

W. McLAUGHLIN.

Suction Apparatus for Paper Machines.

No. 138,173.

Patented April 22, 1873.

Fig. 1.

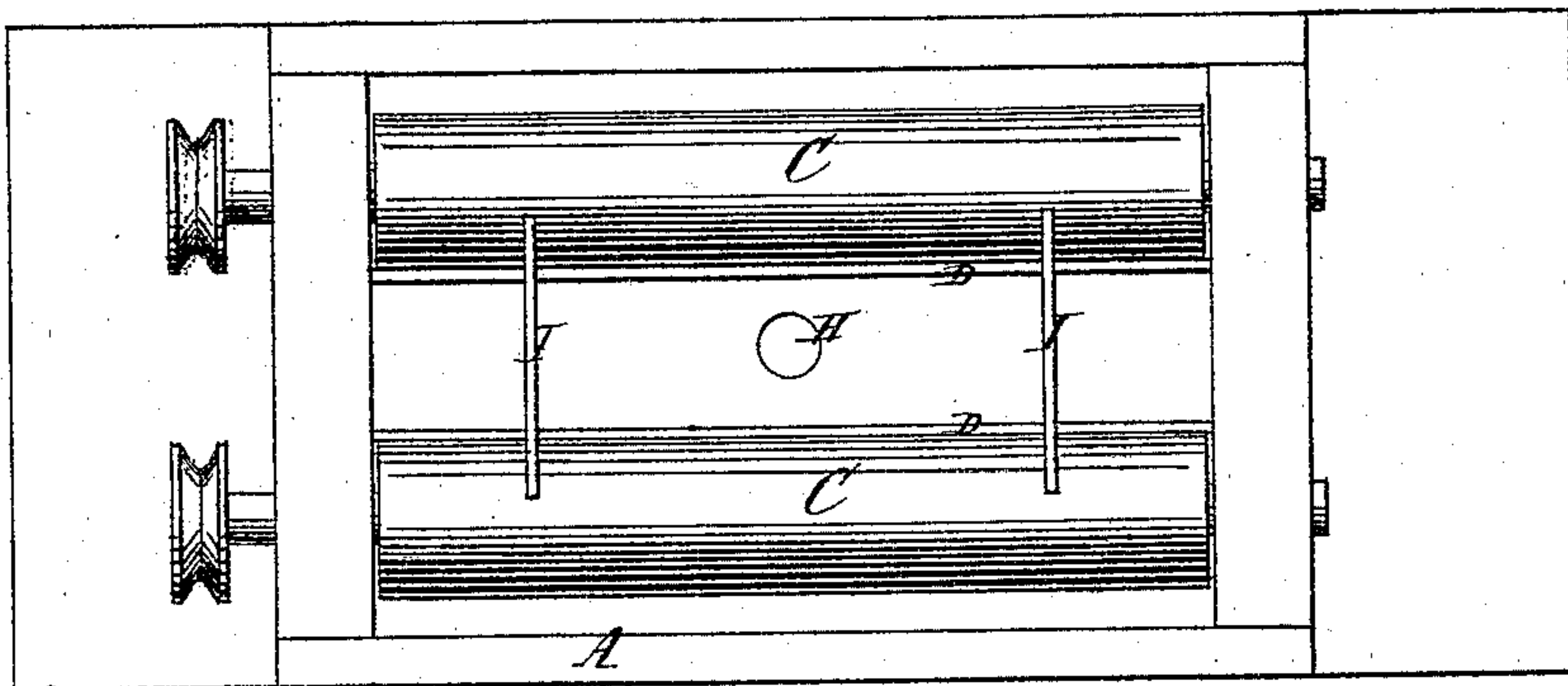
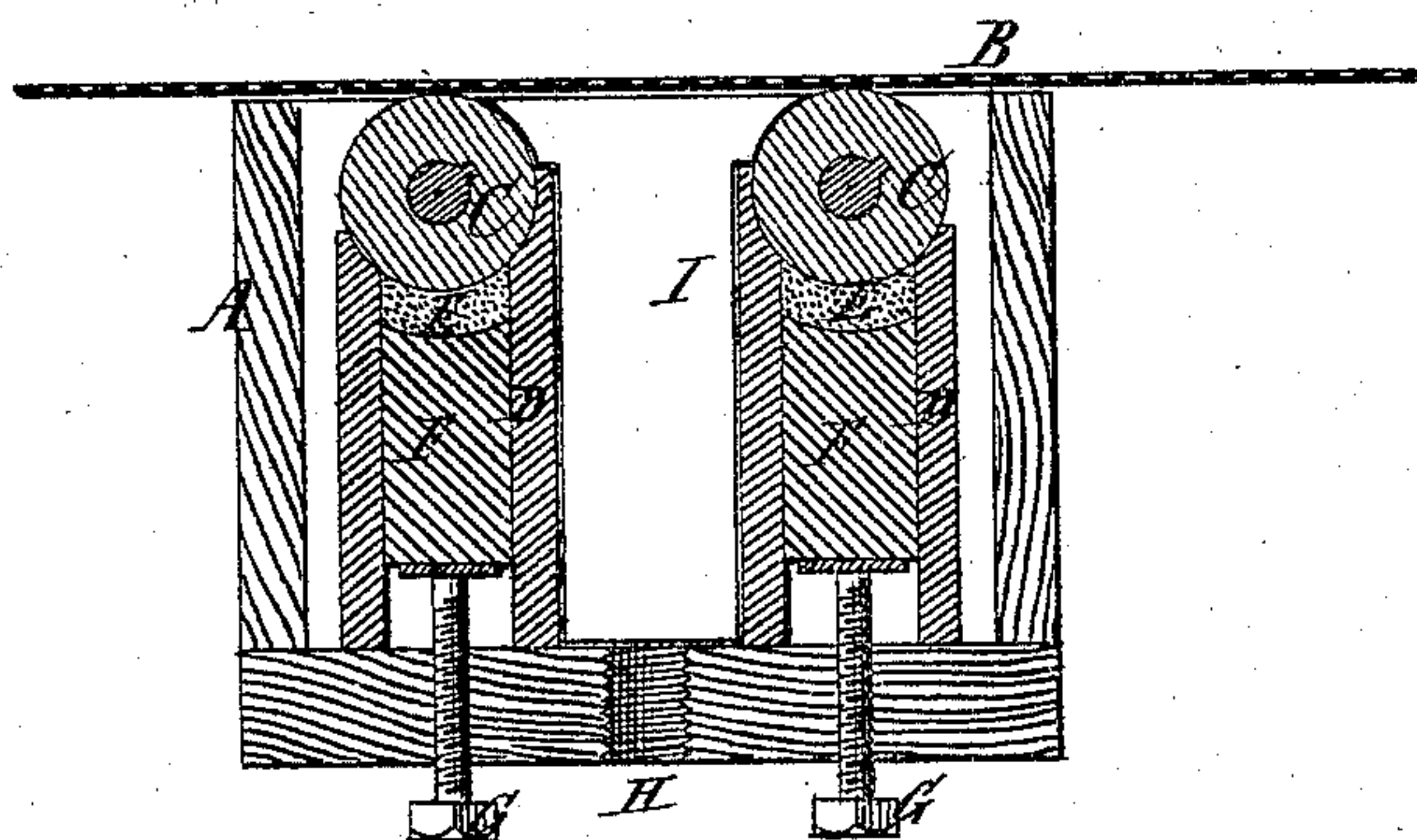


Fig. 2.



Witnesses.
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WILLIAM McLAUGHLIN, OF LEE, MASSACHUSETTS.

IMPROVEMENT IN SUCTION APPARATUS FOR PAPER-MACHINES.

Specification forming part of Letters Patent No. **138,173**, dated April 22, 1873; application filed February 12, 1873.

To all whom it may concern:

Be it known that I, WILLIAM McLAUGHLIN, of Lee, in the county of Berkshire and State of Massachusetts, have invented a new and Improved Suction Apparatus for Paper-Making Machines; and I do hereby declare the following to be a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing forming part of this specification, in which drawing—

Figure 1 represents a plan or top view of my invention. Fig. 2 is a transverse vertical section of the same.

Similar letters indicate corresponding parts.

This invention consists in the arrangement of rollers in the suction-box of a paper-making machine, said rollers being made to revolve with the web carrying the sheet of paper, while the suction is taken between the rollers in such a manner that the web on moving over the suction-box is supported by said rollers, and as the rollers revolve with a superficial velocity equal to the speed of the web, the motion of the web, as the same is depressed by the suction, is not materially impeded, and the parts which support the web during its passage over the suction-box are not liable to wear out. Each of the web-supporting rollers moves in a box provided with packing, which can be pressed up against the circumference of its roller in such a manner that no air is allowed to pass into the suction-box on the sides of the rollers, and consequently the effect of the suction is not disturbed.

In the drawing, the letter A designates the suction-box of a paper-making machine, said suction-box being secured to the frame of the paper-making machine in the usual position, so that the web B, Fig. 2, passes over the same, and that the sheet of paper resting on said web is exposed to the suction during its passage over the suction-box. In the suction-box I place two rollers, C C, which revolve with a superficial velocity equal to the speed of the web, and in the same direction in which the web moves, and which are so situated that

they form the support for the web during its passage over the box. Each of the rollers C C moves in a box or channel, D, which is provided with suitable packing, E, and with a follower, F, acted on by set-screws G, so that by means of these set-screws and of the follower the packing can be pressed up against the surface of its roller with more or less power, and by these means the escape of air on the sides of the roller is prevented, and the effect of the suction is not disturbed. The suction takes place through an aperture, H, in the bottom of the suction-box between the two rollers C C, and the suction-box is adjusted to the width of the sheet of paper resting on the web by movable partitions I, such as are generally used in suction-boxes of paper-making machines, with that exception, however, that my movable partitions are adapted to the form of the rollers C C.

In suction-boxes of the usual construction a perforated plate of sheet metal is secured on the top of the suction-box to support the web during its passage over the same, and as the suction draws the web down said web is depressed with great force on the perforated top plate of the suction-box, and thereby the motion of the web is impeded, and the perforated top plate is caused to wear out in a short time, while the web itself also wears.

By my moving supporting-rollers the motion of the web is not impeded; and, furthermore, the rollers are not liable to wear, so that a considerable saving is effected by my invention.

If desired, three or more supporting-rollers might be used instead of two, as above described.

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

The combination of the suction-box A, packing-boxes and rollers C, packing E, followers F, and web B, substantially as and for the purpose described.

WILLIAM McLAUGHLIN.

Witnesses:

PHIDIME MORIN,
JOHN BRANNING.