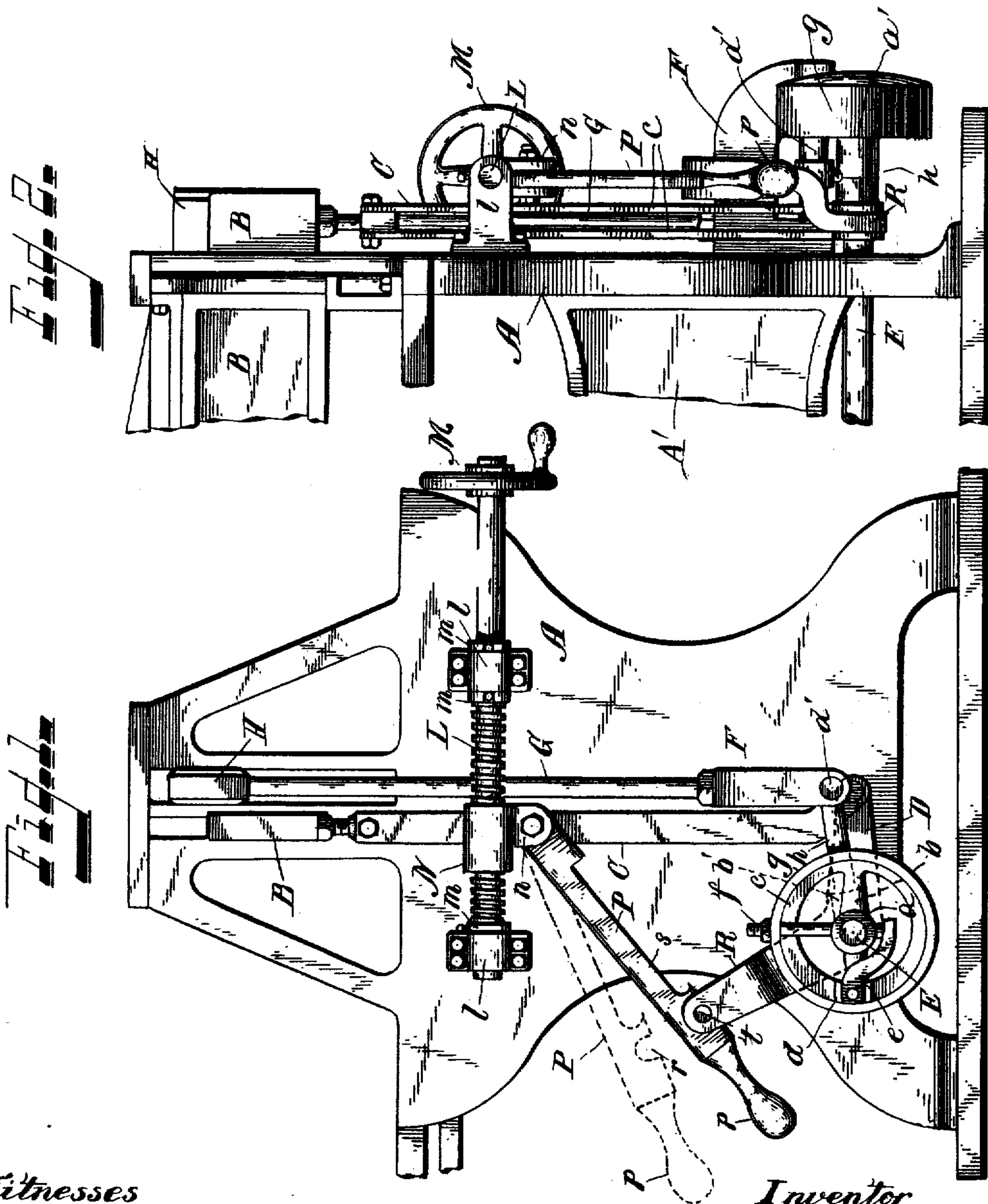


(No Model.)

C. SEYBOLD.
HAND CLAMP FOR PAPER CUTTERS.

No. 597,070.

Patented Jan. 11, 1898.



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HAND-CLAMP FOR PAPER-CUTTERS.

SPECIFICATION forming part of Letters Patent No. 597,070, dated January 11, 1898.

Application filed February 13, 1897. Serial No. 623,230. (No model.)

To all whom it may concern:

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

My improvements relate to a certain novel construction of hand-clamp to be used in connection with an automatic paper-cutter, whereby the hand-clamp may be thrown into operation at a moment's notice and which by a very simple adjustment may also be employed as a stop-gage to limit the upstroke of the clamp for certain purposes when the machine is working automatically.

In automatic paper-cutting machines it has long been customary to supply a hand-clamp or means for operating the clamp by hand-power when it is desired to disconnect the clamp from the cutting-knife, so that the clamp will not be operated automatically with the knife. This has heretofore been accomplished by a hand-wheel placed at the top of the machine and arranged to be coupled to the clamp when the friction-clutch between the knife-operating and clamp-operating device is released, and in order to properly operate the clamp by hand racks and pinions or other equivalent devices have been employed, connected by a suitable connecting-rod, in order that the pressure might be equally distributed at each end of the clamp; but with such hand-clamp attachments the hand-wheel cannot be located in a convenient position, the connecting mechanism between each end of the clamp must necessarily be made somewhat small, and a good deal of power is lost in the friction on racks and pinions. In addition to this there has been no convenient way to stop the upstroke of the clamp, when used automatically, at any desired position. It is to overcome these objections that my invention is directed; and it consists of a certain novel construction and arrangement of parts to be hereinafter more particularly pointed out and claimed.

In the drawings, Figure 1 is a side elevation of an automatic paper-cutting machine, showing my hand-clamp. Fig. 2 is an end elevation of one side of the same machine.

A is one of the side standards or frames of the machine, connected and bolted to the other side standard by suitable cross-frames, the middle cross-frame being shown broken away at A'.

B is the clamp, connected at each end by suitable connecting-rods C with the crank D, which is keyed on the shaft E, running to the other side of the machine, where a similar connection is had with the other end of the clamp.

F is one end of a cam-plate by means of which, with suitable gearing, the knife-bar is operated, the cam-plate being connected at each end by connecting-rods G with the knife-bar H.

Connection is had between the clamp-driving shaft E and the knife-driving cam-plate F by means of a hub *a*, mounted on and keyed to the shaft E, which hub carries by arm *b* a band *c*, open at one side to receive the block *d*. This block carries a lever *e*, so that by moving the lever the block will turn on its pivot and open out the expansion-band *c*.

f is a screw which passes through the shaft E and has a bearing against the end of the lever *e*, by means of which the band *c* may be expanded as desired. Mounted loosely around this expansion-band *c* is a ring-band *g*, provided with the hub *a'*, mounted loosely on shaft E. This hub *a'* is provided with a socket *b'*, within which socket the rod *h* slides out and in. The rod *h* is pivoted or coupled on the bar *d'*, secured across an opening in the cam-plate F, so that as the cam-plate F is reciprocated to operate the knife the ring-band *g* will be oscillated. It will be evident, therefore, that when the band *c* is expanded to clutch the ring-band the shaft E will be oscillated to draw down or raise the clamp.

It will be understood that the construction above described is old and forms no part of the present invention; but the above brief description has been given as showing the main features of construction, which, as above described, are fully shown in my prior patent, No. 511,972, of January 2, 1894.

11 are two journal-boxes secured to the side standards A of the frame at a convenient height, within which is mounted the screw L, operated by hand-wheel M at a convenient position in front of the machine. Mounted on this screw L is a screw-threaded follower N, so that the turning of the screw by the hand-wheel will cause the follower to travel back and forth between the journal-boxes, the screw being held in position by the collars m m. Pivoted to the lug n on the follower N is a bar P, which can be raised and lowered by the handle p. This bar P is provided with a notch r and a long recess or notch s. Extending forward from the crank-arm D is the arm R, carrying at its upper end the pin t to receive the bar P either in the notch r or the long recess s.

It will be evident from this construction that when it is desired to use the machine with the hand-clamp the friction-clutch between the clamp-driving shaft and the knife-driving cam-plate may be released by adjusting screw f and that the bar P may be connected with the arm R on the crank D by securing the notch r of the bar on the pin t at the end of this arm. When this is done, it will be evident that the clamp may be operated by hand by turning the hand-wheel M, which will drive the follower N to oscillate the clamp-shaft E and thus raise and lower the clamp. Now when the pin t is placed in the other notch or recess s and the expansion-band clutch is adjusted to operate the clamp automatically the movement of the arm R will be limited to stop when it reaches the outer end of the groove s, so that by adjusting the follower N at any desired position the clamp in its upward movement may be stopped at any point desired, and thereafter the friction-clutch will slip during the subsequent operation of the knife-bar. It will thus be seen that the notch r forms a fixed coupling-point for the arm R to the bar P, while the long notch s allows the arm to move freely within the limits of the notch s and thus forms a sliding coupling connection between the arm R and the bar P. This adjustment whereby the elements of the hand-clamp can be used as a stop-gage for the upstroke of the clamp is a matter of considerable importance when cutting labels and the like where the ordinary cutting-gage is not employed but the margins of the labels are used as the guide by which to cut. Then by stopping the clamp in its upstroke as soon as it clears the top of the package the edge of the clamp forms a perfect gage by which to cut.

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

1. In a paper-cutting machine, the combi-

nation, with cutting-knife and actuating mechanism therefor, and a clamp and means for operating same, with friction-clutch intermediate said means and mechanism, of a screw and hand-operated mechanism therefor with connecting device between said screw and clamp-driving means, whereby, when the friction-clutch is released, the clamp may be driven by hand but when not released the movement of the clamp will be limited thereby, substantially as shown and described.

2. In a paper-cutting machine, the combination, with cutting-knife and actuating mechanism therefor, and a clamp and means for operating same, with friction-clutch intermediate said means and mechanism, of a screw and hand-operated mechanism therefor, with connecting device between said screw and clamp-driving means, provided with a fixed and a sliding stop, whereby when adjusted with fixed stop the clamp may be operated by hand and when adjusted with sliding stop the clamp movement will be limited thereby, substantially as shown and described.

3. In a hand clamp device for paper-cutters, the combination, with the clamp, connecting-rods and clamp-driving shaft operating same, of a screw, with screw-threaded follower mounted thereon, and connecting-bar attached thereto for connecting said follower to the clamp-driving shaft, substantially as shown and described.

4. In a hand clamp device for paper-cutters, the combination, with the clamp and power-driven shaft for operating same automatically, of a screw with a screw-threaded follower mounted thereon and connecting-bar attached thereto, provided with means for connecting said follower to the clamp-shaft, and with a stop for limiting the rotation of the clamp-shaft, substantially as shown and described.

5. In a hand clamp device for paper-cutters, the combination, with the clamp and power-driven shaft, with cranks and pulling-bars for operating same automatically, of a screw and hand-operated mechanism therefor, with a screw-threaded follower mounted thereon, and a connecting-bar attached thereto, provided with a notch and a groove, and arm on the clamp-shaft to which said connecting-bar is secured either in the notch or the groove, whereby the clamp may be driven by hand or the upstroke of the clamp may be limited in its play, substantially as shown and described.

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