July 12, 1938. W. M. DALTON 2,123,564

IMPRESSION SHEET FOR PRINTING PRESSES

Filed March 11, 1937 2 Sheets-Sheet 1

Fig. 1.

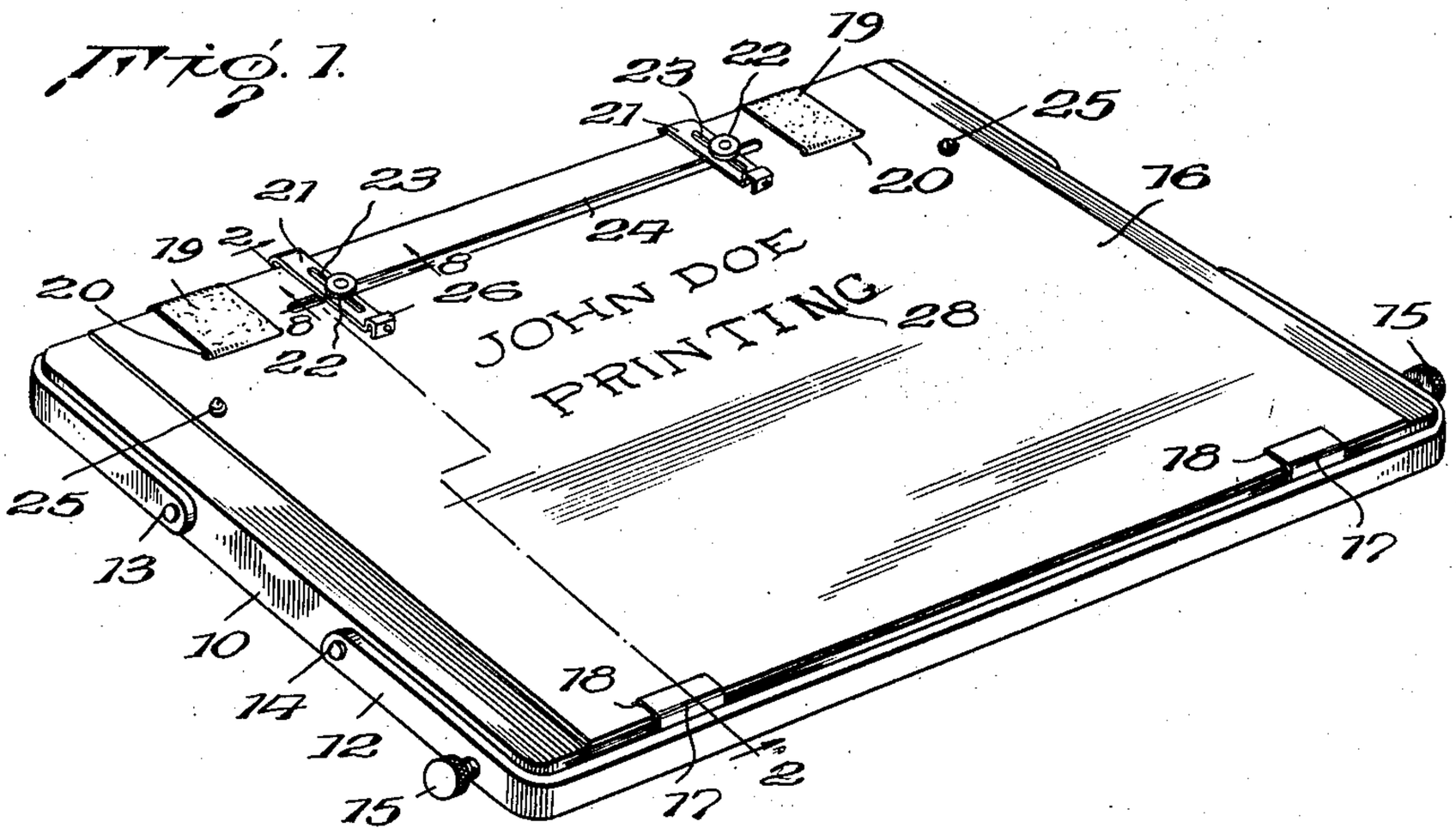
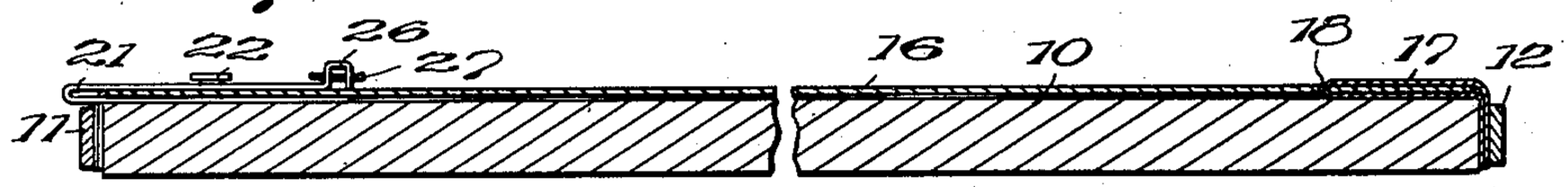


Fig. 2.



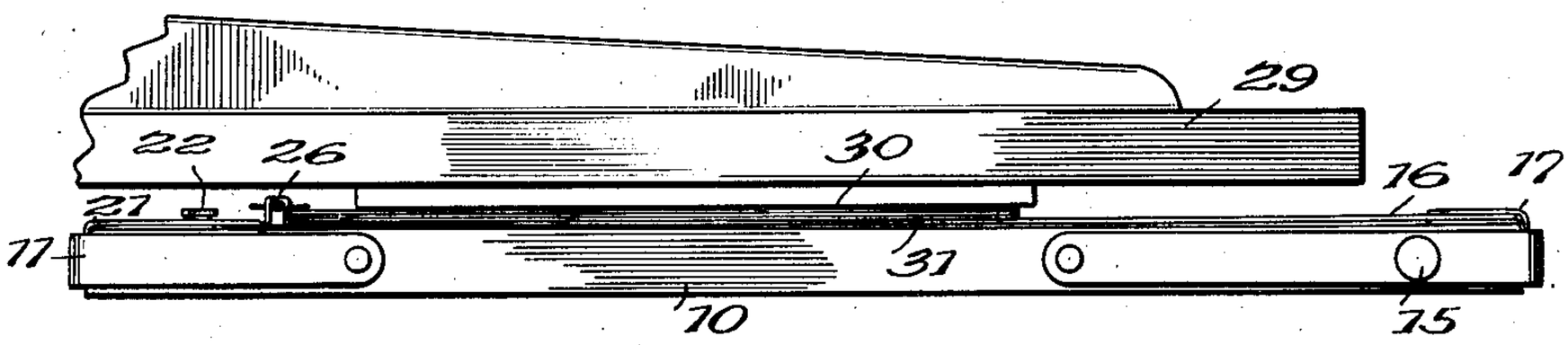


Fig. 3.

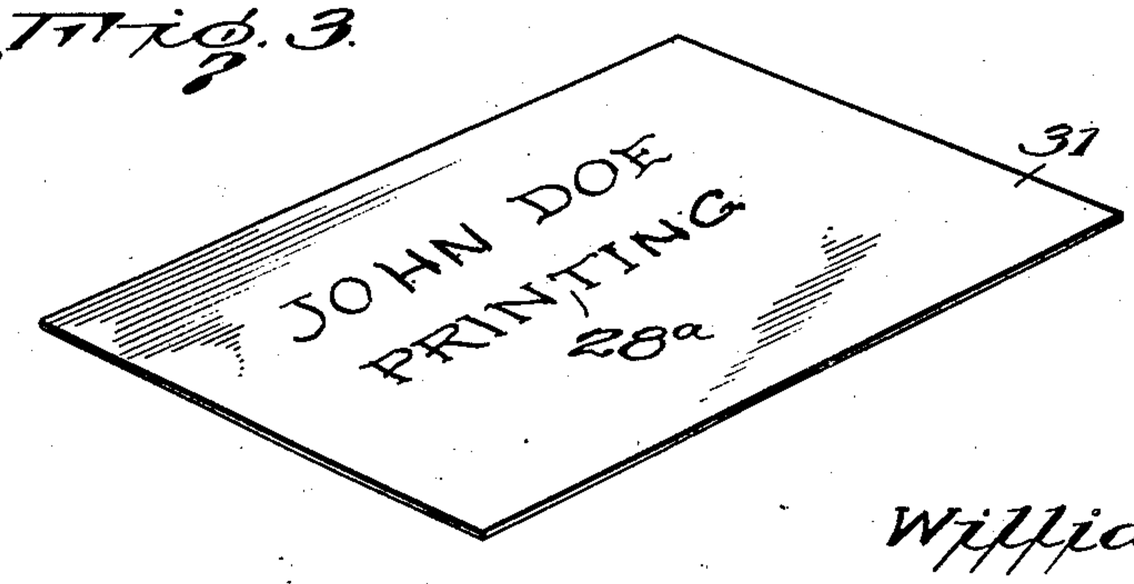


Fig. 4.

Inventor
William M. Dalton,

By Ben J. Chromy.
his Attorney

July 12, 1938. W. M. DALTON 2,123,564

IMPRESSION SHEET FOR PRINTING PRESSES

Filed March 11, 1937 2 Sheets-Sheet 2

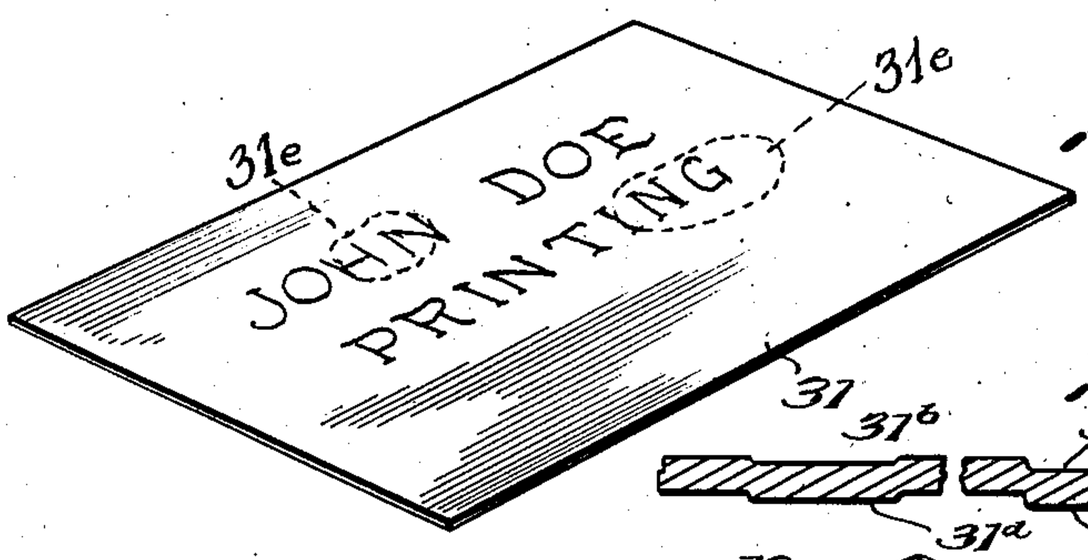


Fig. 5.

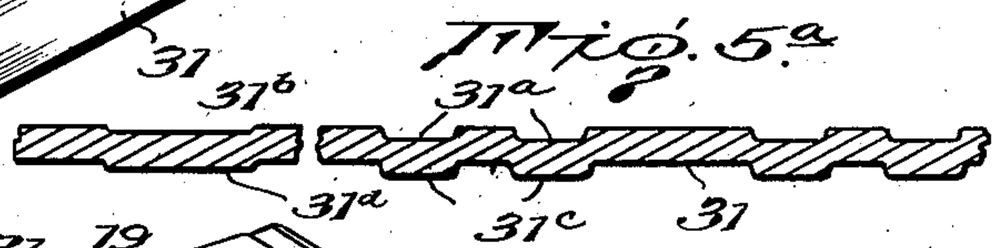


Fig. 5a.

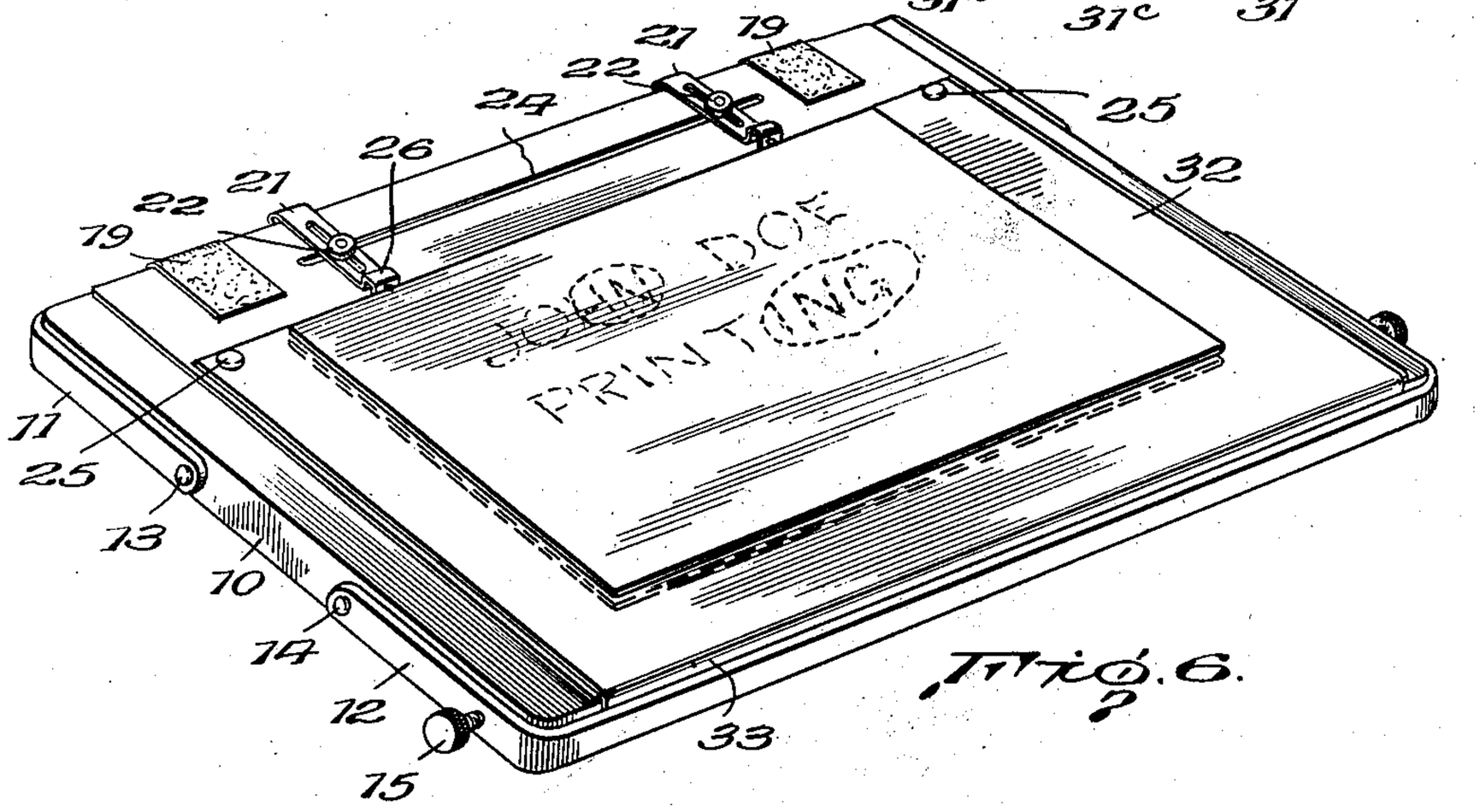


Fig. 6.

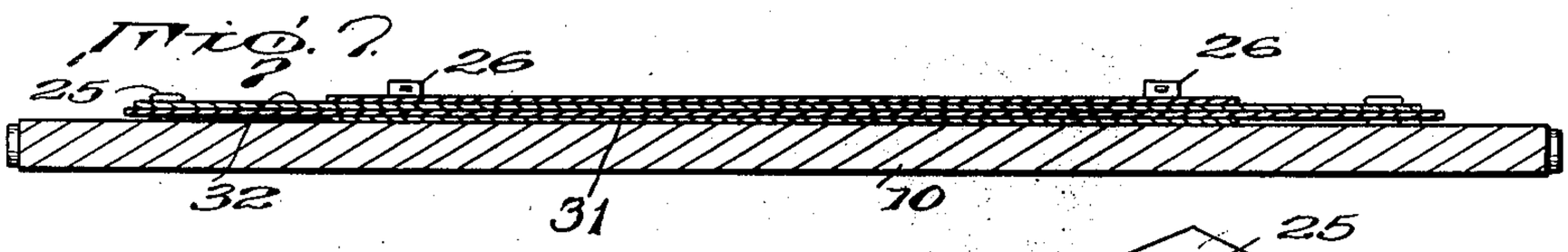


Fig. 7.

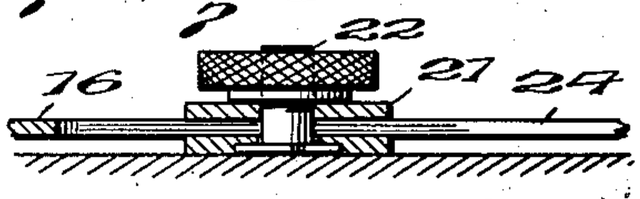


Fig. 8.

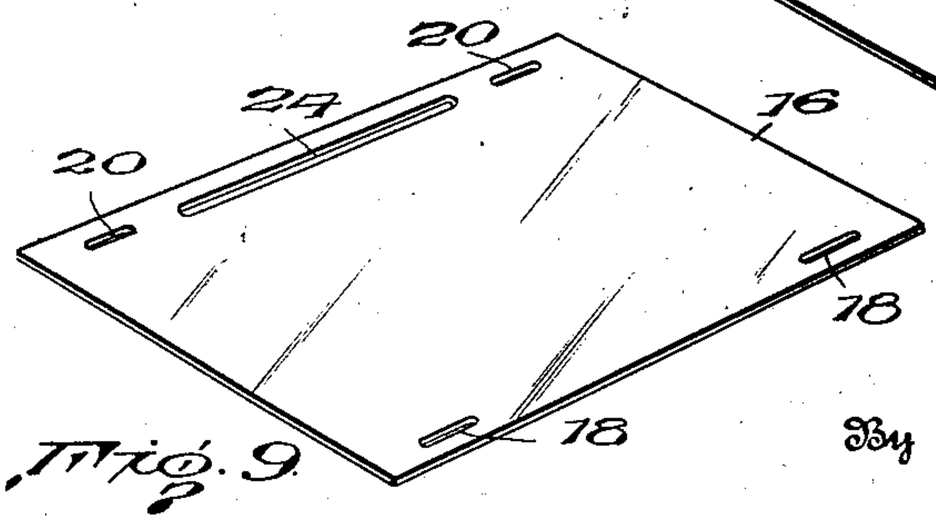


Fig. 9.

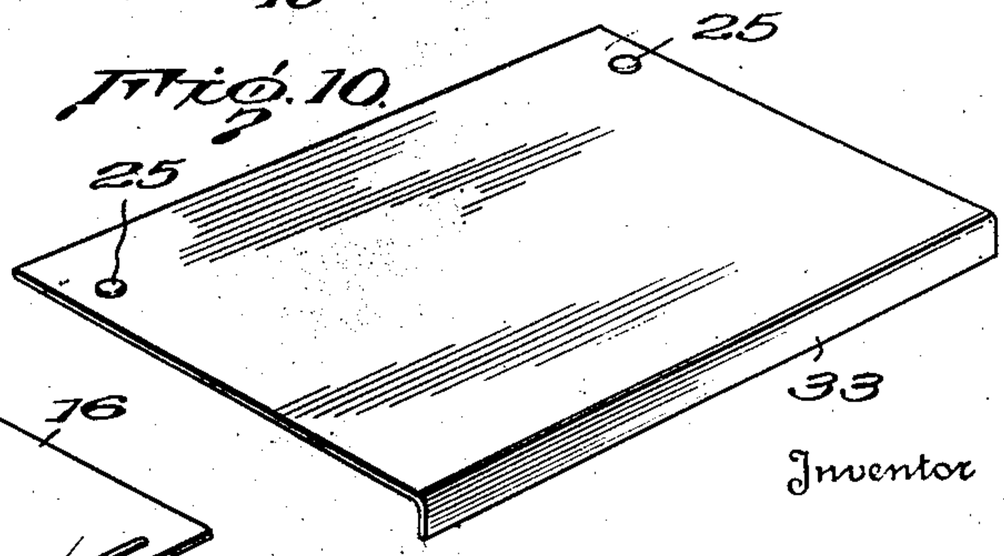


Fig. 10.

Inventor

William M. Dalton,

By Wm J. Chromy

his Attorney

Patented July 12, 1938

2,123,564

UNITED STATES PATENT OFFICE

2,123,564

IMPRESSION SHEET FOR PRINTING PRESSES

William M. Dalton, Washington, D. C.

Application March 11, 1937, Serial No. 130,370

6 Claims. (Cl. 41—25.5)

This invention relates to printers' accessories generally. More particularly, this invention relates to a combination impression sheet adapted to be used on the platens of printing presses.

An object of this invention is to provide an impression sheet adapted to be used on the platen of a printing press so that the required amount of solid printing impression is obtained at all times without digging the type into the packing, and permitting the saving of a large percentage of makeready.

Another object of this invention is to provide an impression sheet to the job type printing press to enable the operator to produce printed material of the required amount of solid impression without undue wearing of the type or form.

Still another object of this invention is to provide an impression sheet for the job type printing press which permits the required amount of solid type impression without imparting an unnecessary embossing impression which would cause the stock to curl.

Still another object of this invention is to provide an impression sheet to a printing press for the purpose of producing the required amount of type impression at all times even though a large number of impressions are made in a single run, said impression sheet having such characteristics as will enable it to make a firm contact between the type form and the stock sheet, thereby eliminating impression vibration or friction.

A further object of this invention is to provide an impression sheet for a printing press such as will save a large percentage of makeready and still produce high quality printing, free from unnecessary embossing effect on the back of the printed sheet.

Other and further objects of this invention will be apparent to those skilled in the art to which it relates from the following specification and claims.

In accordance with this invention I provide a combination impression sheet for the so-called job type printing press enabling the operator to produce high quality printing without the necessity of long and tedious preparation of makeready before starting to print a particular job. My invention also eliminates the necessity of frequent adjustments or replacements in the makeready during the process of printing a large number of copies from a single form.

Briefly, my invention consists of a celluloid sheet fastened to the top of the printing press platen, said celluloid sheet having suitable margin guides attached thereto. A top sheet is fastened over this celluloid sheet by suitable fasteners so that it can be removed readily, before the top sheet is placed over the celluloid and after the form is properly adjusted and located ready for printing, a single impression is taken on the top of the celluloid for the purpose of matching the makeready through the celluloid to assure a true register. After this impression is taken on the celluloid, three or four sheets of stock are placed over the celluloid against the guides carried by the celluloid. When these three or four sheets of stock material are in proper place upon the aforesaid celluloid, an impression is taken on the uppermost sheet of said stock material from the printing form. The back side of this printed sheet is then examined for embossing impression to determine the proper places for the makeready. The makeready is placed on the back of this printed sheet and covers the portions thereof where no embossing impression may be, or where the embossing impression is least apparent. This printed sheet with the makeready on the back thereof is then placed underneath the celluloid sheet. Care must, of course, be taken to line up the makeready sheet underneath the celluloid sheet so that the printed impression on the makeready sheet corresponds to the printed impression on the celluloid sheet, thus insuring that the makeready is in the proper position underneath the celluloid sheet. The top sheet is then placed upon the celluloid and the printing press is ready for the printing operation.

Further details of this invention will be apparent to those skilled in the art to which it relates from the following specification and the drawings in which briefly, Figure 1 is a perspective view illustrating the manner in which the celluloid sheet is placed upon the printing press; Figure 2 is a sectional view along the lines 2—2 of Figure 1; Figure 3 illustrates the manner in which the printing impression is taken on a sheet of stock material to obtain the embossing impression on the back thereof; Figure 4 is a view of the printed stock material; Figure 5 is a view showing the location of the makeready on the back of the printed stock material; Figure 5*a* is an enlarged sectional view through a printed impression on a sheet of paper; Figure 6 shows the makeready in position underneath the celluloid sheet; Figure 7 is a sectional view along the line 7—7 of Figure 6. Figure 8 is a sectional view of one of the guides carried by the celluloid; Figure 9 is a plan view of the celluloid sheet and Figure 10 is a plan view of the top sheet.

Referring to Figure 1 of the drawings in detail, reference numeral 10 designates the platen of the printing press to which the ends of the bales 11 and 12 are pivotally attached by suitable bolts or rivets 13 and 14. The bale 12 is provided with set screws 15 which engage the edges of the platen 10 and serve to hold this bale 12 in place after the tabs 17 attached to the celluloid sheet are gripped between this bale and the edge of the platen. Tabs 19 are attached to the celluloid sheet 16 along the edge opposite that to which the tabs 17 are attached and the bale 11 is employed to engage these tabs 19 and hold them firmly against the adjacent edge of the platen 10. In use the tabs 19 are fastened first between the bale 11 and the platen 10 and thereafter the celluloid sheet is stretched over the top of the platen and the tabs 17 fastened by the bale 12.

The tabs 17 and 19 may be made of flexible and strong strip material, such as leather, kraft paper, cloth, and the like, and they are threaded through slots 18 and 20, respectively, formed in the celluloid sheet 16 adjacent to the longitudinal edges thereof as shown in Figure 9. The manner in which these tabs 17 and 19 are attached to the celluloid sheet 16 and engaged by the bales of the platen 10 is also illustrated in the cross-sectional view shown in Figure 2 of the drawings.

Two or more guides 21 are positioned along one of the longitudinal edges of the sheet 16 between the tabs 19. These guides 21 may be moved from place to place if desired inasmuch as they are provided with an adjusting bolt 22 positioned in the longitudinal slot 23 formed in the guide frame member. For the adjustable guides the type form should be locked to this set gauge of ten picas plus margin centering sideways. Thereby several forms can be printed without disturbing the adjustment of the guides. The guides also do not necessarily have to be mounted on the celluloid, but may be carried on some other part of the printing press and extend over the celluloid. The bolt 22 of the guide extends through the U-shaped frame member of the guide 21 and when this bolt is tightened, the ends of the U-shaped frame grip surfaces of the celluloid sheet 16 and hold the guide in place so that the paper stock which is to receive the print impression, will engage the tongues 27 supported by the ends 26 of the guides. An elongated slot 24 is cut into the sheet 16 between the tabs 19 for the purpose of receiving the bolts 22 of the guides and to permit longitudinal adjustment of said guides.

After the celluloid sheet is properly fastened to the platen and the type form 30 is adjusted into place on a printing press 29, a printed impression 28 is taken on the celluloid sheet 16. Thereafter a plurality of sheets, that is, at least three or four, of stock material upon which a particular printing job is to be performed are placed upon the sheet 16 against the ends of the guides 21 and a printed impression is taken upon the uppermost of these sheets as shown in Figures 3 and 4. Several sheets of stock material are used in taking this impression in order to obtain a clearer embossing impression on the back or underside of the uppermost sheet so that the high and low areas of the type form face can be more readily located for the purpose of preparing the makeready to be inserted under the celluloid sheet 16. For purpose of illustration, an enlarged view of the cross-section of the sheet 31 is shown in Figure 5*a*. The type impressions on the face of this sheet 31 are designated by the reference numerals 31*a* and 31*b*. The embossing on the back side of the sheet 31 caused by the type is designated by the reference numerals 31*c* and 31*d*. The embossing 31*d* is not as pronounced as 31*c*, showing that the faces of the type of the form are not perfectly level. The low spots in the face of the type form can be detected by examining the back face of the sheet 31 and the suitable patches of makeready 31*e*, which is a filler made up of paper or other similar material, are pasted on the bottom of the paper sheet 31 to compensate for the low spots in the type form face. After the makeready is positioned on the back of sheet 31 this sheet is positioned underneath the celluloid sheet 16, care being taken that the printed impression 28 on the sheet 16 corresponds and is aligned with the printed impression 28*a* of the sheet 31. In this way the makeready positioned on the back of the sheet 31 is properly lined up with respect to the type form 30 and all possibility of error in positioning the makeready in correct places with respect to the type form is eliminated. In this way very high quality printing work such as cutouts on solids and halftone vignettes of color work can be accomplished. This extra impression can be used in sinking type farther down into the paper and still eliminating the embossing impression on back of the printed sheet—for example, printing on 4 ply cardboard and sinking letters therein.

After the sheet 31 is positioned underneath the sheet 16 a draw sheet 32 of material such as fish paper, kraft paper, or the like, is attached to the celluloid sheet by snap fasteners 25 positioned at two corners of the draw sheet 32. The free end section 33 of said draw sheet is clamped underneath the bale 12 together with the tabs 17 of the sheet 16 to hold the draw sheet down. The impression sheet of this invention is then ready so that the printing job may be accomplished. Sheets of stock material are then fed to the printing press by placing them upon the draw sheet 32 and against the guides 21 by conventional feeding machinery.

The printed impression registered on the celluloid sheet 16 may be removed by using a suitable solvent, such as, gasoline, benzine, and the like, after a particular printing job is finished and the sheet is to be used in another job.

My invention has numerous advantages, however. The main features are that it permits printing on the full surface of the platen type press and enables the operator to obtain the required amount of impression without difficulty. Furthermore, wearing and rounding of the type is also avoided to a large degree. High quality results and work are obtained from printing presses employing my invention because the impression of the type on the paper is more uniform or even. Embossing on the back of the printed paper with the added amount of impression used is also prevented and consequently the printed paper does not have a tendency to curl after being taken out of the printing press.

In practicing my invention I prefer, in cases where perforating rules are to be printed to plane these down until they are type high. Strips of binders' cloth are pasted on top of the draw sheet to get sufficient impression from the perforating rules.

While I have described an embodiment of my invention in detail it is, of course, understood that I do not desire to limit this invention to the exact details set forth in the foregoing specification except insofar as they are defined by the claims.

What I claim and desire to secure by Letters Patent is as follows:

1. A combination impression sheet adapted to be used on the platen of a printing press comprising a sheet of celluloid adapted to be placed upon the platen of a printing press, means attached to said celluloid sheet for fastening said sheet to the aforesaid platen, a plurality of guides fitting snugly over said celluloid sheet to permit adjustment of said guides longitudinally thereof, said celluloid sheet having eraseable printed legends thereon corresponding to a predetermined type form to be printed, a makeready sheet having printed legends thereon corresponding to the aforesaid printed legends on said celluloid, said makeready sheet being positioned beneath said celluloid sheet, a draw sheet positioned over said celluloid sheet and means for attaching said draw sheet to said celluloid and said printing press platen.

2. A combination impression sheet adapted to be used on the platen of a printing press comprising a sheet of celluloid adapted to be placed upon the platen of a printing press, means attached to said celluloid sheet for holding said sheet on the top of the aforesaid platen, a plurality of guides carried by said celluloid sheet, said celluloid sheet having an elongated slot cut therein adjacent to one edge thereof to receive portions of said guides and to permit adjustment of said guides longitudinally thereof, said celluloid sheet having eraseable printed legends thereon corresponding to a predetermined type form to be printed, a makeready sheet positioned beneath said celluloid sheet, said makeready sheet having printed legends thereon corresponding to the aforesaid printed legends on said celluloid to facilitate placing the aforesaid makeready sheet in the proper position with respect to the type form of the printing press, a draw sheet positioned over said celluloid sheet and means for attaching said draw sheet to said celluloid and said printing press platen.

3. A combination impression sheet adapted to be used on the platen of a printing press comprising a sheet of celluloid adapted to be placed upon the platen of a printing press, means attached to said celluloid sheet for holding said sheet on the top of the aforesaid platen, a plurality of adjustable guides carried by said celluloid sheet, each of said guides comprising a bent, resilient member for gripping said celluloid sheet and means for adjusting the tension of said gripping action, said celluloid sheet having eraseable printed legends thereon corresponding to a predetermined type form to be printed, a makeready sheet having printed legends thereon corresponding to the aforesaid printed legends on said celluloid, said makeready sheet being positioned beneath said celluloid sheet, a draw sheet positioned over said celluloid sheet and means for attaching said draw sheet to said celluloid and said printing press platen to facilitate removal of said draw sheet without disturbing said guides.

4. A combination impression sheet adapted to be used on the platen of a printing press comprising a sheet of celluloid adapted to be placed upon the platen of a printing press, said platen having bales attached thereto, a plurality of tabs attached adjacent to edges of said celluloid sheet for holding said sheet on the top of the aforesaid platen, said tabs being adapted to be gripped by the said bales attached to the edges of the printing press platen, a plurality of guides carried by said celluloid sheet, said celluloid sheet having an elongated slot cut therein to receive portions of said guides and to permit adjustment of said guides longitudinally with respect to said celluloid sheet, said celluloid sheet having eraseable printed legends thereon corresponding to a predetermined type form to be printed, a makeready sheet having printed legends thereon corresponding to the aforesaid printed legends on said celluloid, said makeready sheet being positioned beneath said celluloid sheet, a draw sheet positioned over said celluloid sheet and means for attaching said draw sheet to said celluloid and said printing press platen.

5. A method comprising the steps of affixing a sheet of celluloid to the platen of a printing press, registering a printed impression upon said sheet of celluloid, registering a printed impression corresponding to the impression registered on said celluloid upon the uppermost of a plurality of sheets to obtain an offset impression on the back of said uppermost sheet, affixing makeready to the uppermost of said plurality of sheets or portions thereof having the least impression, placing said makeready sheet beneath said celluloid sheet and aligning the printed legends on said celluloid with those on the top of said makeready sheet to position the makeready in proper relation with respect to the type form used to register the printed impression on said celluloid.

6. A combination impression sheet adapted to be used on the platen of a printing press comprising a sheet of celluloid adapted to be placed upon the platen of a printing press, means attached to said celluloid sheet for fastening said sheet to the aforesaid platen, said celluloid sheet having eraseable printed legends thereon corresponding to a predetermined type form to be printed, a makeready sheet having printed legends thereon corresponding to the aforesaid printed legends on said celluloid, said makeready sheet being positioned beneath said celluloid sheet, a draw sheet positioned over said celluloid sheet and means for attaching said draw sheet to said celluloid and said printing press platen.

WILLIAM M. DALTON.