

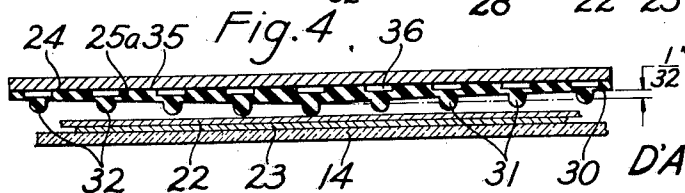
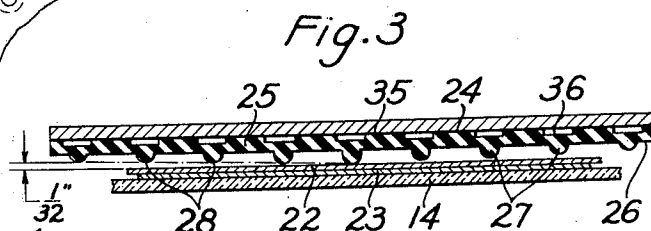
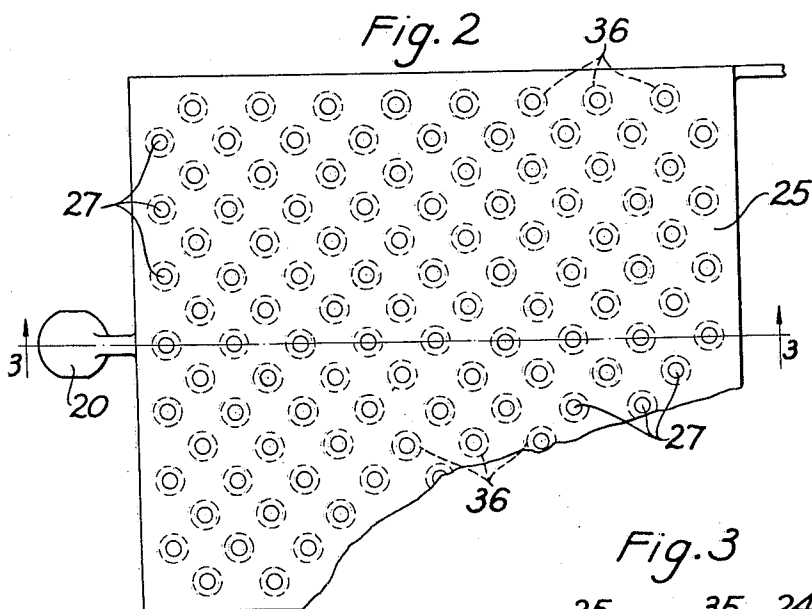
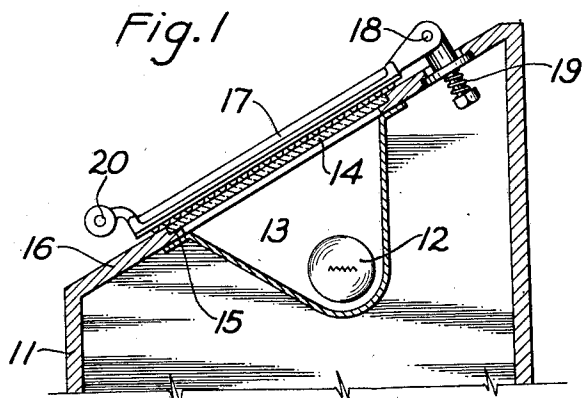
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PRINTING PLATEN

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PRINTING PLATEN

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2 Claims. (Cl. 95—73)

The present invention relates to printing machines, and more particularly to a new and improved form of platen for said machines.

One object of the invention is the provision of a platen which assures intimate contact of the positive printing paper with the negative over the entire surface of the latter.

Another object of the invention is the provision of a platen, of the class described, formed with a plurality of resilient contacting members arranged to successively engage the positive printing paper to effectively remove air pockets from between the negative and the paper to assure intimate contact therebetween.

A further object of the invention is the provision of a platen formed with a plurality of resilient contacting members, the tops of which are arranged on a curve so that said members successively engage and wipe the positive printing paper to securely press the latter into intimate contact with the negative.

A still further object of the invention is the provision of a platen which automatically adjusts itself to compensate for different thicknesses of printing materials.

And still another object of the invention is the provision of such a platen which is relatively simple in construction, comprises few parts of sturdy construction, and is highly effective in use.

To these and other ends, the invention resides in certain improvements and combination of parts, all as will be hereinafter more fully described, the novel features being pointed out in the claims at the end of the specification.

In the drawing:

Fig. 1 is a fragmentary sectional view of a printing machine, showing a platen constructed in accordance with the present invention;

Fig. 2 is a bottom view of the platen, on a larger scale than Fig. 1, showing the arrangement of the contacting members which engage and hold the positive printing paper in engagement with the negative;

Fig. 3 is a horizontal sectional view through the platen taken substantially on line 3—3 of Fig. 2, showing one embodiment of the printing pad in which the tops of the contacting members are arranged on a curved surface so as to progressively engage the positive printing paper which is positioned on the printing panel; and,

Fig. 4 is a view similar to Fig. 3, showing another form of printing pad in which the contacting members are of equal size, but the lower pad surface is curved.

Similar reference numerals throughout the various views indicate the same parts.

The printing machine illustrated in Fig. 1 comprises, broadly, a housing 11 in which is mounted a lamp 12. A reflector 13 directs the light rays from the lamp upwardly through a printing panel 14 positioned in a rabbeted recess 15 formed in the sloping top 16 of the cabinet. A platen 17 is hingedly secured at 18 to the housing 11 and is movable toward the panel 14 and cooperates with the latter to form a printing frame in which the positive paper is held in contact with the negative during the printing operation. After such printing, the platen is then swung upwardly away from the panel 14 to permit removal of the positive material and the negative. A spring 19 may be provided to normally hold the platen 17 in elevated position. A handle 20 serves to move the platen 17 downwardly to the position shown in Fig. 1. The above described machine may be of any suitable construction, and is shown merely for the purpose of illustrating the present invention and does not constitute a part thereof.

In order to assure positive and intimate contact between the positive printing paper 22 and the negative 23, the lower surface 24 of the platen 17 has secured thereto, in any suitable well-known manner, a pad 25 of resilient or flexible material such, for example, as rubber. In the embodiment shown in Fig. 3, the pad 25 is of a substantially uniform thickness over its entire area. One face 26 of the pad is provided with a plurality of nibs or contacting members 27 formed integral with the pad and projecting from the face 26, as clearly shown in Fig. 3.

While the face 26 of the pad 25 lies substantially in a plane, the tops or contacting portions 28 of the members 27, in Fig. 3, are arranged in the form of a flat cone so that the top 28 at the cone apex is approximately $\frac{1}{2}$ of an inch higher than the tops 28 at the cone base, as clearly illustrated in Fig. 3. In this embodiment, the apex of the cone is located substantially at the center of the pad 25, as shown, but it is contemplated the apex may be otherwise located, if desired.

The platen and pad assembly is adjusted on the printing machine so that when the platen is lowered, the element of the cone lying along the line 3—3 of Fig. 2 engages the positive paper before any other part of the cone surface, and thus firmly presses the paper against the negative 23 along this element. As the downward movement of the platen is continued, the tops 28 on other cone element are successively and pro-

gressively brought into engagement with the paper 22. This progressive engagement of the members 27 gradually flattens the cone elements out into a plane of increasing dimensions, and affords a lateral wiping action which presses the paper 22 securely against the negative 23 and effectively removes any air pockets therebetween. When the platen 17 is lifted, the flattened cone elements again resume their normal conical shape.

Fig. 4 shows a modified pad arrangement in which a pad 25a, of the same materials as the pad 25, is formed with a lower surface 30 arranged in the form of a flat cone, the apex of which is approximately $\frac{1}{2}$ of an inch higher than the base of the cone. Obviously in this arrangement, the contacting members 31 may be of equal length so that the tops 32 thereof will also be conically arranged for the purpose above described.

While the contacting members in both of the above described modifications have been shown as arranged in the form of a flat cone, this is by way of illustration only, as it is apparent that other suitable curved surfaces such, for example, as a sphere, are equally suitable. Furthermore as the members 27 and 31 are formed integral with the pad 23, and are arranged on a curved surface, the platen 17 may be broadly considered as having a curved surface which is provided with paper contacting members.

In order to impart the desired flexibility to the contacting members 27 and 31, the rear face 35 of each of the pads 25 and 25a is provided with a plurality of recesses 36 in alignment with the various contacting members, as clearly shown in Figs. 3 and 4. Thus when the platen is lowered to bring the contacting members 27 and/or 31 into engagement with the positive printing paper 22, the contacting members may readily flex into the recesses 36 to insure substantially uniform pressure on all the contacting members, the advantages of which are obvious.

While certain embodiments of the invention have been disclosed, it is to be understood that the inventive idea may be carried out in a num-

ber of ways. This application is therefore not to be limited to the precise details described, but is intended to cover all variations and modifications thereof which fall within the spirit of the invention or the scope of the appended claims.

We claim:

1. In a printing device, the combination with a printing panel, and a platen mounted to move toward and away from said panel, of a rubber pad mounted on said platen, and a plurality of contacting members formed integral with said pad and projecting from one surface thereof and adapted to engage printing material positioned on said panel, the tops of said members being conically arranged so that the members on adjacent cone elements will successively engage said material to flatten said tops into a plane, the other surface of said pad being formed with a plurality of independent and noncommunicating recesses in alignment with said members and into which the latter may flex when brought into contact with said material to insure substantially uniform pressure on all of said members.

2. In a printing device, the combination with a printing panel, and a platen mounted to move toward and away from said panel, of a single mass of homogeneous rubber having one face thereof secured directly to said platen, said mass being thicker at the center and tapering in thickness toward the edges, a plurality of integrally formed members projecting equal distances from the other face of said mass and adapted to engage printing material positioned on said panel, said mass forming a continuous rubber cushion between said members and said platen, the varying thickness of said mass serving to position the apexes of said members along elements of a cone, said one face of said mass being formed with a plurality of independent recesses positioned in alignment with said members and into which said members may flex when moved into contact with said material.

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