C. YOUNG.

Suction-Box for Paper-Making Machines.

No. 200,369. Patented Feb. 12, 1878.

Fig: 1.

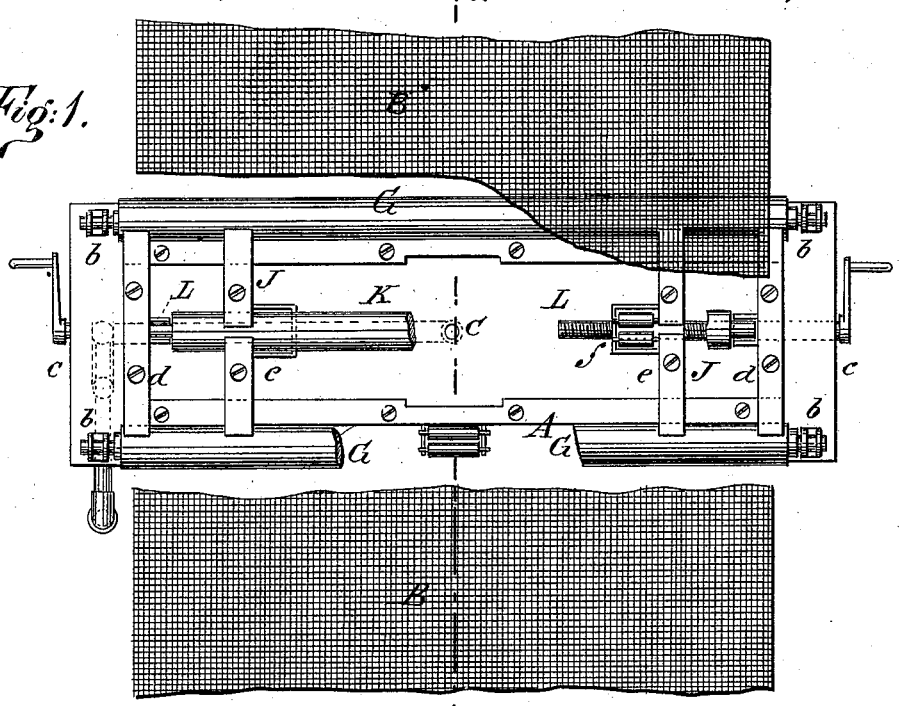
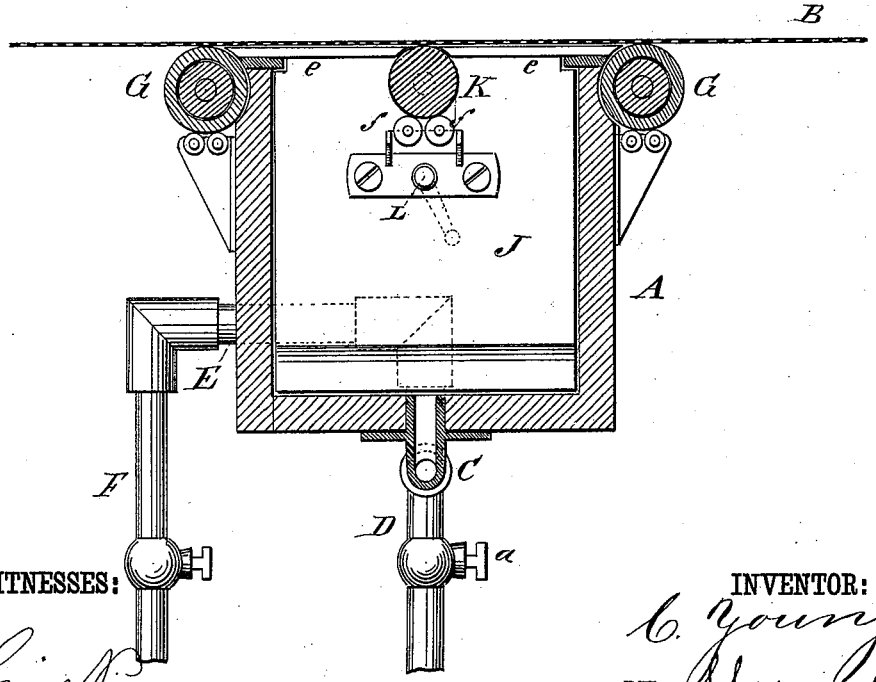


Fig: 2.



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IMPROVEMENT IN SUCTION-BOXES FOR PAPER-MAKING MACHINES.

Specification forming part of Letters Patent No. **200,369,** dated February 12, 1878; application filed September 22, 1877.

To all whom it may concern:

Be it known that I, CORNELIUS YOUNG, of Sandy Hill, in the county of Washington and State of New York, have invented a new and Improved Suction-Box for Paper-Making Machines, of which the following is a specification:

This invention relates to vacuum or suction boxes for paper-making machines.

The nature of my invention consists in a box which is designed to be arranged in close contact with the wire screen, and between the "deckle" and the "dandy-roll," and which is provided, one on each side of the dandy-roll, with elastic rollers and an intermediate rigid roller, in combination with adjustable partitions, as will be hereinafter explained.

The invention further consists in a novel mode of exhausting air from the vacuum-box, whereby pumps hitherto used for this purpose are dispensed with, as will be understood from the following description.

In the annexed drawings, Figure 1 is a top view of the improved vacuum-box exposed by breaking away a part of the wire-cloth which is above it. Fig. 2 is a section taken vertically and transversely through the vacuum-box in the plane indicated by dotted line *x x*, Fig. 1.

Similar letters of reference indicate corresponding parts.

The letter A designates an oblong rectangular box, which is equal in length to the width of the wire-cloth B, beneath which it is arranged. Mid-length of this box, and communicating with its interior, is a pipe, C, which extends out horizontally, and is coupled to a vertical discharge-pipe, D, which is provided with a cock, *a*. This discharge-pipe extends above the plane of the pipe C, and, by means of L-shaped couplings and a short branch pipe, E, is connected to a vertical feed-pipe, F. Water forced rapidly through the pipes F, E, and D will tend to produce a vacuum in the chest or box A, and the pressure of the atmosphere above the wet pulp on the wire-cloth B, as it passes over said box, will exhaust much of the water from said pulp. The water thus drawn from the pulp will be conducted through the pipe C into the discharge-pipe D.

G G are two rollers, which are arranged at the sides of the box A, and which have their end bearings in eyebolts *b b*, that are passed loosely through shelves *c c*, fixed to the ends of the box A. These rollers are vertically adjustable by means of nuts applied on the screw-bolts *b b*.

The rollers G G are preferably made of india-rubber, or other yielding or elastic material, and they bear against the ends of metallic strips *d d*, fixed rigidly to the ends of the box A. These flexible or elastic rollers also bear against the beveled ends of metal strips *e e*, which are rigidly secured to two partitions, J J, that are fitted snugly inside of the box A transversely with respect to its length.

Through the upper portions of these partitions passes freely a rigid roller, K, which has its end bearings in brackets fixed to the inner sides of the ends or heads of box A. This intermediate roller is in the same plane as the yielding rollers G G, and supports the wire-cloth between these rollers. Roller K turns on anti-friction rollers *f*, shown in both figures of the drawing.

L L are two screws which pass through the ends of the box A, and have cranks on their ends. These screws are tapped through nuts fixed to the partitions J J, so that by turning the cranks the partitions can be adjusted and set any desired distance apart, according to the width of the paper it is desired to make.

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

1. In the combination with a vacuum-box, A, and rollers G G K, the pipes F, E, and D, arranged to operate substantially as herein described.

2. Elastic rollers G G, adjustable as described, and rigid roller K, in combination with a vacuum-box of a paper-making machine, as set forth.

CORNELIUS YOUNG.

Witnesses:
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