

No. 664,055.

Patented Dec. 18, 1900.

H. MANEGOLD.
PAPER DAMPING MACHINE.
(Application filed Mar. 17, 1899.)

(No Model.)

Fig. 1.

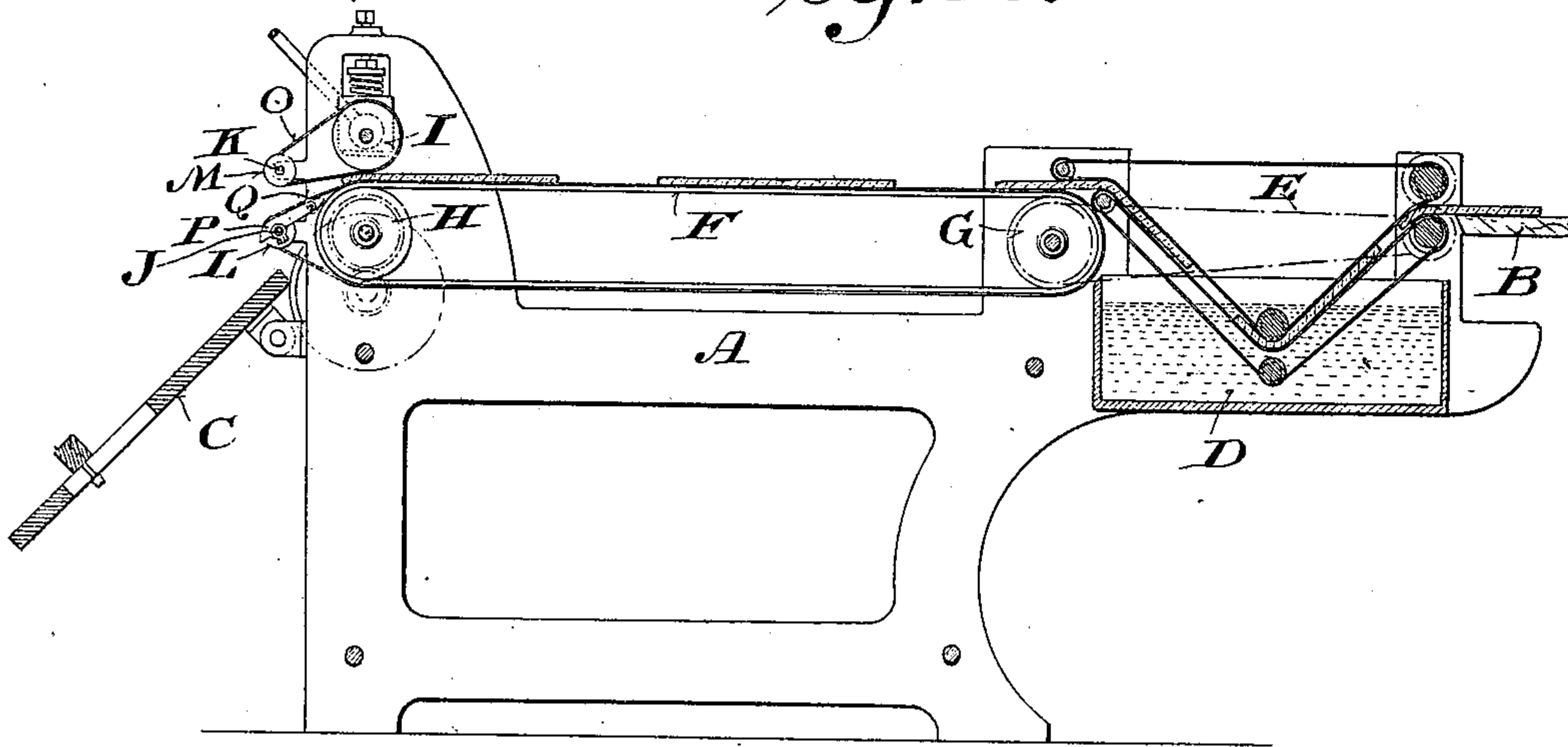


Fig. 2.

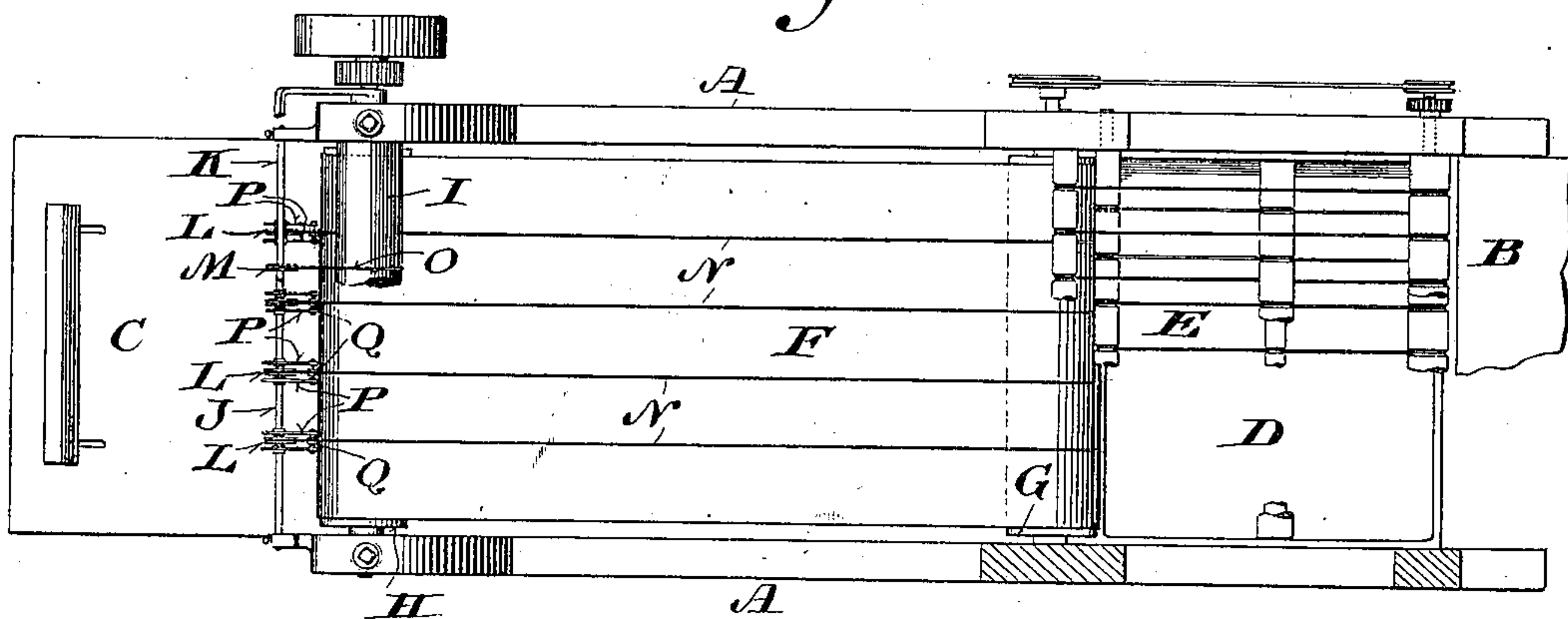


Fig. 3.

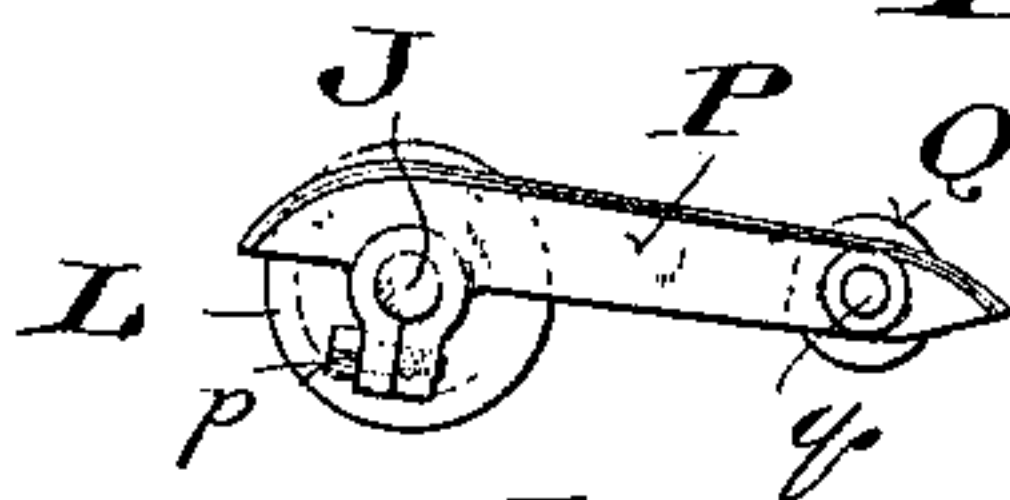
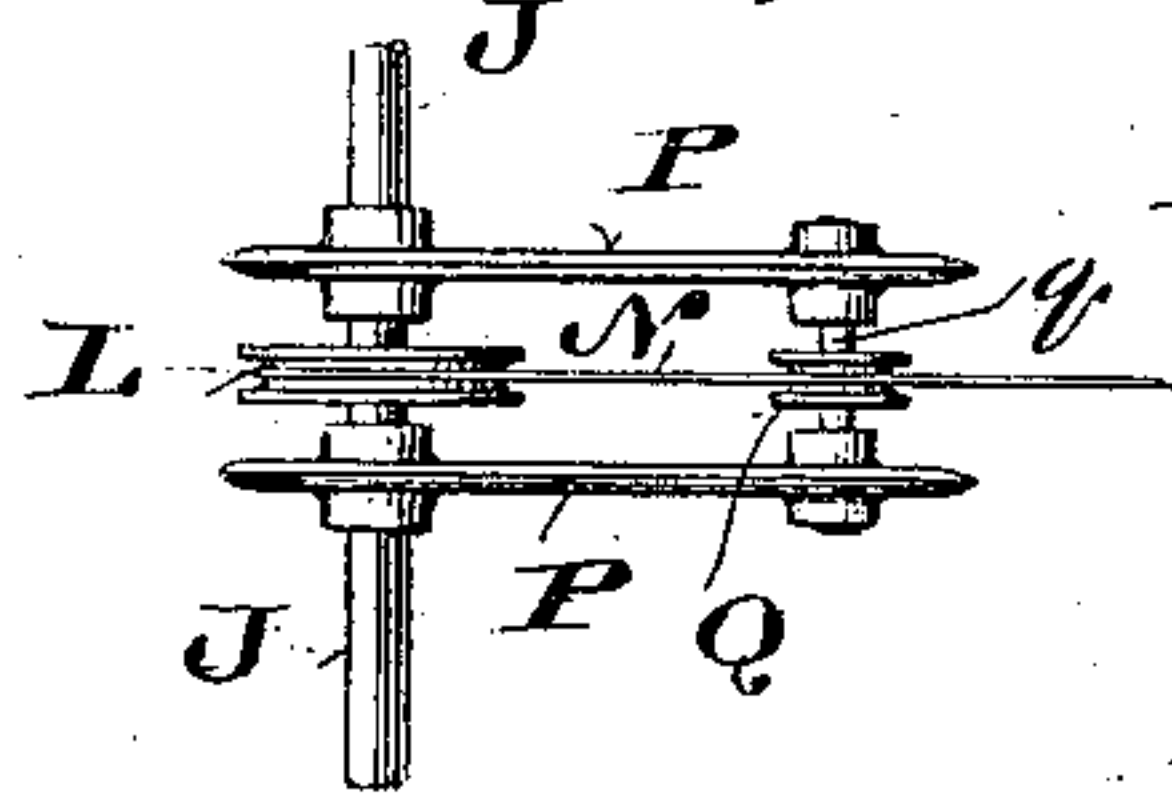


Fig. 4.



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UNITED STATES PATENT OFFICE.

HENRY MANEGOLD, OF MILWAUKEE, WISCONSIN, ASSIGNOR TO THE MILWAUKEE PAPER DAMPENING MACHINE COMPANY, OF SAME PLACE.

PAPER-DAMPING MACHINE.

SPECIFICATION forming part of Letters Patent No. 664,055, dated December 18, 1900.

Application filed March 17, 1899. Serial No. 709,495. (No model.)

To all whom it may concern:

Be it known that I, HENRY MANEGOLD, a citizen of the United States, residing at Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented certain new and useful Improvements in Paper-Damping Machines, of which the following is a specification, reference being had to the accompanying drawings, forming a part thereof.

My invention relates to machines for moistening paper preparatory to printing thereon, particularly by lithographic processes.

It consists, essentially, in devices for automatically peeling and separating the moistened paper from the pressing-rollers of a paper-damping machine and delivering the same from the machine in a smooth unwrinkled condition, as hereinafter particularly described, and pointed out in the claims.

In the accompanying drawings, illustrating a paper-damping machine to which my invention is applied, like letters designate the same parts in the several figures.

Figure 1 is a vertical longitudinal section of the machine. Fig. 2 is a plan view, certain parts being broken away and shown in horizontal section; and Figs. 3 and 4 are detail views, on an enlarged scale, of parts of the devices for separating the wet paper from the lower pressing-roller.

In machines of this class great difficulty has been experienced in separating the wet paper from the surfaces of the pressing-rollers or conveying-belt without tearing or wrinkling the same and delivering it in a smooth unwrinkled condition from the machines. This has been the case particularly with fragile or thin paper, which has a greater tendency to stick to the surface of the pressing-rollers and is more easily torn and wrinkled. It is the purpose of my invention to overcome this difficulty.

Referring to Figs. 1 and 2 of the drawings, A designates the frame of a paper-damping machine, provided at one end with a leaf or table B for holding the paper to be moistened and at the other end with a shelf C, upon which the moistened paper is deposited as it passes from the pressing-rollers.

D is a tank for holding water carried by the

frame A next to and below the inner edge of the leaf B.

E is a conveyer, preferably consisting of cords or bands and rollers arranged to receive the sheets of paper from the leaf or table B and carry them through the water in the tank D, so as to evenly wet both sides of the paper.

F is an endless belt or apron supported horizontally upon rollers G and H in position to receive thereon the wet paper as it is delivered from the conveyer E.

I is a roller supported above and parallel with the roller H by vertically-yielding bearings.

The rollers H and I serve to press the wet paper carried between them upon the belt F and to remove the surplus water therefrom. The belt F is preferably made to run at a little faster speed than the conveyer E, so that as the wet paper is delivered thereto it will be slightly stretched lengthwise, thereby preventing puckering and wrinkling.

I make no claim to the machine which is thus briefly described for the purpose of explaining the nature, purpose, and operation of my invention.

To separate the wet paper from the belt F and roller I, to which it tends to cling, without wrinkling or tearing, and to deposit the same as it is delivered from the machine in a smooth condition and in an even pile upon the shelf C, the machine is provided with take-off and delivery devices, hereinafter described and constituting, in combination with the pressing-rollers or water-expelling devices of the damping-machine, my invention.

J and K are rods or shafts supported at the ends by the frame A, parallel with and on the delivery side of the pressing-rollers H and I.

L L are grooved pulleys or sheaves mounted at intervals and adapted to turn freely upon the rod J, and M M are similar pulleys or sheaves mounted in like manner at suitable intervals on the rod K.

N N are cords or bands passing on the outside of the belt F around the roller G, over the roller H, between it and the roller I, and over the sheaves L, which serve as guides to carry said cords away from the roller H on the delivery side thereof. O O are like or

similar cords or bands passing around the upper roller I and the sheaves M, which serve as guides to carry said cords O away from said roller I on the delivery side thereof.

5 P represents arms or supports adjustably mounted upon the rod J and extending therefrom toward the roller H, close to which they terminate at their inner ends. The several arms P, between which the pulleys L are located, are connected at their inner ends in
10 pairs by short rods q, upon which grooved pulleys or sheaves Q are revolvably mounted in line with the pulleys L, as shown in detail in Figs. 3 and 4. The upper edges of
15 these arms are preferably beveled to present sharp or narrow bearings to the under side of the paper, slightly below and parallel with the cords N between the pulleys L and Q. The hubs or sleeves at the outer ends of said
20 arms through which the rod J. passes are split and provided, as shown in Fig. 3, with clamping-screws p, by means of which they are adjustably fastened upon said rod. The upper edges of said arms are curved down-
25 wardly at their ends, as shown in Fig. 3, to prevent catching and tearing the paper. The arms are so adjusted that the pulleys Q at their inner ends will support the cords N near the points where they leave the upper
30 side of the roller H, and thus prevent the wet paper, which tends to stick to and follow the belt F, from deflecting the cords downward and stretching them. The upper edges of the arms P prevent the paper from sag-
35 ging between the pulleys L and Q and between the cords N and assist the cords in guiding the paper in a smooth unwrinkled condition upon the shelf C.

For the purpose of more clearly illustrating
40 the arrangement of parts and the operation of the machine the thickness of the paper which is shown as passing through the machine is greatly exaggerated, thus visibly separating the upper and lower cords of the con-
45 veyer E and also the pressing-rollers H and I. The upper cords and the pulleys M, by which they are carried away from the roller I on its delivery side, prevent the wet paper from sticking to and wrapping around said roller;
50 but as this is not apt to occur these cords and pulleys may be dispensed with. I prefer, however, to use them as a safeguard against the possible contingency of the paper sticking to the upper pressing-roller. Under cer-
55 tain conditions, particularly when thick heavy paper is to be dampened, the belt or apron F may be dispensed with and the pressing-rollers H and I arranged to receive the wet paper directly from the conveyer E. In
60 this case the lower take-off cords N are passed directly around the lower pressing-roller H; but their operation in separating the wet paper therefrom is the same as in separating it from said belt, as hereinbefore explained.

65 I claim—

1. In a paper-dampening machine the combination with pressing-rollers and means for

passing the dampened paper between them, of cords or bands passing over the lower roller, guides arranged to carry said cords
70 away from said roller on the delivery side thereof, and arms extending from said guides approximately parallel with said cords or belts to points near the surface of said roller where the paper leaves the same, substan-
75 tially as and for the purposes set forth.

2. In a paper-dampening machine the combination with pressing-rollers and means for passing the dampened paper between them,
80 of cords or bands passing over the lower roller, guides arranged to carry said cords or bands away from said roller on the delivery side thereof, and vertically-adjustable arms extending from said guides to points close to
85 the surface of said roller where the paper leaves the same, substantially as and for the purposes set forth.

3. In a paper-dampening machine the combination with pressing-rollers and an endless belt passing over the lower roller for carrying
90 the dampened paper between said rollers, of cords or bands passing over said belt between said rollers, guides arranged to carry said cords or bands away from said belt at the de-
95 livery end thereof, and arms extending from said guides to points close to the surface of said belt where the paper leaves the same, substantially as and for the purposes set forth.

4. In a paper-dampening machine the combination with pressing-rollers for expelling sur-
100 plus water from the paper, and means for passing the wet paper between said rollers, of cords passing over the lower roller, a rod or shaft arranged parallel with and on the de-
105 livery side of said rollers and below the top of the lower roller, sheaves mounted upon said rod or shaft and guiding said cords away from the lower roller on its delivery side, arms mounted upon said rod or shaft and extend-
110 ing therefrom toward the lower roller, and sheaves carried by said arms and supporting said cords near the points where they leave the lower roller, substantially as and for the purposes set forth.

5. In a paper-dampening machine the combination with a pair of pressing-rollers arranged
115 one above the other for expelling surplus water from wet paper, and means for passing the paper between said rollers, of two sets of endless cords passing between said rollers,
120 guides arranged parallel with said rollers on the delivery side thereof and carrying said cords away from them, and arms extending from the lower guides parallel with the cords passing over them to points close to the sur-
125 face of the lower pressing-roller where said cords leave it, substantially as and for the purposes set forth.

In witness whereof I hereto affix my signature in presence of two witnesses.

HENRY MANEGOLD.

Witnesses:

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