Oct. 7, 1947. W. L. McCARTER 2,428,428

METHOD FOR MOUNTING AND REGISTERING PRINTING ELEMENTS

Original Filed Sept. 23, 1939

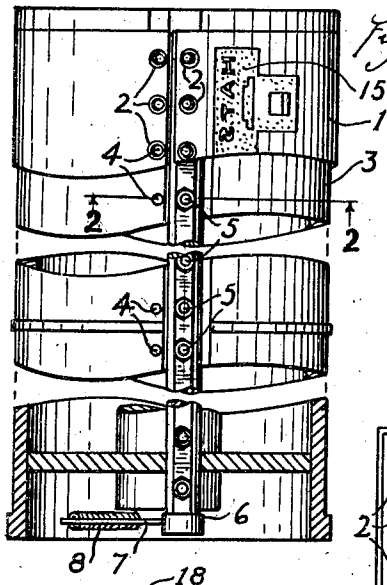


Fig. 1.

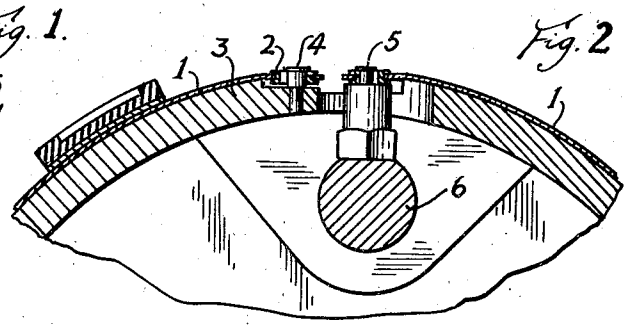


Fig. 2.

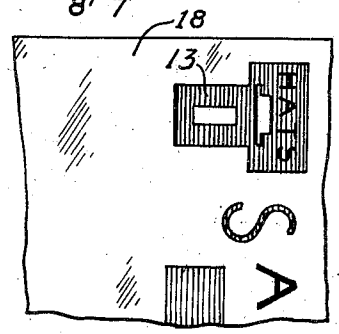


Fig. 4.

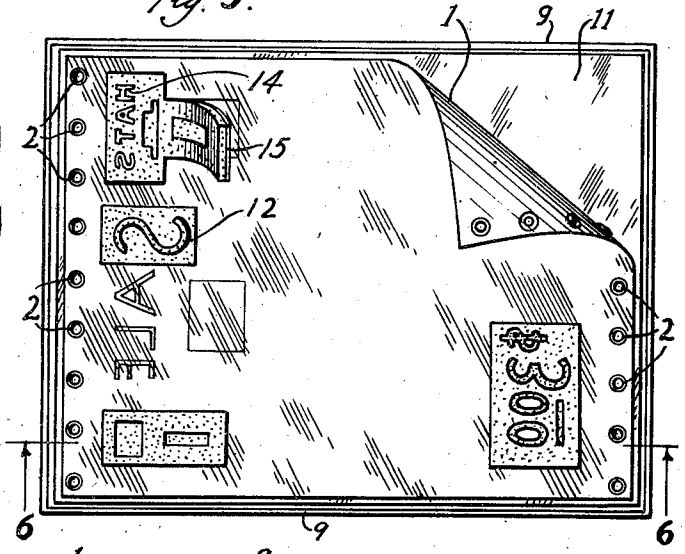


Fig. 3.

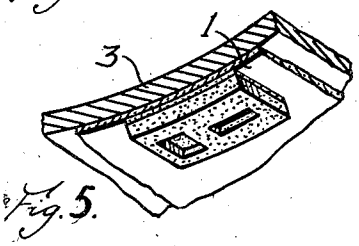


Fig. 5.

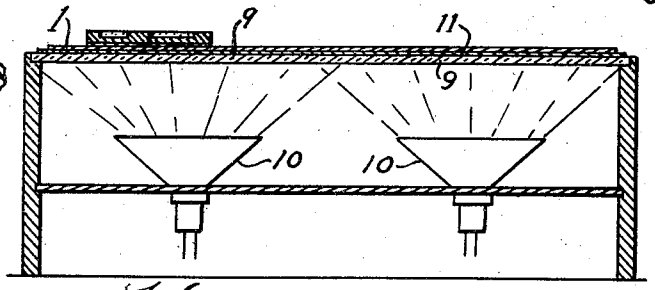


Fig. 6.

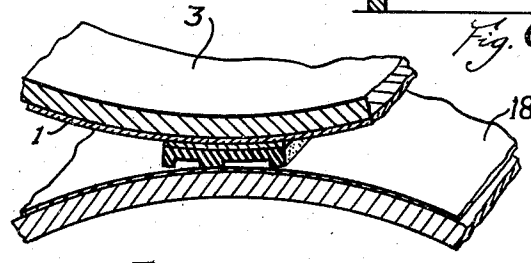


Fig. 7.

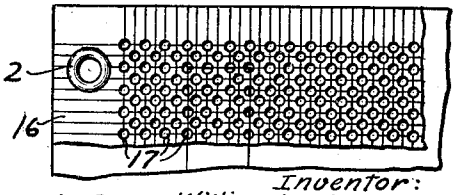


Fig. 8.

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METHOD FOR MOUNTING AND REGISTERING PRINTING ELEMENTS

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Substituted for abandoned application Serial No. 296,273, September 23, 1939. This application November 9, 1942, Serial No. 464,997

5 Claims. (Cl. 101—401.1)

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My invention relates to the art of printing, and it relates more particularly to those printing operations in which printed matter is superimposed on other printed matter as, for example, where colored letters are printed in juxtaposition with previously printed black letters.

Considerable difficulty has heretofore been encountered in the printing operations mentioned in that it has been difficult properly to register the matter printed in color with that printed in black, and my present invention is directed to the facilitation of said registration. It will be understood that my invention is not limited to the registration of colored matter with black, this object being cited by way of illustration, not by way of limitation. My invention is directed broadly to the registration of printed matter with any kind of reference datum, regardless of color or form.

This application is a substitute for my previous application filed September 23, 1939, Serial Number 296,273, entitled Method and means for mounting and registering printing elements.

My invention is particularly useful in connection with rubber type, although other material for said type may be used, and it will be described in connection with that form of printing device in which said type is carried by a cylinder. The problem is to position said type on said cylinder so that it will register properly with some reference datum on the paper passing thereover. If the type on said cylinder is in only one section, said type may be properly registered by merely rotating said cylinder independently of said paper, and then moving said cylinder endwise also independently of said paper until said type is in the desired position.

I have found, however, that it is highly advantageous frequently to use a plurality of sections of type on a single cylinder, but this has not been practical with any method and means heretofore known. It requires that each section of type be accurately spaced from each other section, and that each of said sections shall be properly oriented. Not until this is accomplished can the type be properly registered by shifting the cylinder, as previously described. My present invention is directed to the proper positioning of a plurality of sections of type with respect to each other in order that they may all thereafter be properly registered by shifting the cylinder on which they are mounted with respect to the paper.

My reason for wishing to use a plurality of

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sections of type rather than a single section are two-fold. First, it will save a great deal of material in case a small amount of type is to be scattered over a large area, inasmuch as no material will be used in the blank spaces of said area. Second, a great deal of difficulty in properly positioning the type on the single, large section will be avoided. In accordance with my invention, the problem of locating the different parts of a large section of type is transferred from the type molding operation to the type mounting operation where it is greatly simplified by the method and means hereinafter described with reference to the accompanying drawings, in which:

Fig. 1 is a plan view of a printing cylinder with a transparent blanket carrying type sections embodying my invention in place thereon, parts thereof being shown broken away to disclose underlying parts;

Fig. 2 is an enlarged fragmentary sectional view taken along the line 2—2 in Fig. 1;

Fig. 3 is a plan view of the transparent blanket of Fig. 1 superposed on a copy sheet which is positioned over a glass panel;

Fig. 4 is a fragmentary view of a paper printed by the type on said sheet;

Fig. 5 is an enlarged fragmentary perspective view of a portion of said cylinder and blanket showing some of the type thereon;

Fig. 6 is a vertical section taken on the line 6—6 in Fig. 3;

Fig. 7 is a fragmentary perspective view of a portion of the cylinder of Fig. 1, together with a portion of the backing roller used in conjunction therewith, the paper being printed being shown therebetween; and

Fig. 8 is a fragmentary view of a perforated opaque blanket embodying a modification of my invention.

A transparent base 1 having a row of eyelets 2 across each of its ends, is adapted to be fastened around cylinder 3 by hooking one row of said eyelets on a row of pins 4 which may, if desired, be press-fitted in said cylinder and wrapping said base around said cylinder and hooking the other row of said eyelets on a second row of pins 5 carried by rod 6. Said rod is rotatably mounted within said cylinder near the periphery thereof so that pins 5 protrude to the outside of said cylinder. Said rod 6 carries an arm 7 which engages spring 8 to tend to rotate said rod in the direction to tighten said base by means of said pins 5. Said base is thus held securely on said

cylinder, and it may readily be removed therefrom when arm 7 is pulled against spring 8.

As mentioned, I desire to place a plurality of sections of type in predetermined positions on said base. To this end, I provide a glass panel 9 over a source of light, such as lamps 10, and I place a copy 11 of the paper to be imprinted on said panel. It will be understood that said copy will have some printed matter on its face. Said printed matter may be complete in one color, in which case some of its letters may be covered with sections of type in order that they may be printed in color on other paper, or said copy may be fragmentary, in which case the omitted letters are to be supplied by the type sections.

I place said copy on said panel with its printed matter downward, the reverse side of said copy preferably being blank. The light from said lamps then shines through said paper sufficiently to make said printed matter visible. I then place said base 1 over said copy and said printed matter is still visible, since I make said base of Celluloid, or some other sufficiently transparent but unyielding material. I then place sections of type on said blanket, positioning them accurately with reference to said printed matter. By way of illustration, the copy shown in Fig. 3 has printed on it in black the letters "ALE." It is desired to print the letter "S" in front of these letters to form the word "Sale," said letter "S" to be in red. Said letter "S" is formed on a small section of rubber 12 by means which are not concerned with the present invention. It is apparent that said section may readily be located with respect to said printed matter, and it is then fastened to said base by means of a thin sheet of adhesive material.

Also printed on said copy is the word "hats." It is desired to print in red an ornamental figure 13 surrounding said word, as shown in Fig. 4. Said ornamental figure is formed on a small section of rubber 14, and said section is fastened to said base by another small sheet of adhesive material 15. Said ornamental figure has the letters "hats" cut on its face, preferably cut through it, so that said letters will not appear red. Said section 14 must then be placed on said base so accurately that said letters cut in its face will exactly cover the black letters on the copy without overlapping and without leaving a white line between. This may be done easily by the method incorporating my invention since it is only necessary to place said section over the letters of said copy, both being clearly visible.

At the opposite corner of said copy sheet, it is desired to print the characters "$3.00" in red, and to align said characters with other printed matter (not shown). This may be done in the way described. It will be seen that a great deal of material will be saved by making said type sections small rather than using one large sheet.

After all of the sections of type that are to print in red are fastened to said blanket, I remove the latter from said panel and place it on said cylinder, as described. Then, when paper 18 is printed to correspond with said copy is drawn over said cylinder, the red letters will probably not register properly with the black. I, therefore, rotate said cylinder while said paper remains stationary until one of said sections registers properly longitudinally of said paper. The remainder of said sections will then also register properly. I then move said cylinder lengthwise across said paper until perfect register is secured.

In Fig. 4 is shown a paper having the word "hats" printed in black and the ornamental figure printed by section of type 14 in red surrounding said word. Also, the letter "S" is printed in red by section 12 in front of the letter "A."

I prefer that base 1 be made transparent for the purpose described. However, an opaque blanket 16 made of thin metal, for example, having aligned rows of holes 17 spaced apart a predetermined distance may be similarly utilized, said holes being spaced closely enough so that the printed matter on the copy over which it is placed may be read through them.

In placing the base over the copy, care should be taken that the two are oriented with respect to each other as said base will be oriented with respect to the paper to be imprinted. The direction of travel of the base and paper will be the same; hence the type sections should be placed on the base when the latter is arranged to travel in the same direction as the copy.

I claim:

1. In the art of printing, the method of securing registration of printing elements upon certain unprinted spaces left on a partially printed sheet in which it is desired to imprint by said printing elements, consisting in fixing said sheet upon a transparent surface illuminated from one side thereof, arranging a flexible transparent base over said sheet so fixed, and in registration therewith, securing flexible printing elements to said base and in registration with the spaces on said sheet in which it is desired to imprint, removing said base and printing elements secured thereto and securing said base to a printing roll of a printing press with said elements arranged outwardly therefrom.

2. In the art of printing, the method of securing registration of printing elements upon certain unprinted spaces left on a partially printed sheet in which it is desired to imprint by said printing elements, consisting in fixing said sheet upon a flat transparent surface illuminated from one side thereof, arranging a flexible transparent base over said sheet so fixed, and in registration therewith, securing flexible printing elements to said base in registration with the spaces on said sheet in which it is desired to imprint, removing said base and printing elements secured thereto and securing said base to a printing roll of a printing press with said elements arranged outwardly therefrom.

3. In the art of printing, the method of securing registration of printing elements upon certain unprinted spaces left on a partially printed sheet in which it is desired to imprint by said printing elements, consisting in fixing said sheet upon a flat transparent surface illuminated from below said surface, arranging a flexible transparent base over said sheet so fixed, and in registration therewith, securing flexible printing elements to said base in registration with the spaces on said sheet in which it is desired to imprint, removing said base and printing elements secured thereto and securing said base to a printing roll of a printing press with said elements arranged outwardly therefrom.

4. In the art of printing, the method of securing registration of printing elements upon certain unprinted spaces left on a partially printed sheet in which it is desired to imprint by said printing elements, consisting in fixing said sheet upon a transparent surface illuminated from one side thereof, arranging a flexible transparent base over said sheet so fixed, and in registration therewith, securing flexible rubber printing elements

to said base in registration with the spaces on said sheet in which it is desired to imprint, removing said base and printing elements secured thereto and securing said base to a printing roll of a printing press with said elements arranged outwardly therefrom.

5. In the art of printing, the method of securing registration of printing elements upon certain unprinted spaces left on a partially printed sheet in which it is desired to imprint by said printing elements, consisting in fixing said sheet upon a transparent surface illuminated from one side thereof, arranging a flexible transparent base over said sheet so fixed, and in registration therewith, securing flexible rubber printing elements to said base by adhesion therewith and in registration with the spaces on said sheet in which it is desired to imprint, removing said base

and printing elements secured thereto and securing said base to a printing roll of a printing press with said elements arranged outwardly therefrom.

WILLIAM L. McCARTER.

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The following references are of record in the file of this patent:

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