwardly of the bend 23. Upstanding shoulders 24 at the ends of the bend constitute extensions of the stop 25 and the upper ends thereof terminate in the plane of the top of the finger
25 piece. The riser of the step on the tongue forms the stop which is engaged by the end of the plate and heretofore the effective height of this stop above the body of the tongue has been reduced by the radius of the bend at the top of the
30 stop and, as before stated, it is possible under certain conditions for the plate to coast over this rounded bend and become dislodged from the frame; but in all forms of the present invention the stop is made effective by the shoulder
35 for the full height of the riser and effectually prevents liability of the plate coasting over the stop and requires that the tongue be depressed until the plate clears the shoulder before the plate can be slid over the tongue for
40 removal. The invention greatly increases the efficiency of the tongues as locking retainers for holding the plate on the frame and in all forms of the invention the shoulder can be made without adding to or changing the die operation. In
45 forming the shoulder 19 the metal may not break in some die operations as shown in Figs. 2 and 3 and it may break in others as shown in Figs. 4 and 5, but this is not material since there will always be sufficient strength in the
50 unbroken part of the tongue to support the finger piece 22.

I have shown the invention in a frame having two locking tongues and in several different forms which are suitable for accomplishing the
55 purposes of the invention but it may be embodied in a frame having but one locking tongue and in other forms, and I reserve the right to make any changes within the scope of the invention as defined by the following claims.

30 I claim:

1. A printing device comprising a frame, means on said frame for detachably retaining a printing plate thereon and including a yielding locking tongue having a plate-engaging stop and a finger piece thereon, and means on said tongue
80 having the upper surfaces thereof disposed substantially in the plane of the top of the finger piece and cooperating with said stop to prevent accidental displacement of the plate from the frame.

2. A printing device comprising a frame, means on said frame for detachably retaining a printing plate thereon and including a yielding locking tongue having a plate-engaging stop and a finger
90 piece thereon, and a shoulder on said tongue having the upper surface thereof aligned with the upper surface of the finger piece, said shoulder cooperating with said stop to prevent accidental displacement of the plate from the frame.

3. A printing device comprising a frame, means on said frame for detachably retaining a printing plate thereon and including a yielding locking tongue having a plate-engaging stop and a finger
95 piece thereon, and a shoulder formed on said stop and aligned with the finger piece and increasing the effective area of the stop to prevent accidental displacement of the plate from the frame.

4. A printing device comprising a frame, means on said frame for detachably retaining a printing
105 plate thereon and including a yielding locking tongue stepped to form a stop and a finger portion, the bend in the tongue connecting the stop and finger portion being rounded, and a shoulder at said bend and of less length than
110 the stop forming a continuation of the stop at the bend, said shoulder having the upper surface thereof disposed substantially in the plane of the top of the finger piece.

5. A printing device comprising a frame, an integral locking tongue stamped from the frame
115 and stepped to form a stop and a finger portion, and a shoulder formed on the stop and projecting away from the finger portion toward the inner end of the tongue.

6. A printing device comprising a frame, an integral locking tongue stamped from the frame
120 and stepped to form a stop and a finger portion, and a shoulder on the stop projecting away from the finger portion in substantially the plane of the finger portion.

7. A printing device comprising a frame, means on said frame for detachably retaining a printing plate thereon and including an integral locking
130 tongue stamped from the frame and stepped to form a stop and a finger portion, and a shoulder on the stop projecting away from the finger portion to overlie the adjacent end of the plate.

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