

A. W. KEENY.  
PAPER-DRYING MACHINE.

No. 174,369.

Patented March 7, 1876.

Fig. 1.

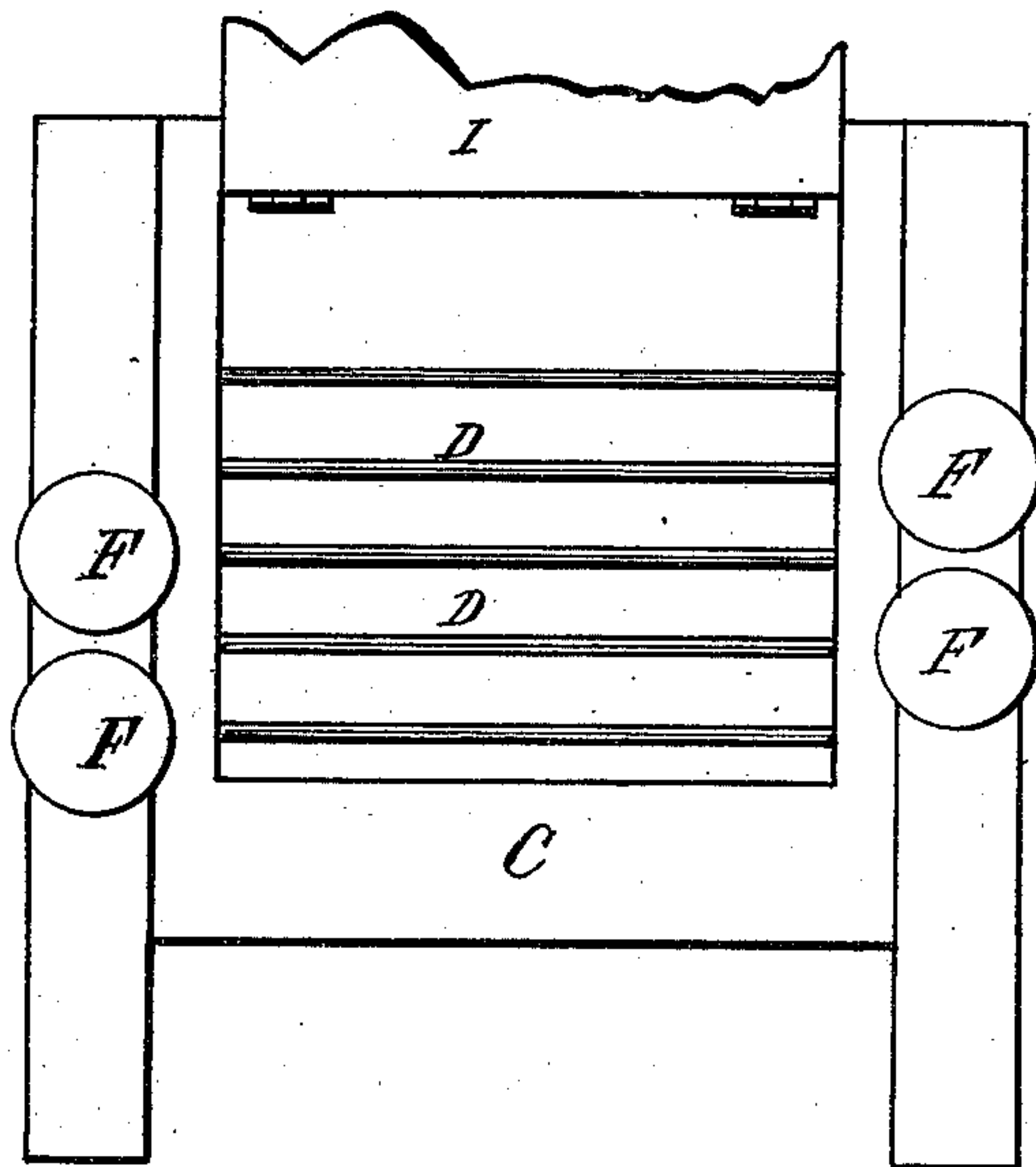
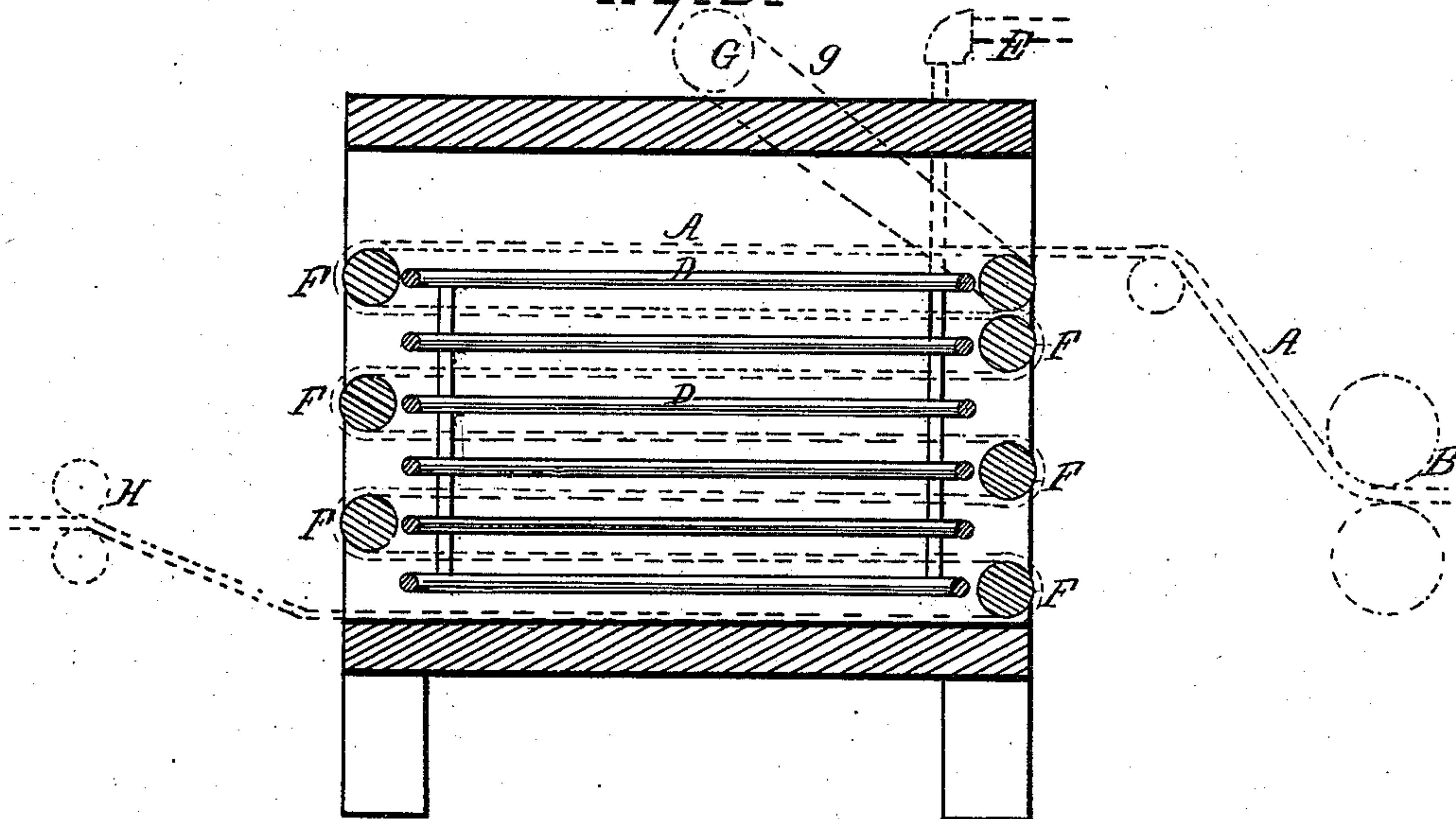


Fig. 2.



WITNESSES  
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# UNITED STATES PATENT OFFICE.

ALBERT W. KEENY, OF ROCKFORD, ILLINOIS.

## IMPROVEMENT IN PAPER-DRYING MACHINES.

Specification forming part of Letters Patent No. **174,369**, dated March 7, 1876; application filed November 4, 1875.

*To all whom it may concern :*

Be it known that I, ALBERT W. KEENY, of Rockford, in the county of Winnebago and State of Illinois, have invented certain new and useful Improvements in Paper-Drying Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

My invention relates to paper-drying machines, and consists of an arrangement or series of hot-air or steam pipes within an inclosed case, the web of paper passing backward and forward between the layers of pipes, over rollers at each end of the machine, all as and for the purposes hereinafter more fully at large will appear.

In the drawings, Figure 1 is a side elevation of the machine, the side door being open; Fig. 2, a vertical longitudinal section of same.

A represents the web of paper passing from the common steam-drier B to the pipe-drier C. This pipe-drier consists of a series or layers of pipes, D, placed one above the other in the case C. E is the hot-air or steam entrance pipe, which communicates with all the layers of pipes D, and supplies heat thereto. At each end of the case C are mounted a number of rollers, F, connected and driven by band or gear, so as to give rotary motion thereto. G is the pulley, and g the belt for driving the paper-rolls F. A door, I, may be provided in the side of the drier C for any purpose.

The operation of the device is as follows: The position of the ordinary steam-driers, the roll-driving pulley, and paper-receiving rolls is shown in dotted lines, so that the complete operation of the parts will be readily understood. The web of paper A passes from the common steam-drier B to the top portion of the drier C, over the rollers F, through the

machine, down to the next layer of pipe D, then back again, and so on, back and forth between the layers of pipes D, to the bottom, where it is taken from the drier and passes between the pair of rolls H. The paper is propelled along by the movement of the pulley G, communicating motion to the rolls F. Thus it will be seen the paper is quickly and effectually dried, and by this process the paper is made much tougher than it is when dried by the ordinary hot cylinders.

The drier may be used in connection with the common cylinder drier, but can be worked independently, if desired, by passing the web of paper direct from the press-rolls to the pipe-drier. The layers of pipe may be made longer or shorter, more in number or less, according to the drying capacity needed.

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

1. In a paper-drier, in combination with the stationary series of pipes or heater D and inclosing-case C, constructed and arranged as described, the rollers F, placed at each end of the case, opposite each shelf, and in position to receive and hold the web of paper in central position between the pipe-shelves, and from contact therewith, as and for the purpose described.

2. The paper-drier composed of a system of continuous pipes, D E, all united together and in a stationary structure, inclosing-case C, door I, opening into all the series of pipes, and rollers F G, all constructed, arranged, and adapted to operate as and for the purpose described.

In testimony that I claim the foregoing I have hereunto set my hand this 22d day of October, 1875.

ALBERT W. KEENY.

Witnesses:

H. W. TAYLOR,

E. C. SOUTHWORTH.