March 18, 1941. J. KRELL 2,235,376

ADDRESSING PRINTING PLATE WITH EXCHANGEABLE RIDERS

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Fig.2

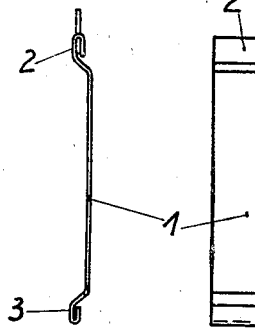


Fig.1

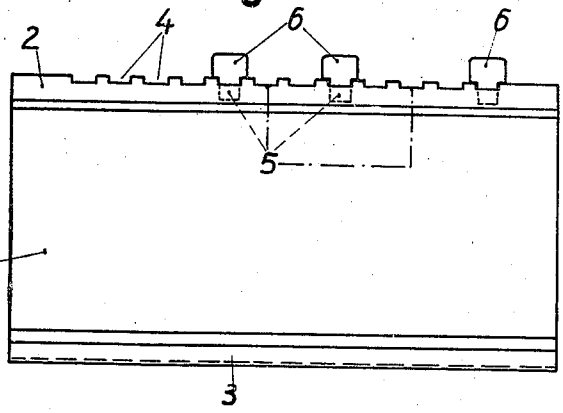


Fig.4

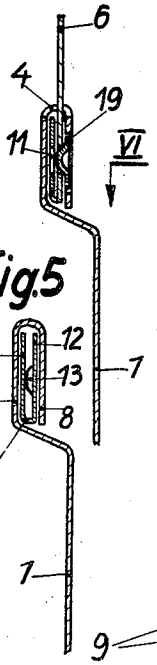


Fig.3

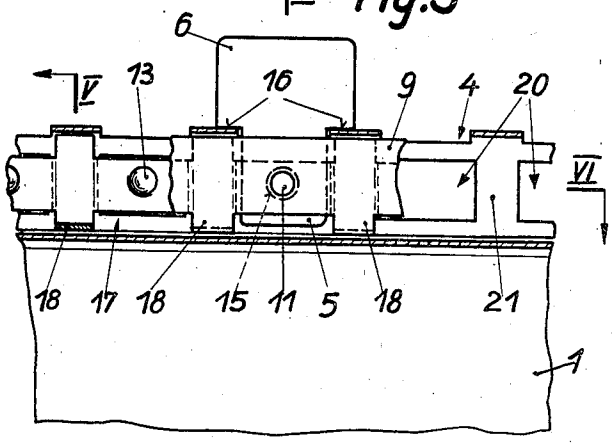
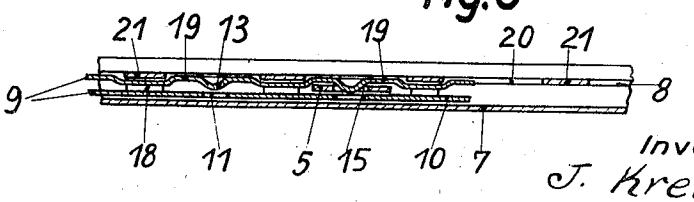


Fig.5



Fig.6



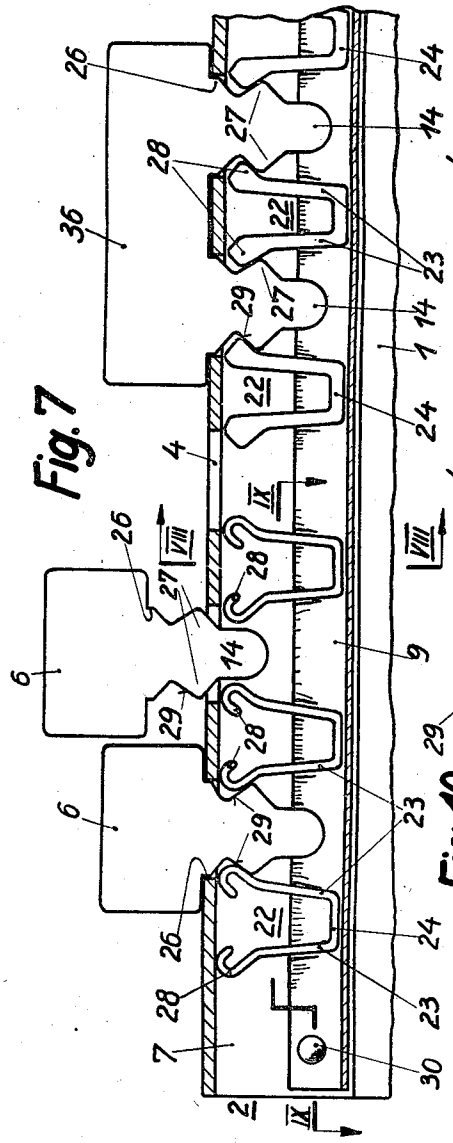
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J. Krell

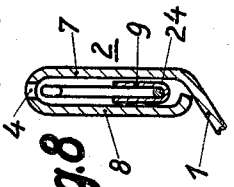
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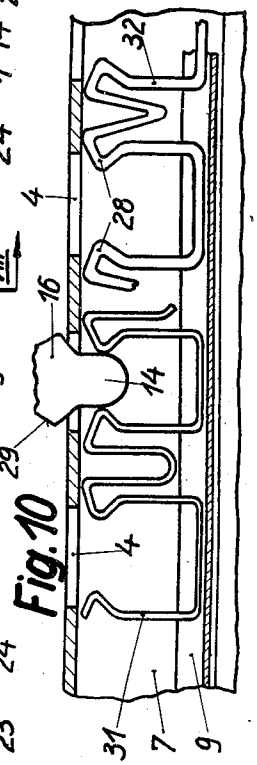
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ADDRESSING PRINTING PLATE WITH EXCHANGEABLE RIDERS

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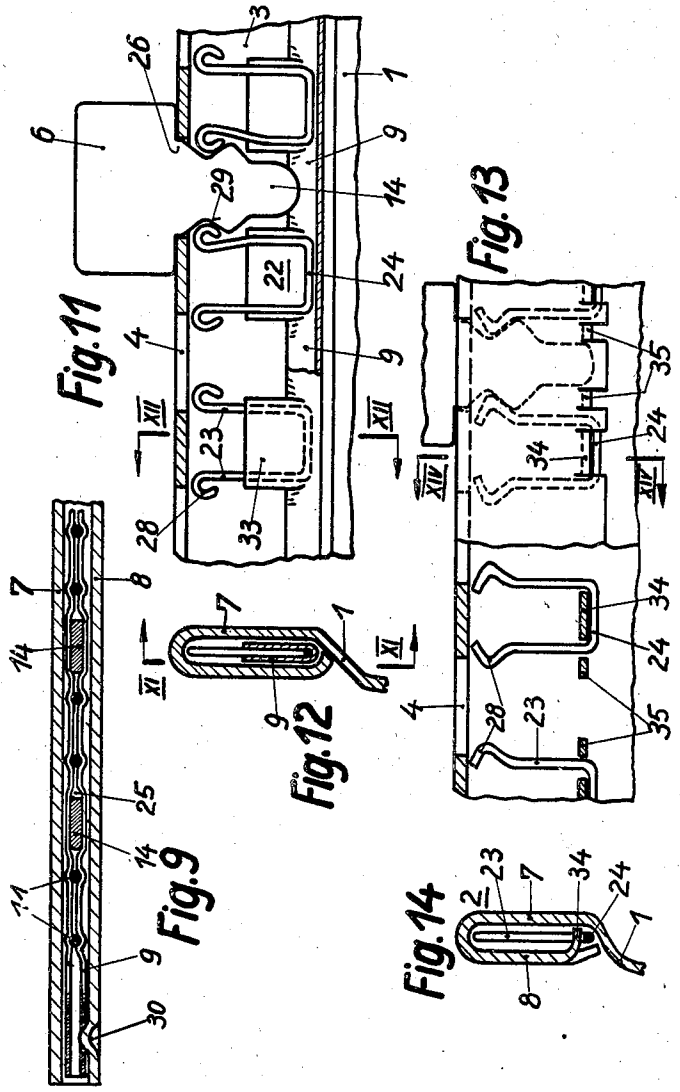
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ADDRESSING PRINTING PLATE WITH EXCHANGEABLE RIDERS

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UNITED STATES PATENT OFFICE

2,235,376

ADDRESSING PRINTING PLATE WITH EXCHANGEABLE RIDERS

Joseph Krell, Berlin-Zehlendorf, Germany

Application November 9, 1939, Serial No. 303,676
In Germany November 10, 1938

12 Claims. (Cl. 101—369)

With addressing printing plates of zinc, aluminium or other materials adapted to be stamped which are successively guided along through the addressing printing machine in their longitudinal direction and are, therefore, at both longitudinal sides provided with guide rims consisting of sheet-metal strips or strips of another metal folded upon one another, providing the plates with riders adapted be put thereon presents certain difficulties. The known addressing plates of said type are at the outer edge of the upper guide rim provided only with a plurality of insertion slots or recesses arranged side by side and intended to receive the exchangeable riders, whereas the riders themselves are provided with springs or their foot parts are so designed as to be elastic, in such a manner, that they clamp fast themselves with aid of said springs or their elastic parts at the plate after they have been inserted into the guide rim.

This manner of putting the riders upon the addressing printing plates has, per se, proved successful, but, anyhow, the disadvantage has been experienced that the manufacture of the riders is very complex and expensive owing to the materials to be dealt with.

Besides, there exists with addressing printing plates provided with riders of the known construction the risk that as the riders are held in place by the edges of insertion slots in the guide rim of the addressing plates and these plates themselves are made of a comparatively very soft material, the edges of the slots at which the riders are to adhere and over which the springs or the elastic parts of the riders snip away are shaved off when the riders are often times exchanged, in consequence whereof the riders loose their proper hold. Furthermore, with the known manner of placing the riders upon the plates, the riders are not completely reliably protected from being displaced in the plane of the plates.

All these drawbacks are obviated in and by the improved design of the addressing printing plates as forms the subject matter of the present invention.

A characteristic feature of the invention is that the springs which had up to now been individually arranged at the individual riders are now connected with one another and inserted in common into the hollow space of the guide rims of the printing plates. While up to now the springs attached individually to the individual riders rubbed at the guide rim of the printing plate when the riders were inserted at the edges of the insertion slots, the springs when being arranged according to the present invention rub at the edges of the riders. Therefore, only the easily exchangeable and cheap riders are subjected to wear and tear, but not the printing plates themselves. The arrangement according to this invention presents, besides, the further advantage that this new manner of fastening is applicable also with old printing plates, in that the springs which are connected with one another can easily be subsequently inserted into the hollow guide rims. As the riders are simple smooth stamped pieces made preferably of differently coloured artificial materials, they can be manufactured at a low price.

According to a particular constructional form of the invention the springs consist of a bent or stamped piece which constitutes a unit and extends essentially over the entire length of the plate.

In order to provide for a proper assemblage of the individual springs there can, according to this invention a separate rail be provided to which the individual springs are attached. It is suited to the object in view to employ a rail having a U-shaped profile and such a height that the lower ends of the foot parts of the riders engage correspondingly arranged and shaped recesses provided between the legs of the rail.

A particularly advantageous constructional form consists therein that the rail itself is elastic so that separate springs can be dispensed with. With this constructional form the legs of the rail clamp the rider between them transversely with respect to the plane of the riders and a particularly good elastic action is obtained in that the legs of the rail are held together by webs solely between the insertion places.

Further characteristic features will be disclosed in the following detailing part of this specification.

The invention is illustrated diagrammatically and by way of example on the accompanying drawings on which Figure 1 is a plan of a piece of an addressing printing plate shown in natural size. Figure 2 is a side-view of the piece shown in Figure 1. Figure 3 is an illustration of that portion of the piece shown in Figure 1 which is indicated by a dotted line, this figure being drawn to an enlarged scale and partly in section. Figure 4 is a section through the implement in the plane IV—IV of Figure 3. Figure 5 is a section in the plane V—V of Figure 3. Figure 6 is a section in the plane VI—VI of Figure 3. Figure 7 is a longitudinal section through a part of a guide rim of an addressing printing plate, this

figure showing a modified constructional form. Figure 8 is a section in the line VIII—VIII of Figure 7. Figure 9 is a section in the plane IX—IX of Figure 7. Figure 10 shows another constructional form of the invention. Figure 11 shows still another constructional form. Figure 12 is a section in the plane XII—XII of Figure 11, and Figures 13 and 14 show also a modification in longitudinal section and in transverse section.

The addressing printing plate 1 which consists of zinc, aluminium or another material adapted to be stamped is at its two longitudinal sides provided with guide rims 2 and 3 consisting of sheet-metal strips folded upon one another. The guide rim 2, which may, for instance, be assumed to be the upper one has insertion slots 4 that are to receive the foot parts 5 of riders 6. These are formed of simple plates, for instance, stamped pieces which may consist of any desired suitable material, as, for instance, a metal, Celluloid, an artificial horn, or another artificial composition.

Figures 3–6 show a preferred constructional form of the means for fastening the riders in the guide rim of the plate. Into the guiding hollow spaces formed by strips 7 and 8 folded upon one another is inserted a U-shaped rail 9 made of an elastic sheet-metal. The leg 10 of the elastic rail is a strip-shaped piece provided with holes 11 spaced in conformity with the distance between the insertion slots 4. Concentrically with these holes the leg 12 of the elastic rail is provided with inwardly directed conical impressions 13. The foot part of a rider 6 to be inserted through one of the insertion slots has a hole 15, the arrangement of which is such that when a rider is inserted and the projection 13 forming part of the elastic rail and pertaining to the respective insertion slot slips into the hole 15 and exerts on the rider 6 a pull in the direction of the insertion so that the rims 16 of the rider 6 contact firmly with the upper rim of the pressure plate.

The elastic rail itself is held in its proper position in a simple manner by means of within the guiding hollow space one or several inserted riders of the addressing printing plate. If no rider proper is necessary at the place concerned of the plate a false rider may be substituted at any desired place for retaining the rail, that substitute rider being not intended to designate the plate but to serve merely as an auxiliary means for the elastic rail. In order to obtain a good elasticity between the legs of the elastic rail the web connecting said legs with one another is interrupted and divided in correspondence with the insert subdivision, in such a manner, that broad recesses 17 are formed and the legs are connected with one another only across narrow webs 18. In order to obtain a possibly flat contact between the legs and the foot parts of the riders the leg 12 having the projections 13 is provided with elevated portions 19 (Fig. 6). Corresponding with these portions recesses 20 are provided in the strip 8 of the addressing printing plate. The webs 21 remaining between the recesses 20 of the strip 8 serve as holding members for the guide rim of the plate and prevent the legs 10 and 12 of the elastic strip 9 from being widened out.

The just described constructional form of the invention presents the particular advantage that the holding device for a plurality of riders of a guide rim, or even for all of them, consists of only one piece which, moreover, can be manufactured in a very simple manner by pressing and bending round. Besides, all riders can consist of any desired suitable material and their shape may be the simplest imaginable.

In the further constructional forms illustrated in the Figs. 7–12 separate springs 22 are affixed to the rail 9, these springs taking hold of the feet of the riders no more transversely to the main plane of the riders, but in this plane itself which entails a somewhat modified form of said feet, as described hereinafter. The springs 22 may consist either of a bent elastic wire or, as assumed in the right-hand portion of Fig. 7, of pieces stamped out of an elastic steel band. The two legs 23 of every spring tend to spring outwardly. The springs 22 are located, together with their connecting rods 24, in the rail 9 which, as appears from Fig. 9, passes closely around the webs 24 and the parts of the legs 23 joining said webs. Between every two springs a recess 25 (Fig. 9) is provided, the clear width of which is equal to the thickness of the riders and the length of which corresponds with the breadth of the foot part 5 of the same.

In order to retain the riders reliably in the guide rim the foot parts 5 of the riders which (apart from the upper foot part 26) are with this constructional form, narrower than the insertion slots are provided with lateral lugs having, for instance, a triangular shape. When a rider is shoved into an insertion slot said lugs press the correspondingly bent head parts 28 of the adjacent elastic legs 23 rearwards and these head parts spring over the lugs 27 when the riders have been inserted. The design of the head parts 28 of the springs 22 and of the lugs 27 of the riders 6 is, in this case, such that said head parts exert upon the riders an inwardly directed pressure, in that they contact with the oblique edges 29.

The rail 9 and the springs 22 are preferably inserted into the hollow space of the guide rim from one of the frontal sides only after the addressing printing plate has been finished, and said members 9 and 22 are then secured in their places for instance by a cone 30 or, as has already been mentioned, by a false rider, in such a position that the springs 22 assume, for instance, such positions relatively to the insertion slots 4 as are illustrated in Fig. 7.

The constructional form shown in Fig. 10 differs from the above described form by the feature that the springs 22 for the riders are formed either of correspondingly bent elastic wire 31 extending over the entire length of the addressing printing plate or of a correspondingly shaped stamped piece 32 of an elastic steel band likewise extending over the entire length of the plate. With this constructional form the lower connecting webs of the elastic legs lie below the insertion slots 4. Also with this modification it may be suited to the object in view to stiffen the springs by a rail 9.

With the further modifications shown in the Figs. 11 and 12 the rail 9 is at those places where the springs 22 are attached to it provided with shoe-shaped projections 33 extending over the lower ends of said springs.

In the Figs. 13 and 14 is shown how the springs 22, consisting either of wire or of stamped pieces, can be anchored in the hollow guide space without the employment of a rail. After the springs (which may be connected with one another by distance members, not shown) have been inserted lugs 34 are stamped out of the rim strip 8 and bent inwardly in such a man-

ner that they extend over the connecting webs 24 of the springs 22. Furthermore, lugs 35 are stamped out of the free ends of the strip 8 and are bent inwardly whereby the lower ends of the foot parts 5 of the riders are secured in their place. With this modification the springs 22 can be placed upon the plate strip prior to the finishing folding of the guide rim whereafter the strip is finished by bevelling and the lugs 34 and 35 are inwardly pressed.

With the several constructional forms described the elastic members may be manufactured of a material other than steel, provided, that the respective other material is sufficiently elastic, as well as strong.

The riders may be individual riders or multiple ones. In the right-hand half of Fig. 7 a double rider 36 is illustrated as an example.

I claim:

1. In combination with an addressing printing plate consisting of a material adapted to be stamped and having at both its longitudinal sides folded hollow guide rims, of which at least one is provided along its outer edge with a plurality of insertion slots arranged side by side and adapted to receive riders, springs connected with one another and adapted to be shoved in common into the hollow space of said guide rim and to secure said riders in their operative position.

2. An addressing printing plate as specified in claim 1, in which the springs consist of a unitary form piece extending substantially over the entire length of the plate.

3. In combination with the addressing printing plate and the springs, as specified in claim 1, a rail to which the springs pertaining to the various insertion slots are attached.

4. In combination with the addressing printing plate and the springs, as specified in claim 1, a rail to which the springs pertaining to the various insertion slots are attached, said rail having a U-shaped profile and such a height that the lower ends of the foot parts of the riders can engage corresponding recesses provided between the rail legs.

5. In combination with the addressing printing plate and the springs, as specified in claim 1, an elastic rail adapted to clamp the feet of the riders fast with its legs transversely to the plane of the legs.

6. In combination with the addressing printing plate, the springs, and the riders, as specified in claim 1, an elastic rail adapted to clamp the feet of the riders fast with its legs transversely to the plane of the legs, said rail having projections and said riders having recesses adapted to be engaged by said projections.

7. In combination with the addressing printing plate, the springs and the riders, an elastic rail adapted to clamp the feet of the riders fast with its legs transversely to the plane of the legs, the plate-guiding rim having recesses at least on one side of said rail and within the range of the rail section giving way when a rider is inserted or withdrawn.

8. In combination with the addressing printing plate, and the springs, as specified in claim 1, a rail to which the springs pertaining to the various insertion slots are attached, said rail having projections engaging corresponding recesses of the guide rim of said plate and being adapted to secure its position within the guide rim.

9. In combination with the addressing plate, the springs, and the riders, specified in claim 1, a rail to which the springs pertaining to the various insertion slots are attached, the legs of said rail being held together solely between the places where said riders are to be inserted.

10. In combination with the addressing printing plate, the springs, and the riders, as specified in claim 1, a rail to which the springs pertaining to the various insertion slots are attached, said rail being provided with shoe-like lugs engaged by the lower ends of said springs.

11. An addressing printing plate combined with springs as specified in claim 1, and having lugs bent out of it in its guide rim and taking hold of said springs.

12. An addressing printing plate combined with springs as specified in claim 1, and having lugs bent out of it in its guide rim and taking hold of said springs, as well as lugs bent inwardly out of the bevelled guide rim and serving for guiding laterally the lower ends of the foot parts of the inserted riders.

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