C. YOUNG.

Roll Suction-Box for Paper-Making Machine.

No. 209,003. Patented Oct. 15, 1878.

Fig. 1.

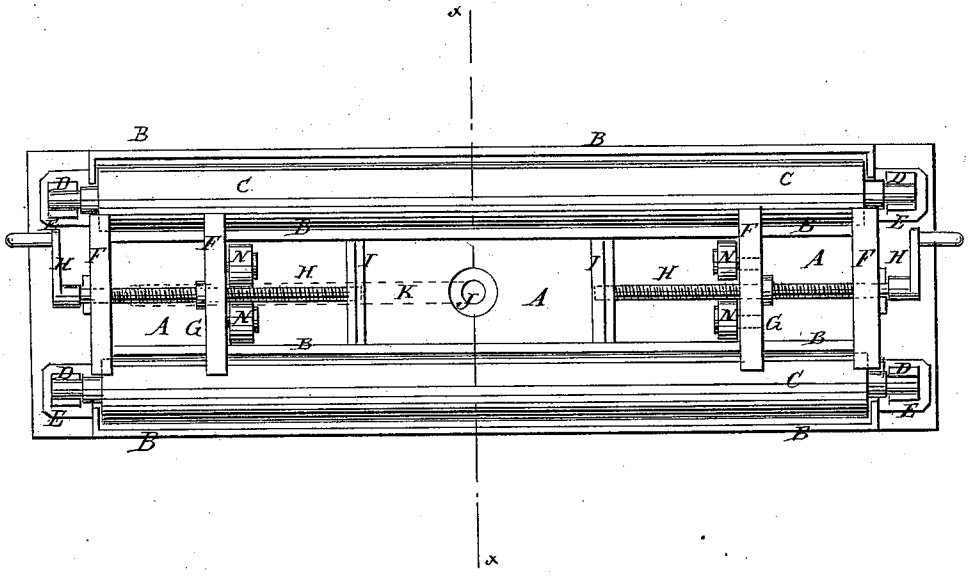
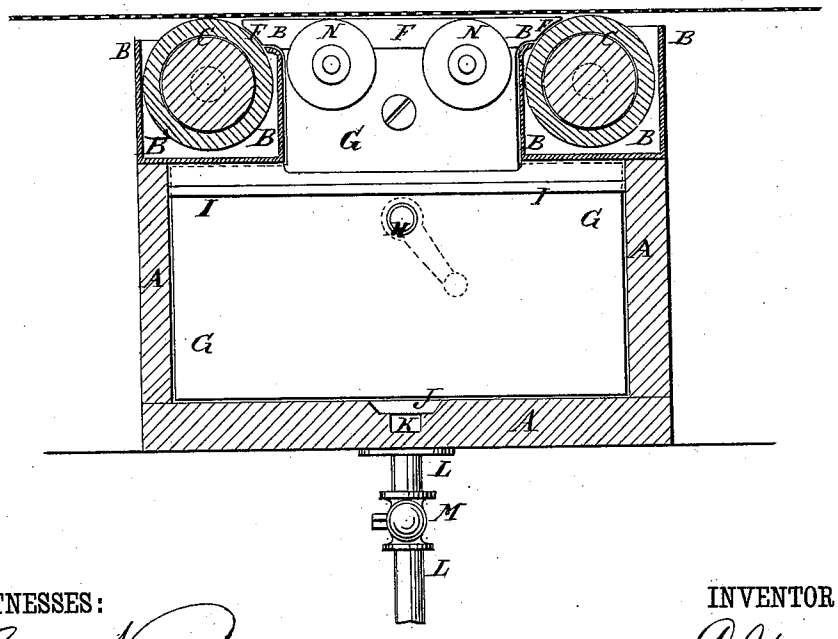



Fig. 2.




WITNESSES:

Chas. Nida

C. Sedgwick

INVENTOR:

C. Young

BY Munn & Co

ATTORNEYS.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

CORNELIUS YOUNG, OF SANDY HILL, NEW YORK.

## IMPROVEMENT IN ROLL SUCTION-BOXES FOR PAPER-MAKING MACHINES.

Specification forming part of Letters Patent No. **209,003**, dated October 15, 1878; application filed July 10, 1878.

*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 useful Improvement in Roll Suction-Boxes for Paper-Making Machines, of which the following is a specification:

Figure 1 is a top view of one of my improved suction-boxes. Fig. 2 is a vertical cross-section of the same, enlarged.

Similar letters of reference indicate corresponding parts.

The object of this invention is to improve the construction of the suction-box for which Letters Patent No. 200,369 were issued to me February 12, 1878, so as to make it simpler in construction, while being equally as effective in operation.

The invention consists in the combination of the troughs with the rubber rollers and the sides of the suction-box to form water-seals for the said rollers, and in the combination of the hard-rubber pulleys or wheels with the adjustable partitions of the suction-box and with the cross-strips and the rubber rollers to assist in carrying the wire-cloth, as hereinafter fully described.

A represents a rectangular box, the length of which should equal the width of the wire-cloth beneath which it is designed to be placed.

In recesses in the upper edges of the sides of the box A are secured small troughs B, in which are placed two rubber rollers, C, the journals of which revolve in bearings in eyebolts D, which pass through brackets or shelves E, attached to the ends of the box A, where they are secured in place adjustably by nuts, so that the rollers C can be readily raised and lowered, as may be required.

The upper edges of the inner sides of the troughs B are bent at an angle, so as to bear against the sides of the rubber rollers C, to make a close joint and prevent air from passing into the vacuum-box A around the said rollers. The entrance of air around the rollers C is further guarded against by putting water into the troughs B, and thus forming water-seals for the said rollers.

The rollers C bear against the beveled ends of the strips F, attached to the upper edges of the ends of the box A and of the partitions G, which partitions are fitted into the box A as near water-tight as may be, so that the spaces between the said partitions G and the said ends of the box A may be kept filled with water to further guard against the entrance of air.

H are crank-screws, which pass in through and are swiveled to the ends of the box A and pass through nuts secured in holes in the partitions G, so that the said partitions may be readily moved closer together or farther apart, to adjust them to the width of the sheet to be made.

The sides of the box A are strengthened against inward pressure by stays or braces I, which cross the said box, and the ends of which rest against and are attached to its sides.

In the center of the bottom of the box A is formed a hole, J, which leads into a passage, K, formed longitudinally within the said bottom, and the outer part of which, near one end of the box A, is connected with the downwardly-projecting pipe L. The pipe L is provided with a stop-cock, M, to enable the suction to be controlled and stopped when required.

With this construction, when the stop-cock M is open, the outflow of water through the pipe L will tend to form a vacuum in the box A, and the pressure of the air will force the water through the wire-cloth from the pulp upon the said wire-cloth into the box A, so that the siphon action of the pipe L will be continuous.

The wire-cloth that carries the pulp is designed to rest upon the rubber rollers C, upon the cross-strips F, and upon the hard-rubber pulleys or wheels N, pivoted to the upper part of the sides of the partitions G.

Instead of relying upon siphon action, a pump may be connected with the lower end of the pipe L to produce the suction.

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

1. The combination of the troughs B with

the rubber rollers C and the sides of the suction-box A, to form water-seals for the said rollers C, substantially as herein shown and described.

2. The combination of the hard-rubber pulleys or wheels N with the adjustable partitions G of the suction-box A, and with the strips F and rubber rollers C, to assist in carrying the wire-cloth, substantially as herein shown and described.

CORNELIUS YOUNG.

Witnesses:
A. B. DAVIS,
A. W. BOSTWICK.