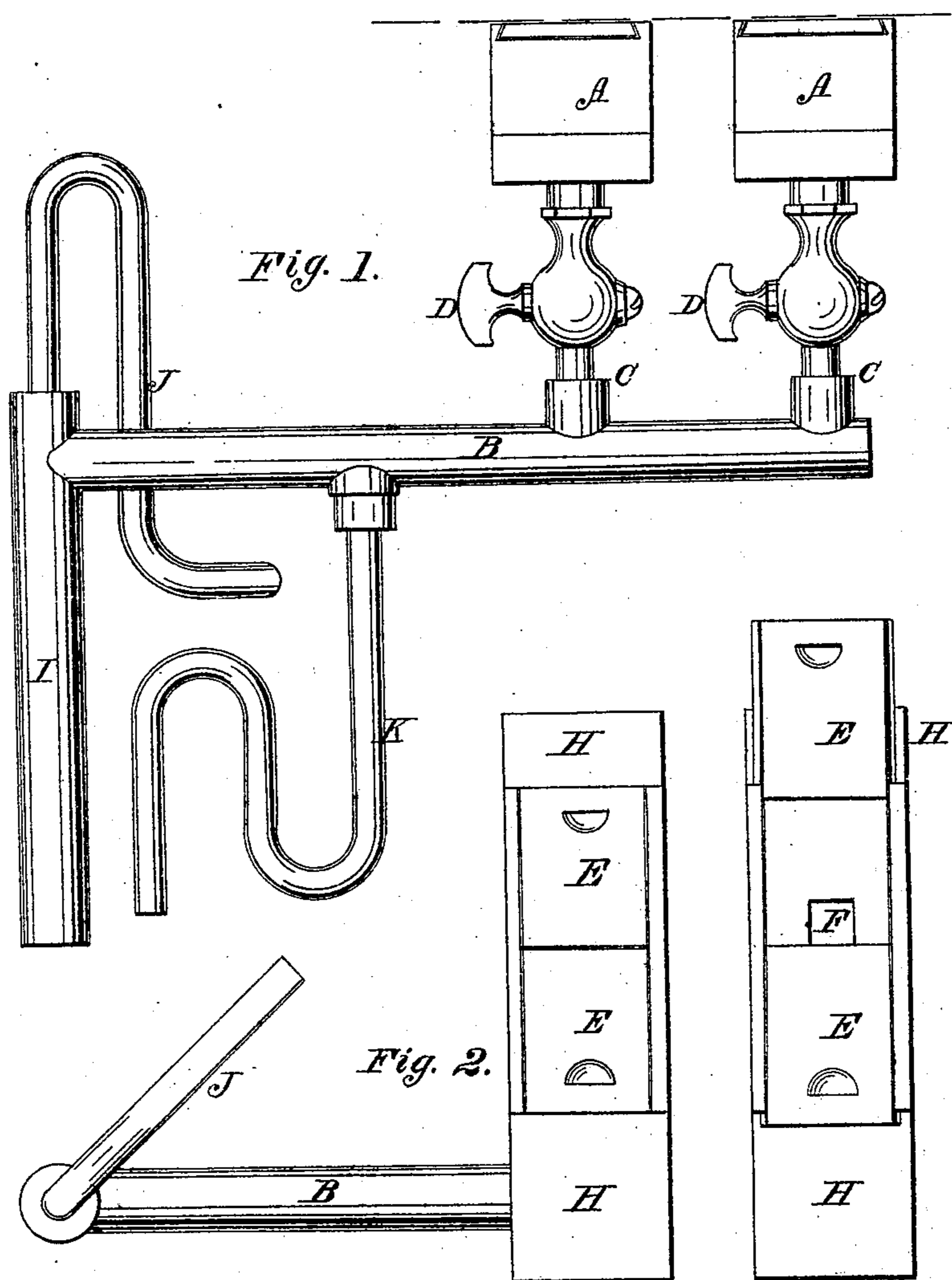


*J Viney.
Paper Mach.*

N^o 84,235. Patented Nov. 17, 1868



*Witnesses,
H. C. Ashkett
Wm A. Morgan*

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United States Patent Office.

JAMES VINEY, OF MANCHESTER, NEW HAMPSHIRE.

Letters Patent No. 84,235, dated November 17, 1868.

IMPROVEMENT IN PAPER-MAKING MACHINES.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, JAMES VINEY, of Manchester, in the county of Hillsborough, and State of New Hampshire, have invented a new and useful Improvement in Paper-Making Machines; and I do hereby declare that the following is 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 drawings, forming part of this specification.

This invention relates to an attachment to machines for manufacturing paper, whereby the process is greatly facilitated, and much valuable time is saved; and

The invention consists in forming, by steam, water, or other fluid, a vacuum, or a partial vacuum, in boxes, over which the apron which contains the film of paper-pulp passes, on its way to the pressing-rollers, by which vacuum the water or moisture contained in such paper or pulp is extracted; and also, in the provision made for adjusting the said vacuum-boxes to the width of the paper to be made, as will be hereinafter more fully described.

Figure 1 represents an elevation of my vacuum-apparatus, as it appears when in use.

Figure 2 is a top or plan view of the same.

Similar letters of reference indicate corresponding parts.

A represents the vacuum-boxes, of which there may be any required number.

These boxes are designed to be closed air-tight, with the exception of apertures in their bottoms, by which they are connected with the interior of the tube B by the vertical tubes C C.

These vertical tubes have stop-cocks D D, by which communication between the boxes and tube B may be closed.

On the top of these boxes there are sliding covers E, one of which slides from each end of each box, as seen in the drawing.

As is seen in the drawing, one of the boxes is closed by the slides E, and one is partially open, to show the aperture F in the bottom, which communicates with the tube B.

G represents the bottoms of the boxes, which extend at each end, as seen at H.

The wire-cloth belt or apron, which takes up the

liquid pulp from the pulp or stock-reservoir, is seen in red line over the boxes A, as when passing to the pressing-rollers of the machine.

As the pulp is taken from the reservoir, it is, of course, in a wet state, and the object of my improvement is to extract this water or moisture from the film of pulp on the wire-cloth apron.

In order that the opening in the top of the vacuum-box may correspond to the width of the paper, the slides E are adjusted to just suit that width.

The vacuum or partial vacuum is formed in the boxes A by admitting a current or jet of steam through the tube I by the steam-pipe J.

The current of steam, passing with great velocity through the vertical tube I, withdraws the air from the tube B and the boxes A, and creates a vacuum, more or less perfect, therein.

In other words, the rapid current through the tube I removes the atmospheric pressure, more or less, from the under side of the moving pulp-apron, thus forming the vacuum, and the water or moisture contained in the pulp flows into it, as a natural result.

The pipe K is a water-trap, for receiving and discharging the water so extracted.

Water, gas, or other fluid or liquid may be used, instead of steam, to produce this result.

I do not, therefore, confine myself to steam or any other particular substance, nor to the particular arrangement shown, of pipes, tubes, or boxes, for producing the result.

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

1. Extracting the water or moisture, to a greater or lesser extent, from the pulp on the wire-cloth or felt apron, on its way to the pressing-rollers, by the removal of atmospheric pressure, as described, or in any equivalent manner.

2. The adjustable slides E on the boxes A, by which the aperture in the top of the box is made to correspond with the width of the paper, substantially as described.

JAS. VINEY.

Witnesses:

J. T. MOORE,

CHARLES BURNHAM.