Sept. 17, 1929. W. E. HERMANCE 1,728,207

METHOD AND MEANS FOR STRAIGHTENING PRINTING PLATES

Filed Aug. 13, 1927

Fig. 1.

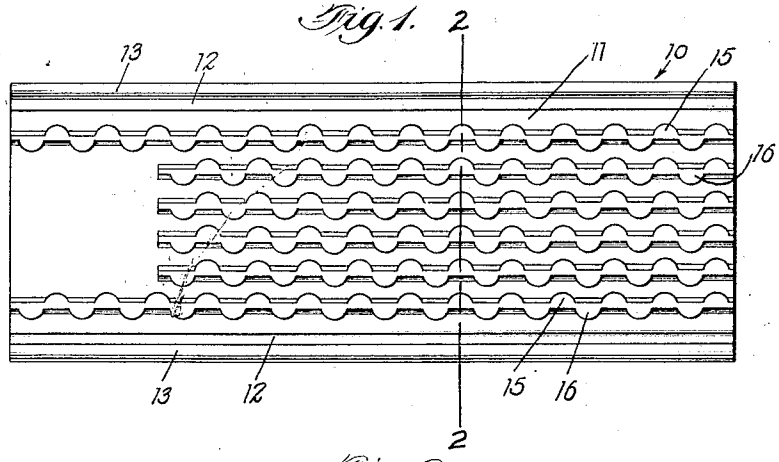


Fig. 2.

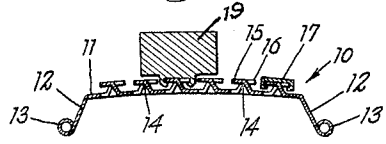


Fig. 4.



Fig. 5.

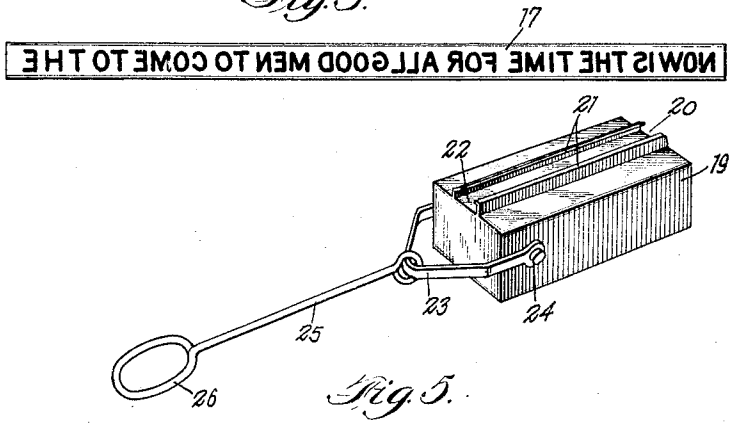


Fig. 5.

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UNITED STATES PATENT OFFICE

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METHOD AND MEANS FOR STRAIGHTENING PRINTING PLATES

Application filed August 13, 1927. Serial No. 212,801.

This invention relates generally to printing plates adapted to be readily mounted in a printing machine, such as disclosed in the Osborne Patent No. 1,628,630, issued May 10, 1927, and more specifically to a tool so constructed as to greatly facilitate the operation of straightening and re-aligning any distorted lips 17 and 18, of such patented structure whereby to restore them to a condition necessary to readily receive the customary printing strip carrying the embossed indicia.

Plates of the character referred to are usually constructed of very light sheet metal, and, after considerable usage, or careless manipulations, the thin lips 17 and 18, as above referred to, often become so distorted as to destroy the necessary parallelism therebetween, rendering it impossible to slide the printing strip into operative position. Under such circumstances it has hitherto been the custom to discard the relatively inexpensive distorted plate.

The object of the present invention therefore, is the provision of means adapted for manipulation to quickly and effectively restore to parallelism any distorted lips in the plate, and to the method of manipulating said means.

Other objects of the invention will be made apparent in the following specification, when read in connection with the drawings forming a part thereof.

In said drawings:

Fig. 1 is a top plan view of a printing plate such as referred to.

Fig. 2 is a section on the line 2—2 of Fig. 1.

Fig. 3 is a top plan view of the printing strip.

Fig. 4 is a section taken transversely through the strip shown in Fig. 3, and

Fig. 5 is a perspective view of the straightening tool.

Now referring specifically to the drawing, in which like reference numerals indicate like parts throughout the several views, 10 indicates the printing plate, formed of thin sheet metal, usually of tin or of a relatively cheap malleable alloy, and of inverted trough-like formation. The top 11 of the plate may be flat or arcuate shaped, depending upon the configuration of the bed upon which it is to be used, and is provided with a leg portion 12 on each side, preferably terminating in a bead 13, at the bottom of each leg 12. As will be understood, the beads 13 not only stiffen the plate, but provide members which may enter suitably formed grooves in the bed of the printing machine, whereby to firmly retain the plate in position during the printing operation.

As shown the plate is provided with a plurality of longitudinally extending corrugations 14, carrying lips 15 and 16 elevated above the body portion of the top 11. As particularly illustrated in Figs. 1 and 2, the top wall of each corrugation 14 carries a row of the lips 15 on one side, and another row of the lips 16 on the other side of the central line of the said corrugations, the lips 15 and 16 projecting laterally from said line in diametrically-opposed directions and in staggered relation, and providing a space or grooves between the bottom face of each lip and the adjacent inclined wall of the corrugation 14.

Figs. 3 and 4 illustrate the printing strip 17 carrying type or other indicia on its upper surface, the strip being formed of metal, and constructed with a lower trough-like surface defined by inwardly curved walls 18 adapted to fit over the lips 15 and 16 on the plate 10, the relative proportions and construction being such as to ensure a close fit between the strip 17 and the lips 15 and 16, whereby to firmly retain the strip in its operative position. It is extremely necessary for the strip 17 to closely fit upon the lips 15 and 16 in order that it be held immovable during the printing operation, as will be understood. In removing the strips 17 for the application of another strip bearing different indicia, it has been customary to utilize a tool, such as a screw driver, to push the strip longitudinally over and entirely off the lips 15 and 16, but this operation necessitates a steady pressure which very often distorts said lips, resulting in

serious difficulty when the new strip is to be applied.

The present invention provides a tool 19 adapted not only for the purposes of straightening any distortion of the lips 15 and 16 and restoring the latter to the proper configuration, but also useful in removing the strips 17 from the plate 10. Said tool 19 is best shown in Fig. 5, and preferably comprises a block of tool steel provided on its lower surface with a longitudinally-extending raised trough 20 which is milled therein, and defined by vertically and inwardly extending walls 21. The interior width and shape of the groove 20 is identical with that of the groove formed in the strip 17 and defined by the walls 18.

A bail member 23, provided with an arm pivoted at 24 to each side of the tool 19, and a pull rod 25, terminating in a ring or finger piece 26, is pivotally secured to the bail 23.

In utilizing the tool 19 for the purpose of restoring the lips 15 and 16 to their original configurations in parallelism each to each, the tool 19 is inverted from the position shown in Fig. 5 and the front end of the groove 20 is placed over the front end of one of the rows of lips 15 and 16. In this position the tool is forcibly pulled longitudinally of the row by means of the finger piece 26 and rod 25, and such action will obviously cause the inwardly extending flanges or walls 21 to pass under and in close contact with the top, bottom and side edges of the lips 15 and 16, and restore them to their original configuration. Since the plate 10, and therefore the lips 15 and 16 are always formed of a material which is more or less malleable, said lips retain their initial shape after the tool has been pulled entirely along said row and removed therefrom, as will be clearly understood, and the lips will therefore be in such alignment that the new printing strip 17 may easily be placed in operative position.

It is perfectly clear that the tool is equally useful in removing one or a plurality of printing strips 17 from the plate. In such use of the tool it is operated in exactly the same manner as heretofore described, except that it is moved longitudinally of the row so that the forward ends of the walls 21 contact the end of any strip 17 which may be in position on the lips 15 and 16, and continued movement of the tool pushes the strip along the row of lips until the former is entirely removed.

While I have herein described the tool 19 as equipped with only one longitudinal groove 20, it is obvious that a plurality of such grooves may be arranged in parallelism thereon, adapting the tool for use such that one operative movement thereof longitudinally of the plate 10 and in engagement with the lips 15 and 16, will simultaneously straighten the lips of a plurality of rows on the plate, or will remove any printing strip mounted on any or all of said rows.

Modifications of the structure herein disclosed may be suggested to those skilled in the art, but my invention covers all embodiments falling fairly within the scope of the appended claims.

What I claim is:

1. A tool for aligning oppositely extending lips of printing strip holders, comprising a slide provided with a longitudinal channel having defining walls adapted for sliding engagement with the edges of oppositely positioned lips and with the top and bottom faces thereof.

2. A tool for aligning oppositely extending lips of printing strip holders, comprising a slidable block provided with a longitudinal channel defined by vertically and inwardly directed flanges adapted to engage the top and bottom faces of said lips.

3. A tool for aligning oppositely extending lips of printing strip holders, comprising a slidable block provided with a longitudinal channel defined by vertically and inwardly directed flanges adapted to engage the top and bottom faces and the edges of said lips.

4. A tool for aligning oppositely extending lips of printing strip holders, comprising a slidable block provided with a longitudinal channel defined by vertically and inwardly directed flanges adapted to engage the top and bottom faces of said lips, and a handle connected to said block.

5. A tool for aligning oppositely extending lips of printing strip holders, comprising a slidable block provided with a longitudinal channel defined by vertically and inwardly directed flanges adapted to engage the top and bottom faces of said lips, a bail pivoted to said block, and a pull rod connected to said handle.

6. A straightening tool for use on printing plates having lips arranged in a double row extending longitudinally of the plates and above the body thereof, comprising a member slidable over said row and provided with a channel having defining flanges adapted to contact the edges and the lower surfaces of oppositely positioned lips.

7. A straightening tool for use on printing plates having lips arranged in a double row extending longitudinally of the plates and above the body thereof, comprising a member slidable over said row and provided with a channel spanning said double row and including a top portion contacting the top of oppositely positioned lips, and having defining flanges adapted to contact the edges of and the lower surface of said lips.

8. The method of restoring the alignment

of bent units of a double row of lips of a printing strip holder, which consists in forcibly sliding over said row a member equipped with a channel having flanges positioned for frictional contact with the tops and bottoms of said units.

In testimony whereof I affix my signature.

WILLIAM E. HERMANCE.