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O. B. MEYERS

1,979,045

PRINTING DEVICE

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Fig. 1.

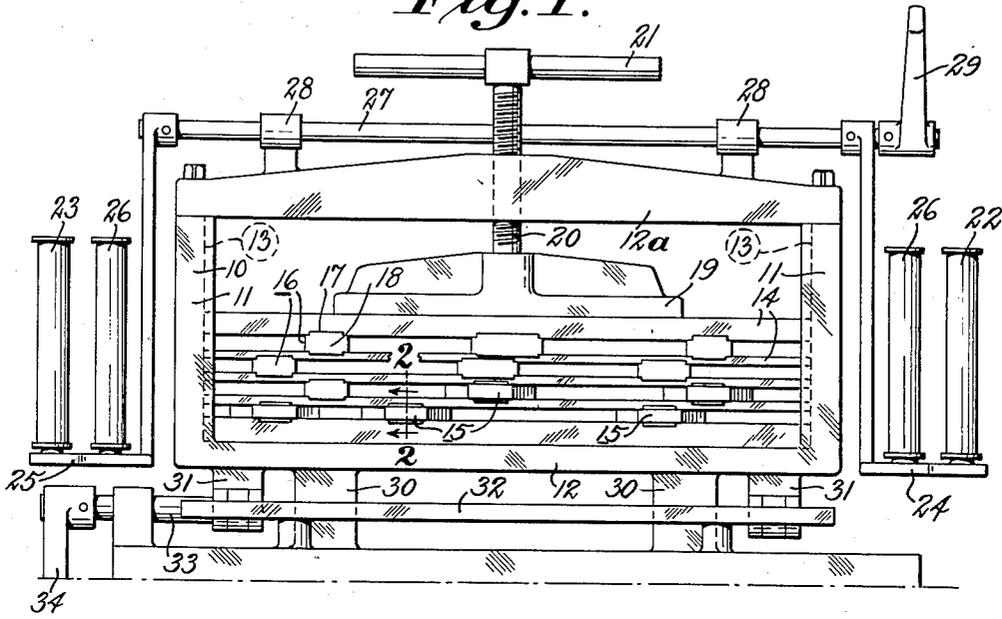


Fig. 2.

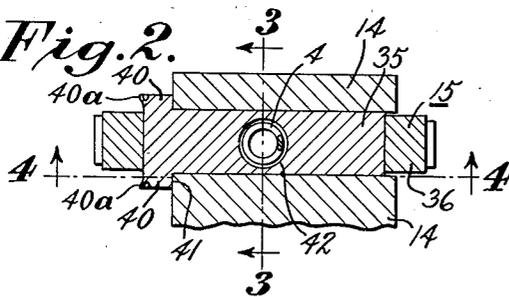


Fig. 3.

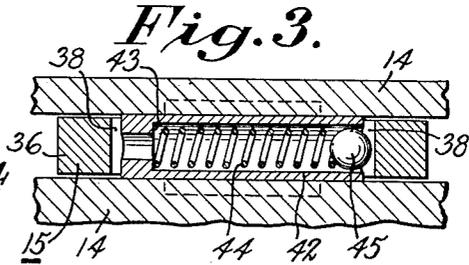


Fig. 4.

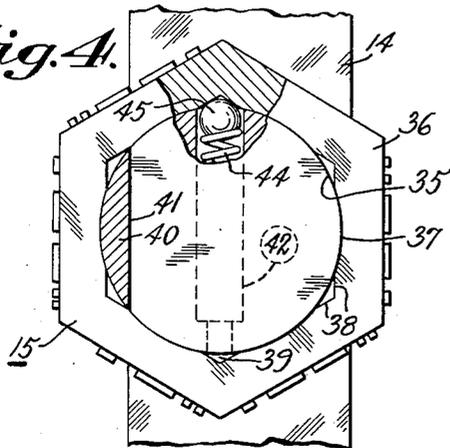


Fig. 5.



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UNITED STATES PATENT OFFICE

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PRINTING DEVICE

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Application April 20, 1932, Serial No. 606,311

15 Claims. (Cl. 101—110)

My invention relates to the art of printing and particularly to apparatus especially adapted for printing labels or the like.

In printing labels it is often and usually desirable to print a large number of labels which are identical except with respect to some minor portion thereof, such as the designation of the size, color, style or the like or the contents of the package to which the label is to be affixed. For instance, in printing labels for use on boxes containing collars, the label for any one manufacturer would be the same except the designation of the style of the collar and the size. The size and style would be the same for a given number of labels and then it would be desirable to print another given number of labels bearing a different size and/or style designation.

Heretofore it has been the practice to print labels of this nature by means of a machine in which the type is set up in a rack or chase. The members carrying the type are clamped between racks of parallel bars and, if it is desired to change even one type bearing member, it is necessary to loosen the entire chase.

One of the objects of my invention is to provide a type bearing element which may be clamped in place in such a rack or chase, the element having a plurality of faces bearing different type and so arranged that it may be rotated, while clamped firmly in the chase, in order to bring the different type into operative position. Thus, when printing a number of labels differing only in the color, size or the like designation, it is possible to change the type without dismantling the chase.

A further object of my invention is to provide a device of this nature which is simple, cheap to manufacture and which may be readily changed.

Further objects and advantages of my invention will be apparent from the following description considered in connection with the accompanying drawing which forms a part of this specification and on which:

Fig. 1 is a front view of a frame or chase showing several of my improved members in position;

Fig. 2 is a cross-sectional view of one of the members and is taken on the line 2—2 of Fig. 1;

Fig. 3 is a cross-sectional view taken on the line 3—3 of Fig. 2;

Fig. 4 is a cross-sectional view taken on the line 4—4 of Fig. 2; and

Fig. 5 is a front view of the improved printing member.

Referring more particularly to Fig. 1, reference

character 10 designates generally a frame or chase in which the type is set up. The frame is generally rectangular in shape and comprises a pair of vertical side members 11, a lower horizontal side member 12 and an upper horizontal side member 12a. The vertical side members 11 are formed with grooves 13 in their inner faces. A plurality of bars 14 extend parallel to the upper and lower side members and have their ends in sliding engagement with the vertical side members 11 by virtue of the fact that said ends extend into the grooves 13. The lowermost bar 14 may be integral with lower side member 12.

The printing members are designated generally by reference characters 15 and 16. Members 16 are of known form and comprise blocks having shoulders 17 and front faces 18. The faces 18 carry type. The printing members 16 print the portion of the label which remains unchanged, such as the manufacturer's name, trade-mark, address or the like.

The printing members 15 form, per se and in combination with the rest of the device, the subject matter of this invention, and, as will appear hereinafter, are so formed that the same printing member is capable of printing several different things. These printing members carry the type for printing size, color, style or the like designations which it is usually desirable to change, while retaining the same setup for the rest of the label.

A pressure plate 19 is arranged to bear against the uppermost bar 14 and is forced thereagainst by means of a threaded member 20 engaging a threaded hole in upper side member 12a. Member 20 is preferably provided with a handle 21 for rotating it.

In the printing device shown for the purposes of illustration, the ink is applied by means of a ribbon, as in a typewriter. This ribbon travels back and forth between spools 22 and 23 rotatably mounted in arms 24 and 25, respectively. Any suitable means may be provided for rotating the spools in order to wind the ribbon off one spool and onto the other. Rollers 26 are provided to guide and properly position the ribbon. Arms 24 and 25 are secured to a rotatable shaft 27 which is mounted in bearings 28. Shaft 27 is provided with a handle 29 for rotating it in order to raise the arms 24 and 25 carrying the spools 22, 23 and 26 and to thus move the ribbon from in front of the type. This is desirable in order that easy access may be had to the type for setting it up and for changing any of the printing members 15.

The frame or chase 10 is rigidly supported by means of arms 30. Secured to chase 10 by means of hinges 31 is a table or platen 32. The label to be printed is placed on platen 32 and the platen is rotated about hinges 31 so as to carry the label up and press it against the ribbon located in front of the type carried by chase 10, whereby the ribbon is pressed between the label and the type and prints the label. One of the pins 33 of hinges 31 may be rigidly secured to the portion of the hinge which is attached to table 32 and may thus be employed to rotate the table upwardly towards the type. To effect this rotation, a handle 34 is secured to the end of pin 33.

In Figs. 2 through 5 there is illustrated in detail my improved printing member. The member comprises a cylindrical core 35 having flat upper and lower ends. The ends are parallel and preferably machined so as to provide flat surfaces for clamping between pairs of bars 14. Rotatably mounted on core 35 is a type-bearing element 36 which is formed with a plurality of outer faces. For purposes of illustration, it is shown with six outer faces. Element 36 is provided with a central opening which is made up of a plurality of cylindrical surfaces 37, the number of such surfaces corresponding to the number of outer faces. Cylindrical surfaces 37 are separated by pairs of plane surfaces 38 meeting to form an angular recess 39. The thickness of core 35 is slightly greater than the thickness of element 36, for example five thousandths of an inch, as is clearly shown in Figs. 2, 3 and 5 in order that the core may be clamped between a pair of bars 14 without the bars clamping the rotatable element 36. On each side of core 35 there is provided a projection 40 adjacent to the circumference of the core. Each projection 40 has an aligning surface 41 which lies in a plane of a chord of the cylindrical core. When the printing member is placed in position between a pair of bars 14, the aligning surface 41 bears against the front faces of the bars, as is shown particularly in Fig. 2, and positions the printing member.

Core 35 is provided with a hole 42 extending from the cylindrical surface of the core some distance into the core. The hole may extend for the entire diameter of the core, as is shown particularly in Fig. 3, in which case a shoulder 43 is provided. A coil spring 44 is contained within hole 42 and bears against shoulder 43 and against a ball 45. Spring 44 and ball 45 comprise a spring pressed detent which is adapted to engage the recesses 39 formed in the inner surface of element 36. Thus, when ball 45 is in engagement with one of these recesses, the element 36 is retained in a desired position with relation to core 35 and some force in a rotational direction is required to displace it.

Inasmuch as the thickness of core 35 is slightly greater than that of element 36, the latter is capable of slight movement in an axial direction between bars 14 when the printing member is clamped in place. However, the difference in thickness is only in the nature of five thousandths of an inch, and hence this slight movement is unobjectionable. If, however, it is desired to prevent this movement, a groove may be formed in each of the plane surfaces 38 to receive ball 45 and to thus center element 36 axially with respect to core 35. The circumferential edges of projections 40 may be spread by a center punch in order to form small projections 40a. These projections 40a serve to prevent element 36 from

sliding axially off core 35 when the printing member is removed from the chase. By aligning projections 40a with one of the recesses 39, element 36 may be removed from core 35 but the engagement of ball 45 with one of the recesses prevents such alignment from occurring accidentally.

The faces, or some of them, of element 36 are provided with printing type, the type on different faces being different. In Fig. 5, the three faces shown bear type for printing 15", 15¼" and 15½". Obviously, the type on these faces could be for printing the names of different styles, colors or like designations.

In operation, the type is set up by loosening pressure plate 19 so that pressure on the bars 14 is relieved. Printing members 16 bearing the manufacturer's name, trade-mark and the like, which are to remain unchanged during the printing of all the labels, are put in their proper positions between the bars 14. Likewise, the printing members 15 bearing size, color or the like designations are placed between bars 14 in the desired position. Thereupon the pressure plate 19 is screwed down and the bars 14 serve to clamp the printing members 15 and 16 tightly in position. The paper on which the label is to be printed is placed on table or platen 32 and handle 34 is rotated so that table 32 carries the paper up against the ribbon, which is in turn pressed against the type.

After a number of labels have been printed bearing, for instance the size designation 15" and it is desired to print a number of labels bearing the size designation 15¼", it is only necessary to raise the ribbon out of the way by means of rotating handle 29 and to then rotate element 36 of the printing member which bears the type for printing the size designation while this element remains in the chase. Element 36 is rotated until 15¼" appears in front and the element is automatically retained in the proper position by means of ball 45 engaging recess 39. Thereupon, the ribbon is again lowered into place and the printing operation continued.

It will thus be seen that by means of my improved device the changing of one or more of the words or numbers printed on a label may be easily and quickly done without tearing down the entire setup of type. Obviously, as many or as few of my improved printing members may be employed in any given setup of type as the occasion may demand.

While I have described one or more less specific embodiment of my invention, it is to be understood that this is for purposes of illustration only and it is intended that modifications thereof shall fall within the scope of my invention, which is to be limited only by the appended claims viewed in the light of the prior art.

What I claim is:

1. In a printing device, a rectangular frame, a bar parallel to one side of said frame, the ends of said bar having sliding engagement with opposite sides of said frame, a member between said bar and said first-mentioned side of said frame, said member comprising a central core, the opposite ends of said core providing clamping surfaces, a type-bearing element rotatably mounted on said core, said element having a plurality of faces and type mounted on some of said faces, and means for clamping said core between said bar and the first-mentioned side of said frame, the thickness of said core being greater than the thickness of said element where-

by there is clearance between said element and said bar and first mentioned side when said core is clamped between the latter so that said element is free to rotate on said core.

2. In a printing device, a rectangular frame, a bar parallel to one side of said frame, the ends of said bar having sliding engagement with opposite sides of said frame, a member between said bar and said first-mentioned side of said frame, said member comprising a cylindrical central core, the opposite ends of said core providing clamping surfaces, a type-bearing element having a generally cylindrical opening therethrough, said element being rotatably mounted on said core, the cylindrical surface of said opening having a series of recesses formed therein, a spring pressed detent carried by said core for engagement in said recesses, said element having a plurality of faces corresponding in number to the number of said recesses and type mounted on some of said faces, and means for clamping said core between said bar and the first-mentioned side of said frame, the thickness of said core being greater than the thickness of said element whereby there is clearance between said element and said bar and first mentioned side when said core is clamped between the latter so that said element is free to rotate on said core.

3. In a printing device, a rectangular frame, a bar parallel to one side of said frame, the ends of said bar having sliding engagement with opposite sides of said frame, a member between said bar and said first-mentioned side of said frame, said member comprising a cylindrical central core, a projection on the end of said core adjacent to the circumference thereof, the inner side of said projection having a surface lying in the plane of a chord of said cylindrical core, a type-bearing element rotatably mounted on said core, said element having a plurality of faces and type mounted on some of said faces, and means for clamping said core between said bar and the first-mentioned side of said frame.

4. In a printing device, a rectangular frame, a bar parallel to one side of said frame, the ends of said bar having sliding engagement with opposite sides of said frame, a member between said bar and said first-mentioned side of said frame, said member comprising a central core, the opposite ends of said core providing clamping surfaces, a type-bearing element rotatably mounted on said core, said element having a plurality of faces, type mounted on some of said faces, means for clamping said core between said bar and the first-mentioned side of said frame, the thickness of said core being greater than the thickness of said element whereby there is clearance between said element and said bar and first mentioned side when said core is clamped between the latter so that said element is free to rotate on said core, and means for retaining said element in position with any of said faces parallel to said bar.

5. In a printing device, a rectangular frame, a plurality of bars parallel to one side of said frame, the ends of said bars having sliding engagement with opposite sides of said frame, a member between two of said bars, said member comprising a central core, the opposite ends of said core providing clamping surfaces, a type-bearing element rotatably mounted on said core, said element having a plurality of faces and type mounted on some of said faces, and means for clamping said core between said two bars, the thickness of said core being greater than the thickness of said element whereby there is clear-

ance between said element and said two bars when said core is clamped between the latter so that said element is free to rotate on said core.

6. A printing member comprising a central core, the opposite ends of said core providing clamping surfaces, a type-bearing element rotatably mounted on said core and slidably removable therefrom, the thickness of said core being greater than the thickness of said element, said element having a plurality of faces, and type mounted on some of said faces.

7. A printing member comprising a central core, the opposite ends of said core providing clamping surfaces, a type-bearing element rotatably mounted on said core and slidably removable therefrom, the thickness of said core being greater than the thickness of said element, said element having a plurality of faces, type mounted on some of said faces, and means for retaining said element in desired positions with respect to said core.

8. A printing member comprising a cylindrical central core, the opposite ends of said core providing clamping surfaces, a type-bearing element having a central opening therethrough, said opening being bounded by a plurality of cylindrical surfaces separated by plane surfaces, said element being rotatably mounted on said core and slidably removable therefrom, the cylindrical surfaces bearing against said cylindrical core, a spring pressed detent carried by said core for engagement with said plane surfaces to retain said element in desired positions with respect to said core, said element having a plurality of faces equal in number to said cylindrical surfaces, and type mounted on some of said faces.

9. A printing member comprising a cylindrical central core, the opposite ends of said core providing clamping surfaces, a type-bearing element having a central opening therethrough, said opening being bounded by a plurality of cylindrical surfaces separated by pairs of plane surfaces meeting at an angle, said element being rotatably mounted on said core and slidably removable therefrom, the cylindrical surfaces bearing against said cylindrical core, a spring pressed detent carried by said core for engagement with said pairs of plane surfaces to retain said element in desired position with respect to said core, said element having a plurality of faces equal in number to said cylindrical surfaces, and type mounted on some of said surfaces.

10. A printing member comprising a cylindrical central core, the opposite ends of said core providing clamping surfaces, a type-bearing element having a central opening therethrough, said opening being bounded by cylindrical surface having spaced recesses therein, said element being rotatably mounted on said core and slidably removable therefrom, the cylindrical surface bearing against said cylindrical core, a spring pressed detent carried by said core for engagement with said recesses to retain said element in desired position with respect to said core, said element having a plurality of faces equal in number to said recesses, and type mounted on some of said faces.

11. A printing member comprising a central core, a type-bearing element rotatably mounted on said core, the thickness of said core being greater than the thickness of said element, said element having a plurality of faces, type mounted on some of said faces, and a projection having an aligning surface extending axially from one side of said core.

12. A printing member comprising a cylindrical

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central core, a type-bearing element rotatably mounted on said core, the thickness of said core being greater than the thickness of said element, said element having a plurality of faces, type
5 mounted on some of said faces, and a projection extending axially from one side of said core adjacent to the circumference, said projection having an aligning surface lying in a plane of a chord of said cylindrical core.

10 13. A printing member comprising a central core, a type-bearing element rotatably mounted on said core, the thickness of said core being greater than the thickness of said element, said element having a plurality of faces, type mounted
15 on some of said faces, a projection having an aligning surface extending axially from one side of said core, and means for retaining said element in desired positions with respect to said core.

20 14. A printing member comprising a cylindrical central core, the opposite ends of said core providing clamping surfaces, a type-bearing element having a central opening therethrough, said opening being bounded by cylindrical surface having spaced recesses therein, said element being rotatably mounted on said core, the cylindrical surface bearing against said cylindrical core, a spring
25 pressed detent carried by said core for engagement with said recesses to retain said element in desired position with respect to said core, said element having a plurality of faces equal in number to said cylindrical surfaces, type mounted on some of said surfaces, and a radial projection on said core adapted to be aligned with spaces bounded by said plane surface to permit removal of said element from said core.

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