June 13, 1933. W. C. HUEBNER 1,914,127

REGISTERING TABLE FOR PRINTING

Filed Oct. 31, 1930

Fig. 1.

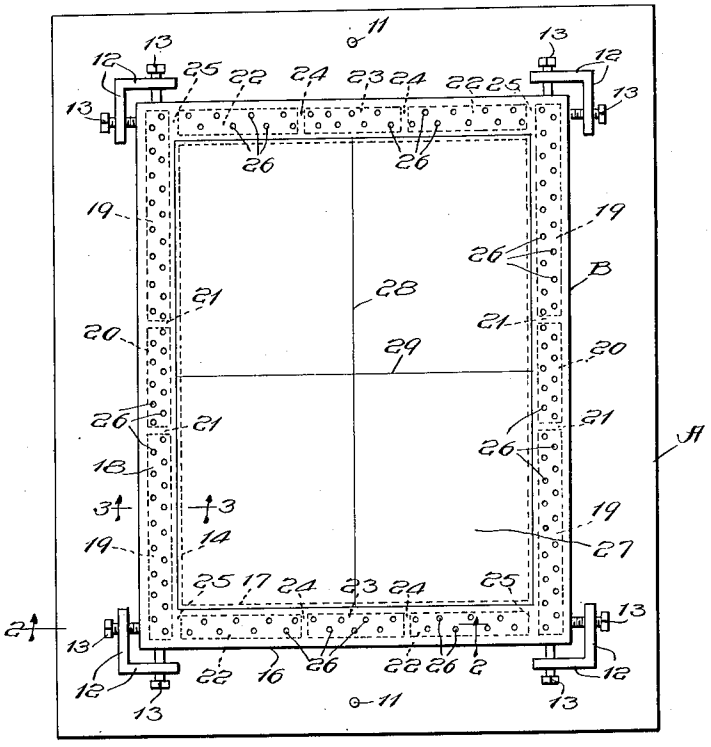


Fig. 2.

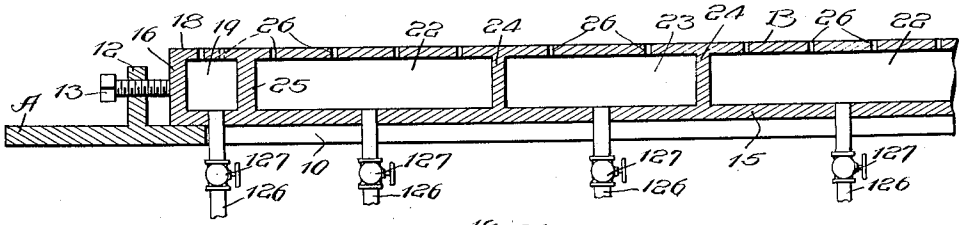
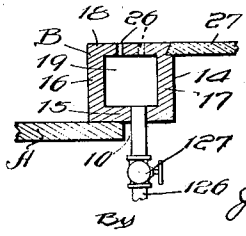


Fig. 3.



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# UNITED STATES PATENT OFFICE

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## REGISTERING TABLE FOR PRINTING

Application filed October 31, 1930. Serial No. 492,450.

This invention relates to improvements in registering table for printing.

In my co-pending application for process of preparing printing films, Serial No. 489,093, filed October 16, 1930, there is disclosed a method of preparing composed flexible films for printing in photographic printing machines. In the carrying out of said process, a table is required to effect the necessary register of the printing films with the key or original sketch. As one step of said process, it is necessary to accurately position and locate the key, label, print or the like on the registering table. During this step, the key, label or sketch is shifted manually over the table until it is brought into proper position and location and thereupon is pasted down firmly to the table.

One of the objects of the present invention is to provide a registering table suitable for carrying out said process.

Another object of the invention is to provide a table of the character indicated in the preceding paragraph so arranged that the key sheet, label or the like, which is initially shifted manually, may be temporarily held down when its proper position and location have been ascertained manually, pending the securing of the key, print, label or the like permanently in its proper position and location in order to minimize or eliminate possibility of shift while the key, label, print or the like is being pasted down permanently in place.

More specifically, an object of my invention is to provide a registering table of the character indicated in the foregoing paragraphs, wherein the key, print, label or the like is temporarily held down in adjusted position and location by vacuum pressure, which vacuum pressure may be selectively controlled for different edge portions of the key sheet or the like.

In the drawing, forming a part of this specification, Figure 1 is a top plan view of a table embodying my improvements. Figure 2 is an enlarged, vertical, sectional view corresponding to the section line 2—2 of Figure 1. And Figure 3 is a broken, vertical, sectional view corresponding to the line 3—3 of Figure 1.

In said drawing, the improved registering table comprises, broadly, a main base or support A and a secondary frame B mounted thereon.

The base or support A is preferably in the form of a heavy rectangular flat plate with a large central rectangular opening 10. At its opposite ends, said base or support A is provided with dowel pins 11—11 accurately located and positioned to cooperate with corresponding dowel holes in a film frame or holder such as described in my said co-pending application, and which film frame or holder is in turn adapted to be similarly accurately located and positioned on the photographic printing machine proper by means of the same dowel holes cooperating with dowel pins on the machine, which in turn correspond to the dowel pins 11—11, shown in Figure 1. With this arrangement, it is evident that the film holder when on the support A will occupy an accurate position and location definitely co-related with the photographic printing machine proper in correspondence with the usual two travel lines of such machine. I have not deemed it necessary to illustrate the film holder in the present application since reference may be had for a disclosure thereof to my said co-pending application, Serial No. 489,093 and also to my other co-pending application, Serial No. 488,012, filed October 11, 1930, now Patent 1,860,389, granted May 31, 1932, in which such film holder is claimed specifically.

At each of its four corners, spaced slightly outwardly from the central opening 10, the support A is provided with upstanding angular flanges 12—12, through which are extended adjusting screws 13—13 at right angles to each other, as clearly shown in Figure 1, the purpose of said screws being hereinafter stated.

The secondary frame B is also preferably of rectangular outline having a rectangular central opening 14 coinciding with the opening 10. Said frame B is adapted to be accurately positioned and located with respect to the dowel pins 11—11 by any suitable

method, one such method being described in my said co-pending application, Serial No. 489,093. When so positioned and located, it is retained by the adjusting and set screws 13—13, as will be obvious.

The sides of said frame B are of rectangular cross section as best indicated in Figure 3, having a bottom wall 15, outer wall 16, inner wall 17, and top wall 18, thus providing a hollow or tube-like structure or chamber throughout the entire length of the sides. As shown in the drawing, each of the long sides of the frame B is divided into two end chambers 19—19 and a central chamber 20 by means of two vertical partitions 21—21. Similarly, each of the narrow ends of the frame B is divided into two end chambers 22—22 and a central chamber 23 by partitions 24—24. Suitable partitions 25 are disposed at the corners to separate the respective adjacent end chambers 22 and 19, as will be understood. The top wall 18 is provided with a plurality of holes or perforations 26—26 communicating with each of the chambers 19, 20, 22 and 23, so that when any one or more of said chambers is placed in communication with the vacuum pump, atmospheric pressure will operate on any sheet overlying the surface 18 to press the same tightly down against the surface 18 and hold it in position. The chambers 19, 20, 22 and 23 are each provided with a pipe 126 communicating therewith, said pipes 126 being in communication with a suitable suction pump and each adapted to be individually controlled or shut off as by a suitable valve 127. In this manner, it is obvious that the several suction or vacuum chambers may be selectively controlled and any combination of such chambers brought into play as desired, depending upon the size and shape of the flexible sheet which is being manipulated on top of the table.

The opening in the frame B is closed preferably by a pane of glass 27, suitably recessed into the frame proper B, or secured thereto in any suitable way, the upper surface of the glass being flush with the surface 18. Said glass 27 will have two register lines 28—29 preferably inscribed thereon, which two lines will be exactly at right angles to each other and brought into proper position and location with respect to the dowel pins 11, as hereinbefore referred to.

In using my improved registering table, the operator manipulates the flexible key sheet, sketch or the like on the table (after the latter has been properly located and set by the screws 13) until the key sheet or the like is adjusted to the desired accurate position and location with respect to the lines 28—29. Thereupon, the operator will turn on the vacuum in such chamber or chambers as desired to effect temporary holding down of such edges of the sheet as overlap the respective chambers, thus maintaining the sheet in the registered position without danger of its becoming slightly or otherwise shifted. Thereupon, the operator will proceed to paste down by suitable transparent adhesive, the sheet permanently in place on the table. In pasting down the sheet, the operator will preferably first apply paste under a portion of the sheet which is not subject to suction pressure; then under another portion not subject to suction pressure and so on until finally those portions are pasted which have been subject to the suction pressure.

Later in the use of my improved registering table when a film in a holder is superposed over the table, the vacuum may be turned on in any one or more of the chambers in order to hold down the film tightly against the table while the print on the frame is being built up, as described in my said process application Serial No. 489,093.

I have herein shown and described what I now consider the preferred manner of carrying out my invention, but the same is merely illustrative and I contemplate all changes and modifications that come within the scope of the claims appended hereto.

I claim:

1. In a registering table of the character described, the combination with a base member having registering devices thereon adapted to cooperate with corresponding registering devices of a film holder; of a frame mounted on said base; adjustable means for retaining said frame in adjusted registered position with respect to said base and the registering devices thereon, the upper surface of said frame being perforated and adapted to be connected to a source of suction for temporarily holding a sheet down thereon.

2. In a registering table of the character described, the combination with a base having registering means thereon cooperable with corresponding registering means of a film holder; of a frame supported on said base; a flat top surface element carried by said frame; and adjustable means between said base and frame for fixedly securing said frame in registered position and location with respect to the registering means of the base.

3. In a registering table of the character described, the combination with a base having registering means thereon cooperable with corresponding registering means of a film holder; of a frame supported on said base; a flat top surface element carried by said frame; and adjustable means between said base and frame for fixedly securing said frame in registered position and location with respect to the registering means of the base, the top surface of said element having register marks thereon.

4. In a registering table of the character

described, a frame provided with means forming a supporting surface for a sheet, said surface having register marks thereon, said frame being provided around the periphery thereof with a plurality of independent suction chambers in communication with the top surface thereof; and means for selectively placing said chambers in communication with a source of suction.

5. In a registering table of the character described, the combination with a base having a central opening and provided with registering means thereon cooperable with corresponding registering means of a holder for a printing element; of a frame adapted to be supported on said base around the periphery of said opening thereof, said frame having also a central opening and the frame proper being chambered and the chambers in communication with the upper surface of the frame; a supporting transparent plate mounted on said frame over the opening, said plate having register marks thereon; means for placing said chambers in communication with a source of vacuum; and adjustable means between said base and frame for fixedly retaining said frame in registered position and location with respect to said registering means of the base.

In witness that I claim the foregoing I have hereunto subscribed my name this 17th day of October 1930.

WILLIAM C. HUEBNER.