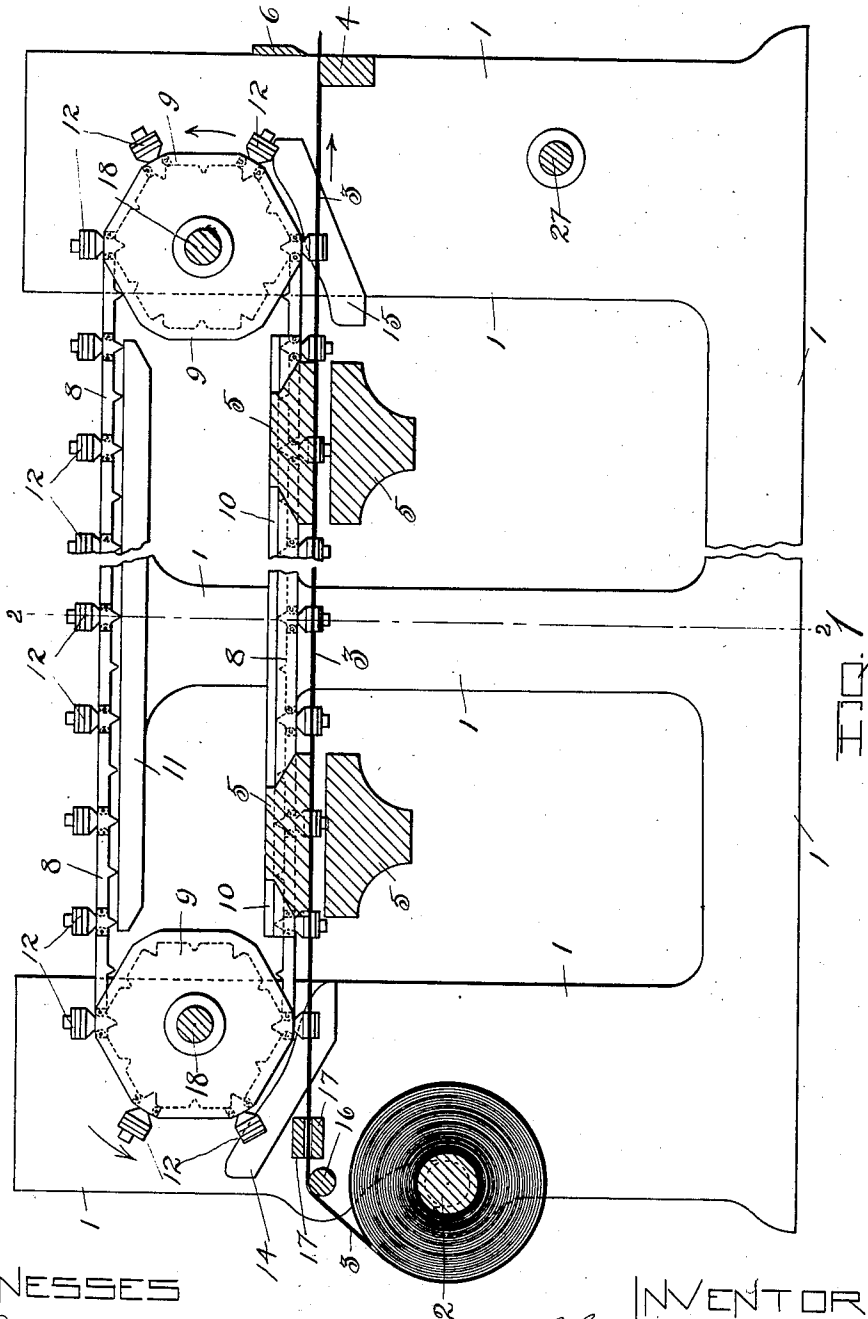


C. VON GLAHN.
PAPER FEEDING APPARATUS.
APPLICATION FILED MAR. 21, 1908.

977,146.

Patented Nov. 29, 1910.

2 SHEETS—SHEET 1.



WITNESSES

J. Donabach.
E. Manning.

INVENTOR

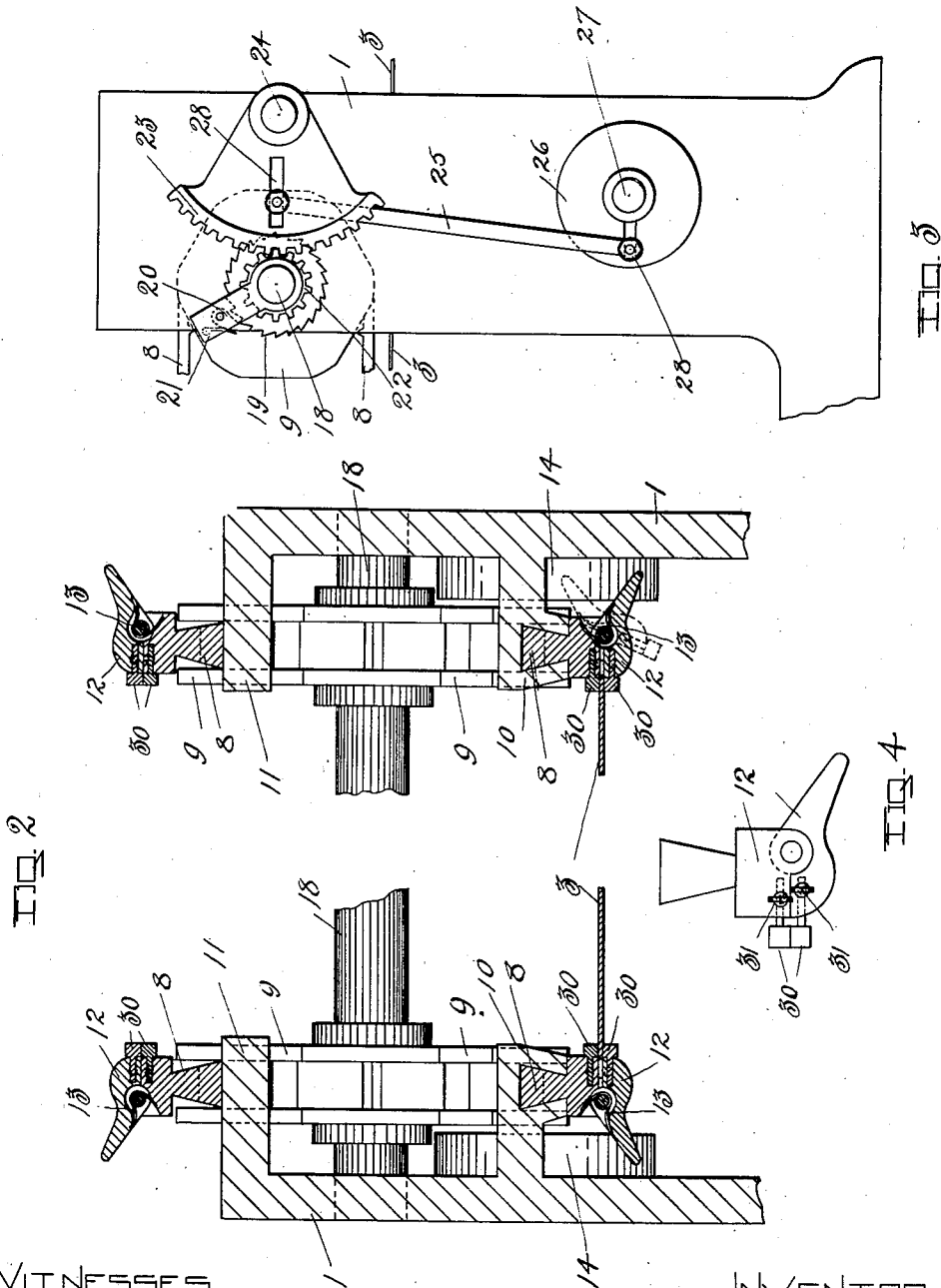
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UNITED STATES PATENT OFFICE.

CHARLES VON GLAHN, OF WATERVLIET, NEW YORK.

PAPER-FEEDING APPARATUS.

977,146.

Specification of Letters Patent. Patented Nov. 29, 1910.

Application filed March 21, 1908. Serial No. 422,414.

To all whom it may concern:

Be it known that I, CHARLES VON GLAHN, a citizen of the United States, residing at Watervliet, county of Albany, and State of New York, have invented certain new and useful Improvements in Paper-Feeding Apparatus, of which the following is a specification.

The invention relates to such improvements and consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification.

Similar characters refer to similar parts in the several figures therein.

Figure 1 of the drawings is a central, vertical, longitudinal section of my improved paper-feeding apparatus. Fig. 2 is a vertical cross-section of the same taken on the broken line 2—2 in Fig. 1. Fig. 3 is a view in side elevation of one end of the apparatus, showing the intermittent feed-mechanism. Fig. 4 is a view in side elevation, on a larger scale than the other figures, of one of the paper-clamps detached.

My invention is applicable to any machine or apparatus wherein it is desired to accurately feed a strip or web of paper or the like.

Referring to the drawings, wherein the invention is shown in preferred form, 1, represents the frame of the apparatus provided with suitable bearings for a roll, 2, of paper or the like adapted to be fed through the apparatus from one end to the other of the same.

I have shown the web, 3, of paper passing between the members, 5, of a plurality of mechanisms adapted to successively act upon the same areas of the web as the web passes through the apparatus by an intermittent feed-movement.

These mechanisms may be of any known form adapted to be operated by hand or otherwise to successively act upon the same areas of the web; for example, mechanisms for printing in different colors, or mechanisms for printing and embossing, or otherwise acting upon the web.

At the end of the apparatus, remote from the roll, 2, I have shown cutting mechanism comprising a stationary cutter, 4, and a mov-

able cutter, 6, which cutting mechanism may be of any known form, and operated by hand or in any other manner to sever the web from time to time.

When it is desired to successively print in different colors, or to successively print or emboss the same areas of a web of paper or the like, or to accurately cut from a web of paper predetermined lengths, it is necessary that the paper should be accurately fed by an intermittent feed-movement to the mechanism or mechanisms adapted to act thereupon.

For the purpose of securing such accuracy in feeding the paper, I provide a pair of endless carriers on opposite sides of the path of the web in passing through the apparatus, and mount at frequent intervals upon each of said carriers clamps adapted to grip the opposite edges of the web, and I provide means for automatically opening said clamps to receive the respective edges of the web and for automatically opening said clamps to release the web therefrom.

The endless carriers comprise sprocket-chains, 8—8, passing over the respective sprocket-wheels, 9—9, the lower stretches of said carriers being in a plane slightly above that of the web of paper in passing through the apparatus. A channeled guide, 10, mounted upon the frame of the apparatus, serves to receive and support the links in the lower stretch of each chain, the channels in said guides being dove-tailed in cross-section, and the several links in the chains being of similar form thereto in cross-section. The links in the upper stretches of the chains are supported by, and slide along, the respective shelves, 11, mounted upon the frame of the apparatus.

Mounted upon certain of the links of each chain at frequent intervals are a series of clamps, 12, each adapted to receive and grip between its members an edge of the web, as shown in Fig. 2. These clamps are adapted to be closed automatically by springs, 13, and, as they are brought into the plane of the web, they are automatically opened by engagement with a cam, 14, which releases them to the closing action of their springs as soon as the paper has been properly located between the clamp-members. As soon as the clamps are by the movement of the carriers relieved from the control of the cam, 14, they automatically close upon and

tightly grip the opposite edges of the web, and positively cause the web to accompany the lower stretches of the carriers in their movement. Just before the clamps are carried out of the plane of the web by the movement of the carriers upward around the sprocket-wheels at the rear end of the apparatus, the clamps on each carrier are again automatically opened successively by engagement with a cam, 15, and are thereby held open until the clamps pass above the plane of the paper.

The web passes from the roll, 2, over a guide-roll, 16, and between a pair of flat guides, 17, whereby the web is flatly distended transversely, so that its edges are brought into proper position to receive the successive clamps.

Fixed upon the shaft, 18, of the sprocket-wheels at the rear end of the apparatus is a ratchet, 19, adapted to be engaged by a pawl, 20, mounted upon a pawl-carrier, 21, which is in fixed relation to a toothed pinion, 22, loosely mounted upon said shaft, 18, and adapted to be engaged by a toothed segment, 23, pivotally mounted at, 24, upon the frame of the machine.

The toothed segment, 23, is connected by a pitman, 25, with a crank-disk, 26, fixed upon a main power-shaft 27. The power-shaft, 27, is continuously rotated and serves through the pitman, 25, to cause a reciprocating motion of the toothed segment, 23, whereby rotative movements, in opposite directions alternately, are imparted to the toothed pinion, 22, causing said toothed pinion to impart to the pawl-carrier, 21, a reciprocating motion, whereby the ratchet, 19, is intermittently operated, causing a like intermittent operation of the sprocket-wheels and carriers, whereby an intermittent feed-movement is imparted to the web 3.

The length of the intermittent feed-movement can be varied by varying the throw of the gear-segment, 23, which can be accomplished by adjusting the pivotal connection of the upper end of the pitman along the radial slot, 28, in said segment, or by adjusting the pivotal connection of the lower end of the pitman along the slot, 28, in the crank-disk, which adjustment can be accomplished in any known manner.

The mechanisms, 5, and cutting mechanism, 6, can be operated in any known manner, by hand or otherwise, during the periods between the intermittent feed-movements of the web.

To adapt the apparatus for webs of different widths, I have provided the clamp-members with adjustable jaws, 30, having shanks inserted and adjustable longitudinally in slideway-apertures in the respective clamp-members, and adapted to be secured in adjusted positions by means of set-screws 31.

What I claim as new and desire to secure by Letters Patent is—

1. In an apparatus for feeding a web of paper or the like, and in combination, a pair of endless carriers, located on opposite sides of the path of the web with their lower stretches in substantially the plane of the web; slideway-supports for the lower stretches of said carriers, the members of said carriers and said supports being similarly dove-tailed in cross-section and said slideways opening downwardly at their contracted side; paper-gripping mechanisms carried by the respective carriers and adapted to grip the opposite edges of said web, said mechanisms being suspended from said carriers through the openings in said slideway-supports; means for automatically closing the several gripping mechanisms upon the edges of the web; means for automatically opening the several gripping mechanisms successively to receive the web; and means for opening the gripping mechanisms successively to release the web.

2. In an apparatus for feeding a web of paper or the like, and in combination, an endless carrier located at one side of the path of the web, with one of its stretches in substantially the plane of the web; a slideway-support for said stretch of said carrier provided with a downwardly opening slot; and paper-gripping mechanisms carried by said carrier and adapted to grip the edge of said web, said mechanisms being suspended from said carrier through the downwardly opening slot in said slideway-support.

3. In an apparatus for feeding a web of paper or the like, and in combination, a pair of endless carriers located on opposite sides of the path of the web, with their lower stretches in substantially the plane of the web; slideway-supports for the lower stretches of said carriers, said supports being provided with longitudinal slots on their underside; paper-gripping mechanisms carried by the respective carriers and adapted to grip the opposite edges of said web, said mechanisms being suspended from said carriers through the slots in the underside of the respective slideway-supports; means for automatically closing the several gripping-mechanisms upon the edges of the web; means for automatically opening the several gripping-mechanisms, successively, to receive the web; and means for opening the gripping-mechanisms, successively, to release the web.

In testimony whereof, I have hereunto set my hand this 14th day of March, 1908.

CHARLES VON GLAHN.

Witnesses:

DWIGHT S. CLARK,
FRANK C. CURTIS.