

(No Model.)

D. LOCKWOOD.

DANDY ROLL FOR PAPER MAKING MACHINES.

No. 301,732.

Patented July 8, 1884.

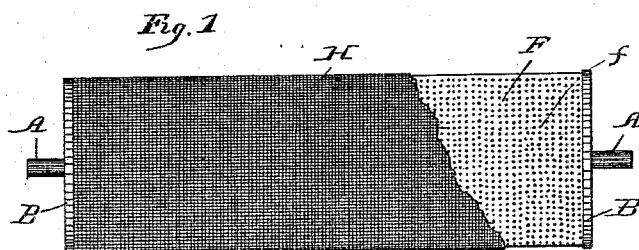


Fig. 3.

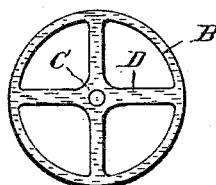
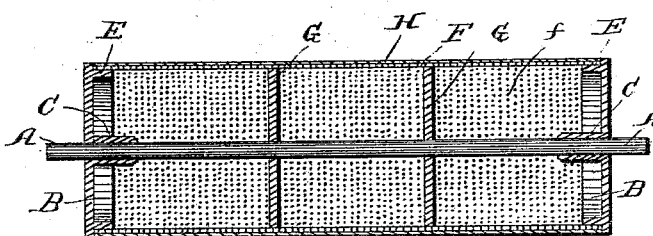


Fig. 2.



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UNITED STATES PATENT OFFICE.

DAVID LOCKWOOD, OF CANNON'S STATION, CONNECTICUT, ASSIGNOR TO
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DANDY-ROLL FOR PAPER-MAKING MACHINES.

SPECIFICATION forming part of Letters Patent No. 301,732, dated July 8, 1884.

Application filed April 7, 1884. (No model.)

To all whom it may concern:

Be it known that I, DAVID LOCKWOOD, a citizen of the United States, residing at Cannon's Station, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Dandy-Rolls for Paper-Making Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The object of my invention is to produce a dandy-roll which shall be simple and economical in construction, exceedingly durable, and which has and will always preserve a perfect cylindrical form. It has been a serious fault with these rolls heretofore that they would not retain a perfectly cylindrical form, and, moreover, that they were exceedingly expensive in construction. The backing has been made in various ways—as, for instance, a series of parallel metallic rods have been secured to the two end pieces of the roll and supported throughout their length by a series of rings made of heavy wire, which are placed a suitable distance apart and extend the entire length of the roll, the rods being brazed to the rings and to the two end pieces of the roll, and the covering of wire-cloth laid over the rods. Another style has been to use a less number of rods—as, for instance, seven or eight—which are secured to the two end pieces of the roll, and are supported by rings placed at a suitable distance apart throughout the length of the cylinder. The backing proper, in this class of rolls, consists of a layer of wire wound spirally outside of the rods from end to end of the cylinder. Numerous other styles of dandy-rolls are in use. I have merely referred to the two just mentioned as two of the most prominent styles; but all dandy-rolls in use, so far as I am aware, have been costly to manufacture, have been unnecessarily heavy, and their construction has been such that in use they have soon lost the form of a perfect cylinder, the effect of which has been to produce irregularities in the surface of the paper, which are frequently so prominent as to impair the quality of the paper, and when the paper has

not been seriously damaged the ridges in the rolls have caused marks upon the paper, which are very apparent upon close examination.

In order to wholly obviate the objections stated above, I have devised the novel construction which I will now proceed to describe, and then point out in the claims.

In my description I shall refer by letters to the accompanying drawings, forming part of this specification, in which—

Figure 1 is an elevation of my improved dandy-roll, a portion of the wire-cloth covering being broken away to show the perforated backing. Fig. 2 is a central vertical section showing the shaft in elevation, and Fig. 3 is an end view.

Similar letters indicate like parts in all the figures.

A represents a central shaft, and B the end pieces of the rolls. These end pieces are preferably not cast solid, but for the sake of lightness are provided with central hubs, C, through which the shaft passes, and with radial arms D, which support an inwardly-projecting flange, E. The entire end piece, B—that is to say, the hub, flange, and radial arms—are preferably all cast in a single piece.

F represents my improved backing, which I make of perforated sheet metal preferably brass. I take a single sheet of metal having perforations *f*, as shown, and which has been cut to the proper size, and braze it to flange E upon the end pieces. This sheet may be made of ordinary sheet metal, but should be of sufficient thickness, so that it will not become indented or pressed out of shape in long continued use.

G represents one or more cylindrical supports, which may or may not be used as additional supports to the backing. These supports are substantially identical in construction with the end pieces, but may be made considerably lighter. The necessity for their use depends upon the length of the roll. In short rolls and those of medium length I ordinarily use no supports for the backing, except the end pieces, B B. In assembling, the ends of the perforated backing-strip F are lapped, then brazed together, after which the

joint is finished down smooth, so that the surface of the roll is a perfect cylinder and is free from irregularities and roughness. As stated above, the perforated backing is brazed to the end pieces. This completes the construction of the roll proper. H is the ordinary covering for the roll, which is made of wire-cloth. The fineness or quality of this covering has nothing to do with my present invention. In my improved roll, as in all others of this class, it is contemplated that the covering may be changed at any time, the fineness of the covering depending on the quality of paper which it is desired to produce.

15 The operation of my improved roll is thought to require no explanation, as the manner of its use does not differ in any respect from the ordinary dandy-rolls known in the art of paper-making, its function being to press upon and compact the web of pulp and to press out the surplus water. It will of course be understood that the size, shape, or material used in the construction of the roll are not of the essence of my invention, the gist of which con-

sists in the use of a perforated sheet of metal as a backing for the roll.

Having thus described my invention, I claim—

1. In a dandy-roll for paper-making machines, a backing consisting of a perforated sheet of metal brazed or otherwise secured to the end pieces of the roll.

2. The combination, with the end pieces and cover of a dandy-roll, of a backing for the cover, consisting of a perforated sheet of metal secured to the end pieces.

3. The shaft, end pieces having hubs, radial arms, and flanges, as shown, and supports G, in combination with a backing consisting of a perforated sheet of metal secured to the end pieces, and a covering of wire-cloth placed over the backing.

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

DAVID LOCKWOOD.

Witnesses:

A. M. WOOSTER,

A. B. FAIRCHILD.