C. SEYBOLD.

CLAMP FOR PAPER CUTTERS.

APPLICATION FILED JUNE 25, 1920.

1,404,239. Patented Jan. 24, 1922.

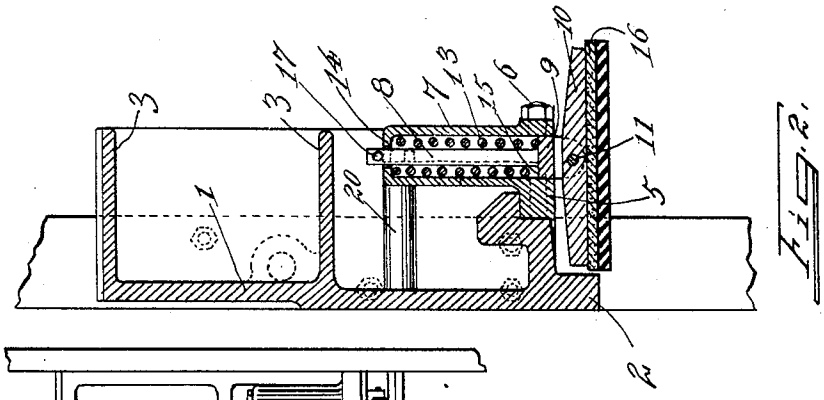


Fig. 2.

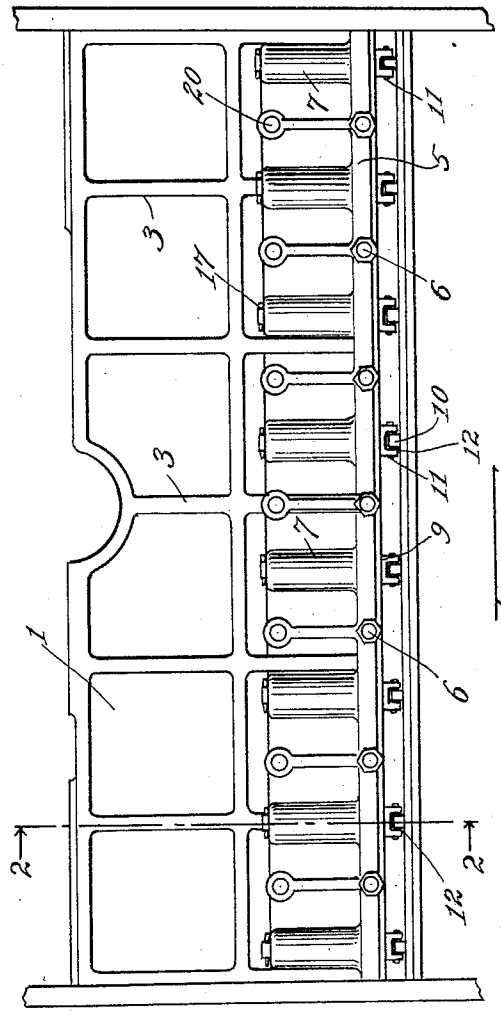


Fig. 1.

INVENTOR:

Charles Seybold

BY Allen & Allen

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES SEYBOLD, OF DAYTON, OHIO.

CLAMP FOR PAPER CUTTERS.

1,404,239. Specification of Letters Patent. Patented Jan. 24, 1922.

Application filed June 25, 1920. Serial No. 391,802.

To all whom it may concern:

Be it known that I, CHARLES SEYBOLD, a citizen of the United States, and a resident of the city of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Clamps for Paper Cutters, of which the following is a full, clear, and exact description, reference being had to the drawings forming part of this specification.

My invention relates to clamps such as are employed for clamping and holding rigid piles of paper stock when submitted to the action of cutting knives in paper cutting and book trimming machines and the object of the invention is to provide an attachment for the ordinary rigid clamp bars to provide a more effective construction for holding tight and rigid paper piles, in which the inequalities of thickness of the paper sheets render it extremely difficult, if not impossible, to hold the stock rigid during the cutting operation.

The invention is particularly applicable for the cutting and trimming of plate calendered paper in which the edges of the sheets not subjected to the polishing and pressing operation of the plates of the calender press, are frequently noticeably thicker than the body of the sheet. When such paper is subjected to the paper cutting machine in substantial piles, the sagging of the pile due to the thicker edges of the sheets is very noticeable and the tendency of the sheets to shift and slip under the ordinary rigid and inflexible clamp bar of the paper cutter renders it extremely difficult to handle such paper stock.

It is the purpose of my invention, therefore, to obviate this difficulty by the employment in connection with the rigid clamp bar of an auxiliary spring clamp flexible in all directions, which may automatically adjust itself to the inequalities of the paper stock whereby any liability of the pile to slip or shift is entirely overcome.

In the drawings,

Figure 1 is a rear view of a paper clamp, with my auxiliary clamp attached.

Figure 2 is a cross section on the lines 2—2 of Figure 1.

I have not thought it necessary to illustrate a paper cutting machine, nor any method of operating the clamp, as the invention may be applied to any construction of machine and to any of the usual clamp bars in use on such machines.

The ordinary rigid clamp bar is shown at 1, provided with the usual clamping edge 2. Where the construction of clamp bar is provided with the usual strengthening ribs 3, the lower end of the bar at the back is cut away or formed for the reception of the auxiliary flexible clamp and in the clamp bar illustrated I provide a series of screw threaded holes for securing to the rigid clamp member the plate 5, which carries the flexible clamp mechanism by the bolts 6, 6. On this plate 5, which extends the entire length of the clamp 1, are a series of housings or casings 7 arranged a short distance apart, say, about six inches, as many as may be required for the length of the clamp. Mounted in each housing 7 is a pin 8 formed with a head 9 at the lower end slotted to receive a shoe 10 which is pivoted transversely to the head by a pivot bolt 11. The slot 12 is sufficiently wide to allow lateral as well as horizontal play of the shoe. A heavy coiled spring 13 is mounted around the pin 8 in the housing bearing between the inwardly extending flange 14 of the housing and the shoulder 15 at the base of the pin, cotter pins 17 being employed to hold the pins in the housings. Permanently secured to the base of each shoe is a strip of flexible material running the length of the clamp. This flexible strip I prefer to form of a strip of leather 16 of suitable thickness together with a strip of rubber material also of substantial thickness. The parts are adjusted so that when the auxiliary clamp thus provided is secured to the main clamp, the contact surface of the auxiliary clamp will extend appreciably below the clamp surface of the main clamp.

As the auxiliary clamp in the construction illustrated is secured near its lower end by the bolts 6, 6, in order to hold the clamp holder rigid I provide a series of bolts 20 threaded into the web of the holder with the heads of the bolts bearing against the back surface of the main clamp.

With this flexible clamp combined with the main clamp, the bundle or pile of paper sheets is first clamped by the auxiliary clamp member and held under tension of the coiled springs before the main clamp is brought into action and the shoes permit the flexible member to bend in all directions both later-

ally and transversely and thus to contact uniformly with the paper stock no matter how much it may sag or bend, also the bending of the flexible clamp between the points directly under the springs puts tension on the clamp. This holding of the stock with the auxiliary clamp presents a comparatively rigid pile to the main clamp and the paper can be held and cut with the expenditure of much less power and much more accurately than under ordinary conditions.

While I have illustrated my invention as applied to a particular construction of rigid clamp and have described one method of applying same, I do not wish to be understood as limiting the invention to the details shown, as it is obvious that many changes in these details may be made without departing from the spirit of my invention.

Having thus described my invention what I claim as new and desire to secure by Letters Patent, is:—

1. The combination with a rigid main clamp bar of, an auxiliary, flexible clamp for paper cutters, comprising a clamping member of suitable flexible material with means for applying pressure thereto at fixed points whereby the flexible material may conform in all directions to the thickness of the paper pile and assist the action of the main clamp.

2. The combination with a rigid main clamp bar of, an auxiliary, flexible clamp for paper cutters comprising a clamping plate of suitable, flexible material, shoes arranged at intervals to which the flexible material is secured and means for applying pressure simultaneously to all of the shoes whereby the flexible material may yield intermediate the shoes to conform to the thickness of the paper pile and assist the action of the main clamp.

3. An auxiliary, flexible clamp for paper cutters, comprising a clamping plate of suitable flexible material, shoes arranged at intervals to which the flexible material is secured, carriers for the shoes, to which the same are pivoted and means for applying spring pressure to the shoes to furnish a yieldable clamp for the paper pile.

4. An auxiliary, flexible clamp for paper cutters, comprising a clamping plate of suitable flexible material, shoes arranged at intervals to which the flexible material is secured, carriers for the shoes to which the same are pivoted and upon which they are laterally shiftable and means for applying spring pressure to the shoes to furnish a yieldable clamp for the paper pile.

5. An auxiliary flexible clamp for paper cutters, comprising a rigid bar with housings at intervals thereon, springs in the housings, pins movable in the housings against which the springs bear, shoes pivoted to the pins and a strip of suitable flexible material secured to the shoes to serve as a flexible clamp plate to hold the paper pile under spring tension.

6. In a clamp for paper cutters, the combination with a rigid clamp bar for holding the paper stock at the cutting edge, of a separate auxiliary flexible clamp member and means for securing same to the main clamp to co-operate therewith in advance of the action of the main clamp.

7. In a clamp for paper cutters, the combination with a rigid clamp bar for holding the paper stock at the cutting edge of a separate auxiliary flexible clamp to co-operate therewith in advance of the rigid bar, said flexible clamp comprising a clamping plate of suitable, flexible material, shoes arranged at intervals to which the flexible material is secured and means for applying pressure simultaneously to all of the shoes whereby the flexible material may yield intermediate the shoes to conform to the thickness of the paper pile.

8. In a clamp for paper cutters, the combination with a rigid clamp bar for holding the paper stock at the cutting edge of a separate auxiliary flexible clamp to co-operate therewith in advance of the rigid bar, said flexible clamp comprising a clamping plate of suitable, flexible material, shoes arranged at intervals to which the flexible material is secured, carriers for the shoes, to which the same are pivoted and means for applying spring pressure to the shoes to furnish a yieldable clamp for the paper pile.

9. In a clamp for paper cutters, the combination with a rigid clamp bar for holding the paper stock at the cutting edge, of a separate auxiliary flexible clamp member, comprising a strip of leather and a strip of rubber material united together, and means for securing same to the main clamp to co-operate therewith in advance of the action of the main clamp.

CHARLES SEYBOLD.

Witnesses:
WM. F. KINZELER,
F. K. BARUBART.