

# UNITED STATES PATENT OFFICE.

FRANCIS CURTIS, OF FOXBOROUGH, MASSACHUSETTS.

IMPROVEMENT IN SUCTION-BOXES OF MACHINES FOR THE MANUFACTURE OF PAPER.

Specification forming part of Letters Patent No. 128,469, dated July 2, 1872.

Specification describing an Improvement in Suction-Boxes of Paper-Fabricating Machinery, invented by FRANCIS CURTIS, of Foxborough, Norfolk county, Commonwealth of Massachusetts.

My present invention consists in constructing the top of suction-boxes (which are usually foraminous) of glass or other transparent material, in lieu of hard rubber or metal, or the use of rollers, as heretofore practiced. The object of this improvement is, first, to obtain a top for a suction-box, which shall possess and retain for years a highly-polished surface, in order that the endless wire apron may travel over it with little friction and with little or no perceptible wear upon it, the first cost of such top being no more than those now in use, and being infinitely more durable. Secondly, the purpose of this invention is to enable the machine "tender" or minder to inspect at any time, and without trouble, to the interior of the suction-box, so that he can arrange the adjustable or movable "heads" and place them in the right position before starting the paper-machine or passing the paper pulp over the "suction-box." Much time is now lost, and a great deal of broken or waste paper made in getting the movable heads inside the box in the right position, and this is important, as they must be brought directly under the edge of the sheet or film of pulp passing over the box on the endless wire apron, or otherwise the air is admitted to the interior of the box and the vacuum destroyed, and the box rendered useless. In the method heretofore practiced, the "heads" cannot be adjusted until the paper-machine has been started, and the paper pulp is passed over the box. This oftentimes requires thirty or forty minutes, and much valuable time is lost, and that at a time when the "machine-tender" has a great many other things to attend to. With my improve-

ments the inside of the box can be seen at all times, the "heads" placed in the exact position, the box filled in the water, and everything made ready before drawing the paper pulp onto the wire—the paper can be carried through the machine at once, without loss of time or making of "broken paper." My improvement will also enable the operator to see the inside of his box at all times, so that if the box should cease to do its work, as from various causes they oftentimes do, and spoil more or less paper, he can see what the difficulty is, and easily remedy it without stopping the machine.

As the boxes are constructed at the present time, if any disarrangement occurs to the inside of the box, and this is frequent, the machine must be stopped, the box removed entirely, (requiring the services of two men, or more,) and the top taken off, before the difficulty can be ascertained; whereas, if the operator could see the inside of his box, the trouble could very likely be remedied in a few minutes without stopping the paper-machine. The length of time required to perform the above service would be from four to six hours, and is a serious detriment.

## *Claim.*

What I claim, and for which I desire to secure Letters Patent, is—

An improvement in the manufacture of suction-boxes, used in the manufacture of paper, by making the perforated or foraminous top wholly or in part of glass or other transparent material, substantially and for purposes stated.

FRANCIS CURTIS.

Witnesses:

FRED. CURTIS,  
W. E. BOARDMAN.