

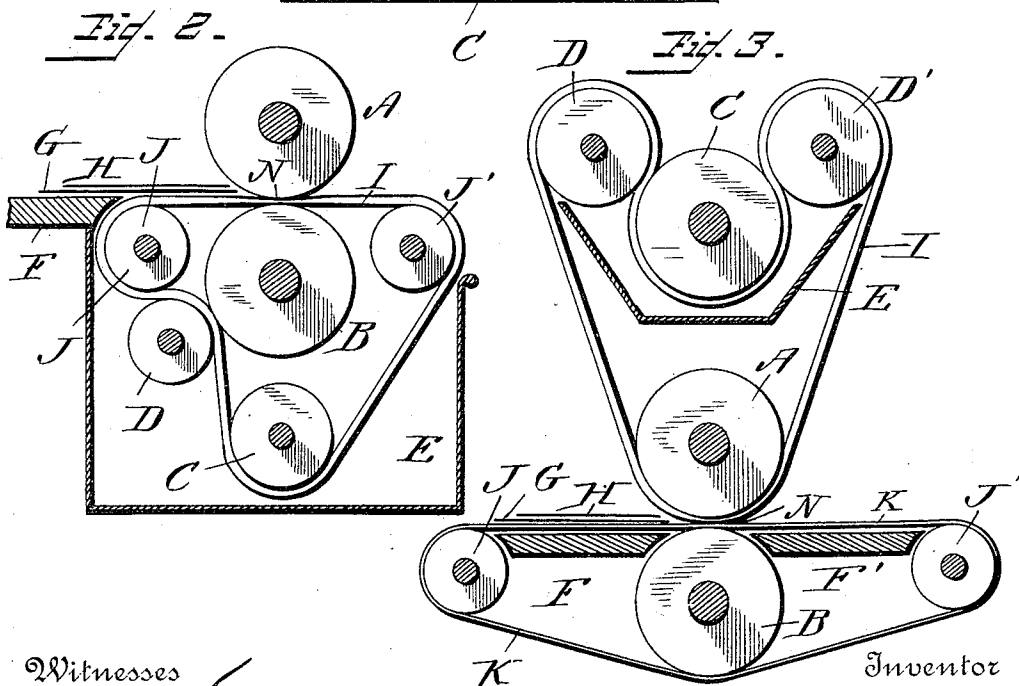
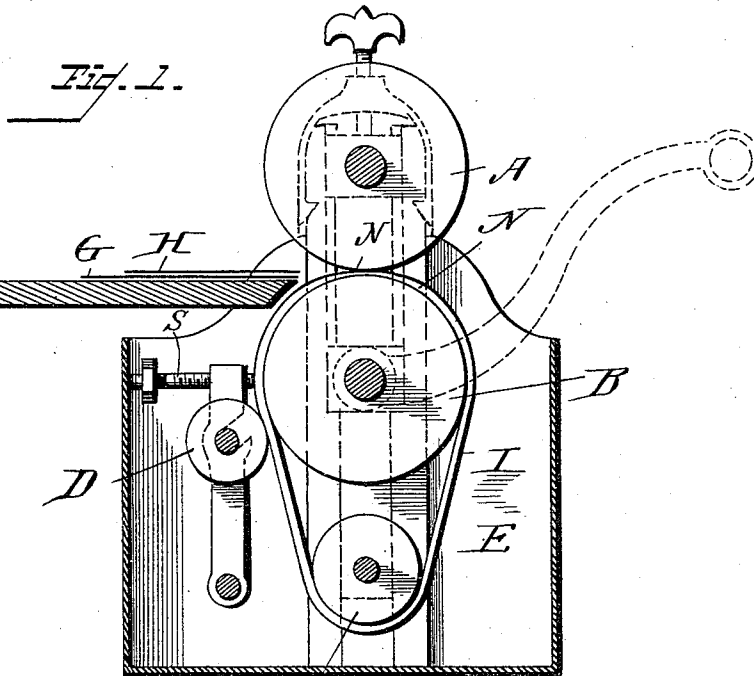
(No Model.)

2 Sheets—Sheet 1.

F. E. DAVENPORT.
COPY PRESS.

No. 470,105.

Patented Mar. 1, 1892.



Witnesses

Wm. H. Hillyard.
Van Burru Hillyard.

Inventor

Franklin E. Davenport.

By his Attorneys

R. S. & A. P. Lacy

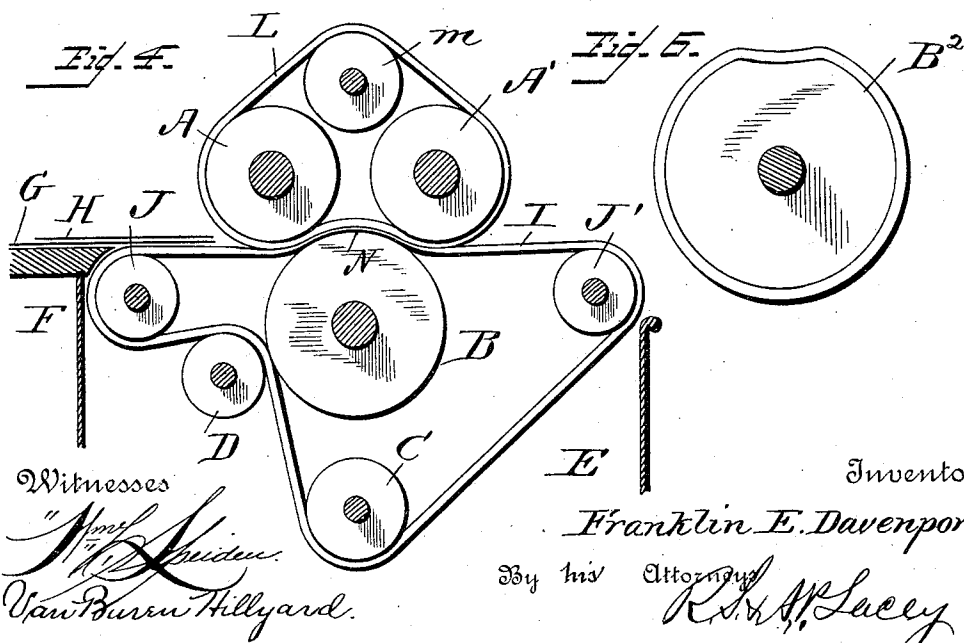
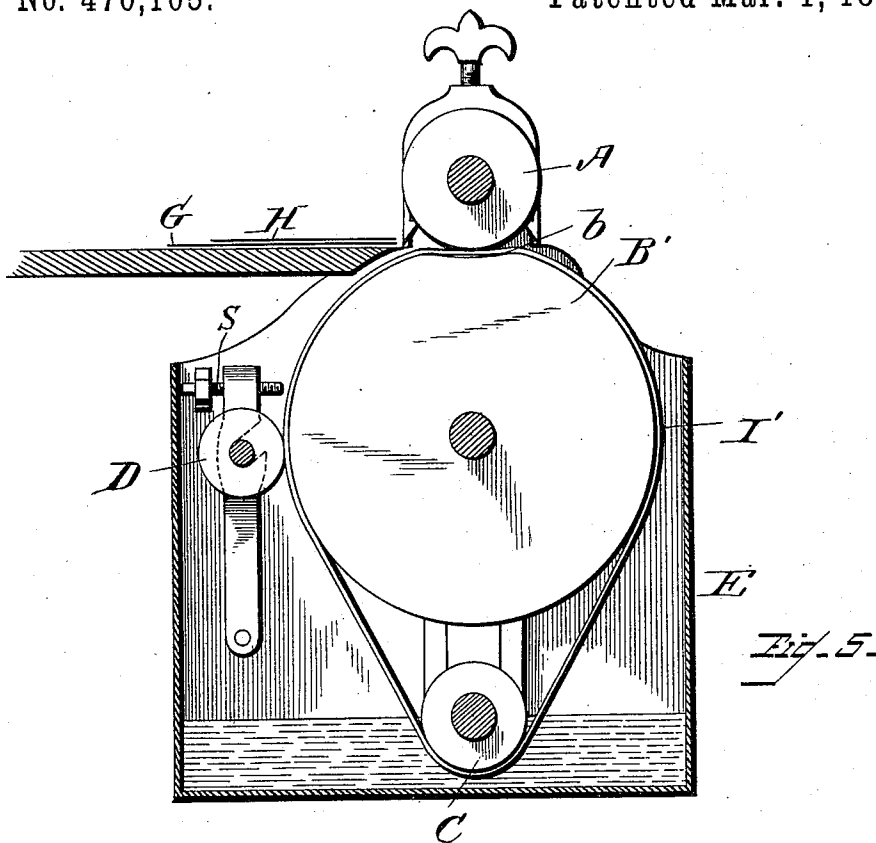
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2 Sheets—Sheet 2.

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UNITED STATES PATENT OFFICE.

FRANKLIN EDWARDS DAVENPORT, OF AUBURN, INDIANA.

COPY-PRESS.

SPECIFICATION forming part of Letters Patent No. 470,105, dated March 1, 1892.

Application filed May 12, 1891. Serial No. 392,441. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN EDWARDS DAVENPORT, a citizen of the United States, residing at Auburn, in the county of De Kalb and State of Indiana, have invented certain new and useful Improvements in Copy-Presses; 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 appertains to make and use the same.

This invention relates to letter-copying presses of that class in which the tissue is moistened by an endless web, which is moistened by passing through a tank of water, and in which the letter to be copied passes between two rollers.

The improvement consists of the novel features and the peculiar construction and combination of the parts, which will be hereinafter more fully described and claimed, and which are shown in the annexed drawings, in which—

Figure 1 is a vertical section of a copying-press embodying my invention. Fig. 2 is a cross-section showing the guide-rollers for the tissue-moistening web on each side of the lower pressure-roller, the upper surfaces of the guide and the pressure-rollers being in substantially the same horizontal plane. Fig. 3 is a view similar to Figs. 1 and 2, showing the water-tank elevated, the moistening-web above the rest, and an endless carrier for positively carrying the book or letter between the pressure-rollers. Fig. 4 is a view similar to Fig. 2, showing two pressure-rollers and a guide-roller and an endless carrier passing over the said pressure and guide rollers. Fig. 5 is a view showing the pressure-roller reduced or flattened on one side to relieve pressure between the pressure-rollers and a thin moistening-web. Fig. 6 is a view showing the pressure-roller covered by an absorbent material and having one side reduced.

Similar letters designate corresponding parts in the several views of the drawings.

A is the pressure-roller; B, lower pressure-roller; C, tank-roller to guide web through the water; D, wringer-roller to press surplus water from the web; E, water-tank; F, table or shelf to place tissue and matter to be copied on; G, tissue; H, letter to be copied; I, end-

less elastic or porous web, preferably of rubber with a cloth surface. The office of this web is to moisten the tissue, so as to dissolve enough of the ink to make a copy while passing between the pressure-rollers. The amount of moisture necessary to best accomplish this end varies with the kind of tissue or ink used, and to regulate this and secure the best results the pressure of the wringer-roller D is varied by adjusting-screws S.

It is a fact acknowledged by those versed in the art that the best copies are obtained by the use of a wet cloth when used with the ordinary letter-press, and the reason it is not more generally used is the inconvenience of getting the cloth properly moistened. With my invention it is only necessary to adjust the wringer-roller, then turn the crank, and the machine does the rest. To avoid the necessity of using eccentrics or any kind of set-screws to separate the pressure-rollers to relieve them when not in use, the web may be made quite thick and elastic, except at one place, as shown at N. When not in use, the web being left standing with the thin part between the pressure-rollers, no releasing of the pressure is necessary. This same result may be obtained by using a larger roller at B', Fig. 5, with a portion *b* of the roller flattened, which admits of one revolution of the roller making the copy and leaves the pressure removed from the rollers when the top roller A is left resting on the flat surface described. Made in this manner a much thinner web I' may be used. In fact, a piece of muslin may be made to answer the purpose; also, the web may be omitted entirely and an absorbent surface be used on the roller B', Fig. 6, which is made to rotate in water contained in the tank. This web also admits of the rollers being made of any hard material instead of rubber, which makes the press more durable and less expensive.

J J', Figs. 2, 3, and 4, are adjustable rollers to regulate the tension of the web I and to act as an automatic feed to assist in carrying tissue and letter to the pressure-rollers. These are not necessary, and may be omitted, as in Fig. 1.

K is an endless apron to carry book or tissue between pressure-rollers. When con-

structed with the web above, as in Fig. 3, it is best to connect rollers A and C with gears or cog-wheel and put crank on A.

In Fig. 4 two pressure-rollers A and A' are shown, around which a web L of firm elastic material is passed. This gives a dwell to the writing and insures a plain copy under all circumstances. It also admits of the second roller-pressure being applied without disturbing or changing the register. This using two pressure-rollers connected by a web, as above described, is a great improvement to all roller copying-press.

m, Fig. 4, is a roller designed to keep the web L stretched out.

An important feature is the leaving a portion of the moistening-web thin, as above, and for the purpose described.

My press admits of copies being made either on single sheets cut to the sizes desired on tissue, in rolls, or in a common letter-copying book. I have not shown the manner in which the rollers will be connected in their bearings, as no special improvement is claimed.

To avoid confusion and designate that part of the apparatus which sustains the manuscript during the process of copying against the tension of the pressure-roller, as the web I, Figs. 1, 2, 3, and 4, the roller B' and web I', Fig. 2, and the roller B^a, Fig. 6, it has been deemed expedient to refer to and embrace the same under the title of "traveling support" in the claims. The parts designated by the reference-letters I, I', and B^a move or travel with the pressure-roller, and being of absorbent material, as hereinbefore set forth, the phrase "traveling support having a resistance-surface of absorbent material," which

will be hereinafter used in the claims, is thought to be appropriate and descriptive of the parts included within the meaning of the same.

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

1. In a roller copying-press, the combination, with the pressure-roller A, of a traveling support having a resistance-surface acting in opposition to the said pressure-roller when in efficient service and having a reduced or depressed portion which relieves the pressure-roller from pressure when the machine is not in use, substantially as described.

2. In a roller copying-press, the combination, with the pressure-roller A, of a traveling support having a resistance-surface acting in opposition to the said pressure-roller when in efficient service and having a reduced or depressed portion which relieves the pressure-roller from pressure when the machine is not in use, a water-tank, and a wringer-roller for removing the excess of moisture from the said resistance-surface, substantially as described.

3. In a roller-press, the combination, with the pressure-rollers and a wringer-roller working in opposition to one of the pressure-rollers, of a moistening-web having a portion reduced in thickness, substantially as and for the purpose described.

In testimony whereof I affix my signature in presence of two witnesses.

FRANKLIN EDWARDS DAVENPORT.

Witnesses:

FRANK B. DAVENPORT,
HERNANDES M. PHILLIPS.