

Dec. 16, 1924.

1,519,225

J. W. TOWNSEND

CLAMPING DEVICE FOR STACKS OF SHEETS

Filed July 21, 1923

Fig. 1.

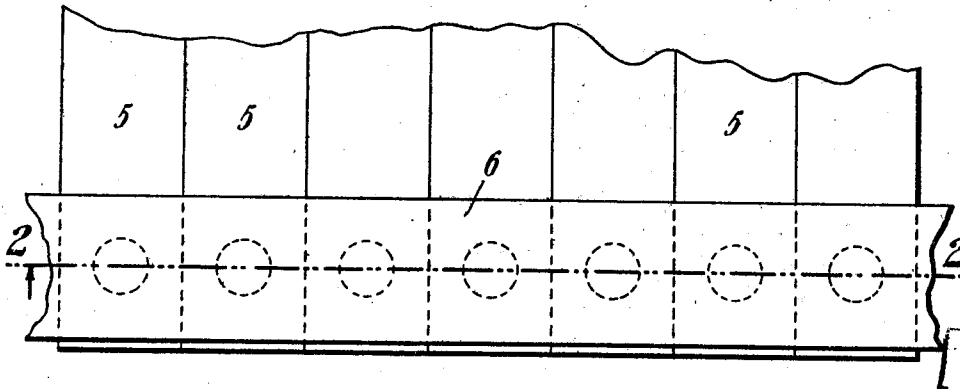


Fig. 2.

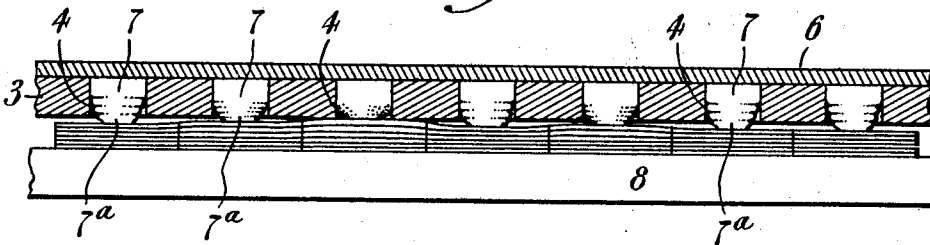
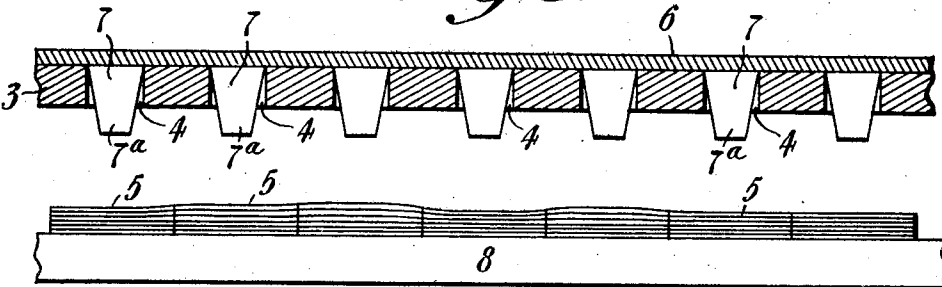


Fig. 3.



Inventor,

John W. Townsend;

By Wilbur M. Stone.

his Attorney.

UNITED STATES PATENT OFFICE.

JOHN WILLIAM TOWNSEND, OF NEW YORK, N. Y., ASSIGNOR TO AMERICAN LITHOGRAPHIC COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW YORK.

CLAMPING DEVICE FOR STACKS OF SHEETS.

Application filed July 21, 1923; Serial No. 652,944.

To all whom it may concern:

Be it known that I, JOHN W. TOWNSEND, a citizen of the United States, and a resident of New York, borough of Bronx, in the county of Bronx and State of New York, have invented certain new and useful Improvements in Clamping Devices for Stacks of Sheets; of which the following is a specification.

This invention relates to clamping devices for stacks of sheets, as of paper or the like, and has for its object to provide a device of the character specified which is adapted for securely clamping a stack or a plurality of stacks of sheets of varying heights. A further object is to provide such a device of simple and inexpensive construction.

With these ends in view and others which will appear later herein, my improvements comprise features illustrated in their preferred embodiment in the drawing accompanying this specification, wherein:—

Figure 1 is a plan view of my improved device arranged in operative position over a plurality of stacks of sheets to be clamped. Fig. 2 is a vertical section on line 2—2 of Fig. 1, with the clamp in operative position. Fig. 3 is a similar sectional elevation showing the clamping device withdrawn from operative engagement with the stacks of sheets.

My improvements are particularly useful in connection with cutting presses wherein a stack of sheets is first cut into strips and then those stacks of strips cut into short lengths. Paper in sheets is notoriously uneven in thickness, often varying materially in thickness within one sheet. So that when stacked into a pile said pile often varies in thickness to such an extent as to preclude efficient clamping throughout its whole width by means of a rigid clamp. This feature of uneven thickness is particularly troublesome when a stack of sheets has been cut into strips and those stacks of strips arranged side by side and clamped for further cutting into short lengths. A rigid clamp brought down onto said stacks of strips will securely hold the thick piles or stacks but will fail to hold those of less thickness. It has been customary to build up the low stacks with strips of waste stock to the level of the maximum stacks so that the rigid clamp would hold all the stacks se-

curely. This is wasteful of both time and material and both are saved by the use of my improved device.

Referring now to the drawing, my improved clamping device comprises a rigid bar 3 having holes, as 4, 4, transversely therethrough, said holes being arranged in a row lengthwise said bar and spaced apart to correspond with the spacing of the stacks of strips to be clamped. Thus each hole 4 is centered widthwise each stack, as 5, respectively. Said bar may be provided with back plate 6, and each hole is provided with a yieldable plug 7. Said plugs have their upper ends seated against back plate 6 and preferably fill their respective holes at the upper ends thereof so that they are retained in their seats by frictional contact. Said plugs taper from their upper ends downwardly, to relatively small lower ends 7^a, some distance below the bottom of bar 3. Said plugs may be made of any one of a variety of yieldable materials, but I have found cork to answer excellently for the purpose.

While the container for plugs 7 is shown, for convenience of making, as comprising bar 3 and back plate 6, it will be obvious that said container can be made in one piece if desired, holes 4 penetrating only part way through said container and forming pockets for the reception of plugs 7.

The operation of the device will be readily understood from the foregoing description and the drawing. The stacks of strips, as 5, 5, are placed side by side on cutting block 8, the direction of their lengths being transverse the direction of length of the clamping device. The clamping device is then lowered into contacting position, with plugs 7 over said stacks 5, respectively, and pressure applied downwardly against back plate 6 until said plugs are more or less compressed and retire more or less into their respective holes 4, see Fig. 2. All of said stacks are thus clamped under approximately equal pressure irrespective of their varying heights. When the pressure is removed the resilience of said plugs causes them to expand and protrude from bar 3 as shown in Fig. 3.

I claim:

1. In a device of the character specified the combination of a rigid container having pockets therein, and a plug of yieldable

material in each pocket in frictional engagement with the upper portion thereof, said plugs protruding from their respective pockets for engaging work to be clamped.

5 2. In a device of the character specified the combination of a rigid container having pockets therein, and a plug of yieldable material in each pocket of a size at its upper end to fill the pocket at its upper end and
10 thence tapering to a relatively small end beyond the lower face of said container, whereby space is provided between the wall of the plug and the wall of the pocket.

3. In a clamping device for a plurality of
15 stacks of sheet strips the combination of a rigid container having pockets therein spaced apart in a lineal row, the center distance between adjacent pockets being equal to the width of any one of a plurality of
20 stacks of equal width to be clamped, and a plug of yieldable material in each pocket of a size at its upper end to fill the pocket at its upper end and thence tapering to a relatively small end beyond the lower face of

said container, whereby space is provided 25 between the wall of the plug and the wall of the pocket.

4. In a clamping device for a plurality of stacks of sheet strips the combination of a container comprising a rigid bar having 30 holes therethrough and a back plate for covering the upper ends of said holes, whereby pockets are provided in said container spaced apart in a lineal row, the center distance between adjacent holes being equal to 35 the width of any one of a plurality of stacks of equal width to be clamped, and a plug of yieldable material in each pocket of a size at its upper end to fill the pocket at its upper end and thence tapering to a rela- 40 tively small end beyond the lower face of said container, whereby space is provided between the wall of the plug and the wall of the pocket.

In witness whereof, I hereby affix my sig- 45 nature this 17 day of July, 1923.

JOHN WILLIAM TOWNSEND.