

(No Model.)

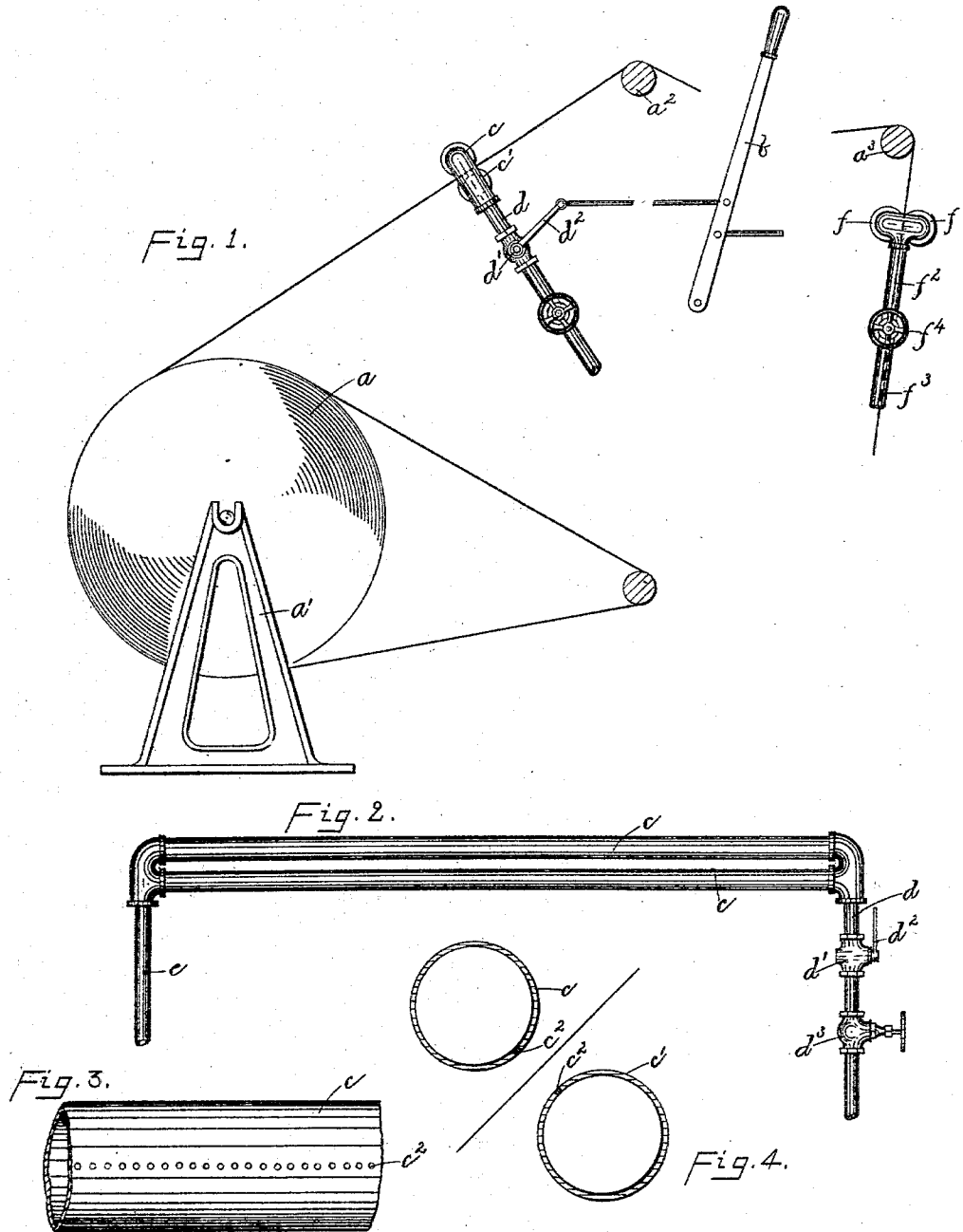
2 Sheets—Sheet 1.

E. P. ALLBE.

PAPER DAMPENING DEVICE FOR PRINTING PRESSES.

No. 514,637.

Patented Feb. 13, 1894.



Witnesses

Jacques R. Brundall  
Lucy F. Graves.

Inventor

Edward P. Allbe,  
by B. J. Hayes  
att'y

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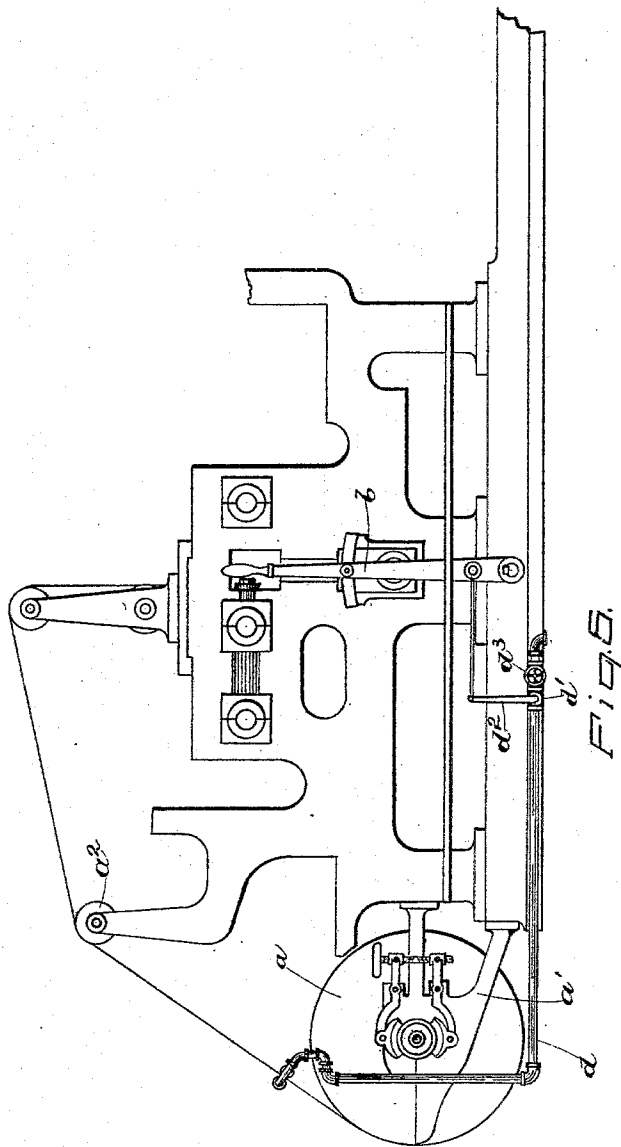
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WITNESSES.  
C. B. Crocker.  
Lucy F. Graves.

INVENTOR.  
Edward P. Allbe.  
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# UNITED STATES PATENT OFFICE.

EDWARD P. ALLBE, OF BOSTON, MASSACHUSETTS.

## PAPER-DAMPENING DEVICE FOR PRINTING-PRESSES.

SPECIFICATION forming part of Letters Patent No. 514,637, dated February 13, 1894.

Application filed June 6, 1892. Serial No. 435,607. (No model.)

*To all whom it may concern:*

Be it known that I, EDWARD P. ALLBE, of Boston, county of Suffolk, State of Massachusetts, have invented an Improvement in Paper-Dampening Devices for Printing-Presses, of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

In web printing presses as now commonly constructed, the paper taken from the web roll is fed to the machine and printed.

In practice it has been found that if the paper is dampened just before it is printed the appearance of the printed sheet is greatly improved, because the outlines of the letters are more defined, and that the type although somewhat bruised or injured, will leave a good impression, which it will not do if the paper is dry.

This invention has for its object to construct a device or attachment for web printing presses by means of which the paper may be dampened after it leaves the web roll and before it is printed.

In accordance with this invention two steam pipes or boxes are placed one above, and the other below the paper between the web roll and the press or printing mechanism, said pipes or boxes being of any desirable shape in cross section and somewhat longer than the width of the paper, and arranged transversely to the paper and in parallelism, so that the paper travels between them. These steam pipes or boxes each have a number of small openings on that side adjacent the paper through which jets of steam or vapor laden with moisture may issue, and by coming in contact with the paper dampens it. The steam will be provided from any suitable source. Suitable valves are provided which control the flow of steam, one of which is preferably connected with the starting lever or switch of the printing press, or some other moving part of said press, so that whenever said lever is moved to start the press or the press starts,—the steam will be turned on, and when said lever is moved to stop the press, or the press stops, the steam will be cut off. At the opposite end of the press, two pipes or boxes are placed one at each side of the paper preferably made imperforate, said

pipes or boxes being heated in any suitable way to thereby serve as the heating device to dry the dampened and printed paper as it comes from the press, if said pipes or boxes should be imperforate they may be heated by steam, or if said pipes or boxes should be provided with perforations upon that side adjacent the paper, hot air may be employed, the jets of which may be directed upon or against the paper.

Figure 1, shows in side view a roll of paper, and controlling lever for a printing press, and dampening and drying devices for the paper as it enters and leaves the press; Fig. 2, a front elevation of the dampening device embodying this invention; Fig. 3, an enlarged detail of a portion of one of the steam pipes or boxes turned into position to show the openings through which the jets of steam issue; Fig. 4, a cross sectional detail on an enlarged scale of the pipes, showing their relative positions to the paper which passes between them; Fig. 5, a side elevation of a portion of the frame-work of a printing press of the Hoe type, showing the connection between the controlling switch or lever, and the valve controlling the supply of steam.

The roll or web of paper  $a$ , mounted on a stand  $a'$ , the roll  $a^2$ , over which said paper travels as it enters the printing press; the roll  $a^3$ , over which said paper travels as it leaves said press, and the lever  $b$ , by means of which the said press is started and stopped, are all as usual in web printing presses. In front of the roll  $a^2$ , or between the web roll  $a$ , and the press, two steam pipes or boxes  $c, c'$ , are placed one above and the other below the paper, transversely thereto, the space between the said pipes or boxes being sufficient for the free passage of the paper. These pipes or boxes which may be of any desired shape in cross section and somewhat longer than the width of the paper, are each provided upon that side adjacent the paper with a series of openings  $c^2$ , see Figs. 3 and 4, through which jets of steam issue, being directed upon or against the paper. The pipes  $c, c'$ , are connected at the ends by suitable unions with an inlet pipe  $d$ , which is connected with any suitable source of supply, and an outlet pipe  $e$ , is necessarily provided. A cut off valve  $d'$ , is placed in the inlet pipe  $d$ , next the union,

the operating lever  $d^2$ , of which is herein shown as connected by a cord, chain or otherwise, with the controlling lever  $b$ , of the printing press, so that when the press is started  
 5 the said cut off valve will be opened, and when the press is stopped said cut off valve will be closed. It is very important that the steam should be controlled by said controlling lever, or by some moving part of the  
 10 press, for the reason that should the press be stopped, and the steam remain turned on, the paper would become too wet. Another valve, such for instance, as an ordinary globe valve  $d^3$ , is placed in the inlet pipe  $d$ , by means of  
 15 which the supply of steam may be manually controlled.

It will be understood that the paper is fed along between the perforated steam boxes or pipes very rapidly, and as the jets of steam  
 20 come in contact therewith it is dampened upon both sides sufficiently to enable the desired results to be produced.

At the opposite end of the press next the roll  $a^3$ , over which the dampened and printed  
 25 paper travels on leaving the press, two like pipes or boxes  $f, f'$  are placed, one at each side of the paper, they preferably being made imperforate, and connected by unions with the inlet pipe  $f^2$ , and outlet pipe  $f^3$ . A suitable controlling valve  $f^4$ , will also be provided. These pipes or boxes  $f, f'$ , are for the purpose  
 30 of drying the dampened and printed paper as it comes from the press, and hence the said pipes may be heated by steam or otherwise, but if perforated like the pipes  $c, c'$ , they  
 35 may be supplied with hot air, which will issue through the openings  $c^2$ , in small jets, and

coming in contact with the paper will successfully accomplish the results, hence I do not desire to limit my invention to the heating medium employed, nor do I desire to limit my invention to the employment of the heating devices, as in some instances such devices may be unnecessary, but for book printing and other nice work, I prefer to employ them. 45

I claim—

The combination with a press for printing upon a web of paper, of two steam cylinders arranged transversely with relation to the paper between the web roll and press and in parallelism, and located one at each side of said paper in close proximity thereto, each steam cylinder having a series of openings adjacent to the paper for the issuance of small jets of steam which are directed upon  
 55 or against the paper to dampen it, an inlet and an outlet pipe connected to the steam cylinders, and a valve for the inlet pipe to admit or cut off the supply of steam, the operating lever of which is connected with the controlling lever or other moving part of the press, whereby steam is admitted while the press is running and cut off while the press is at rest, and the manually operated valve for the inlet pipe regulating the supply of  
 60 steam, substantially as described. 65

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD P. ALLBE.

Witnesses:

BERNICE J. NOYES,  
 LUCY F. GRAVES.