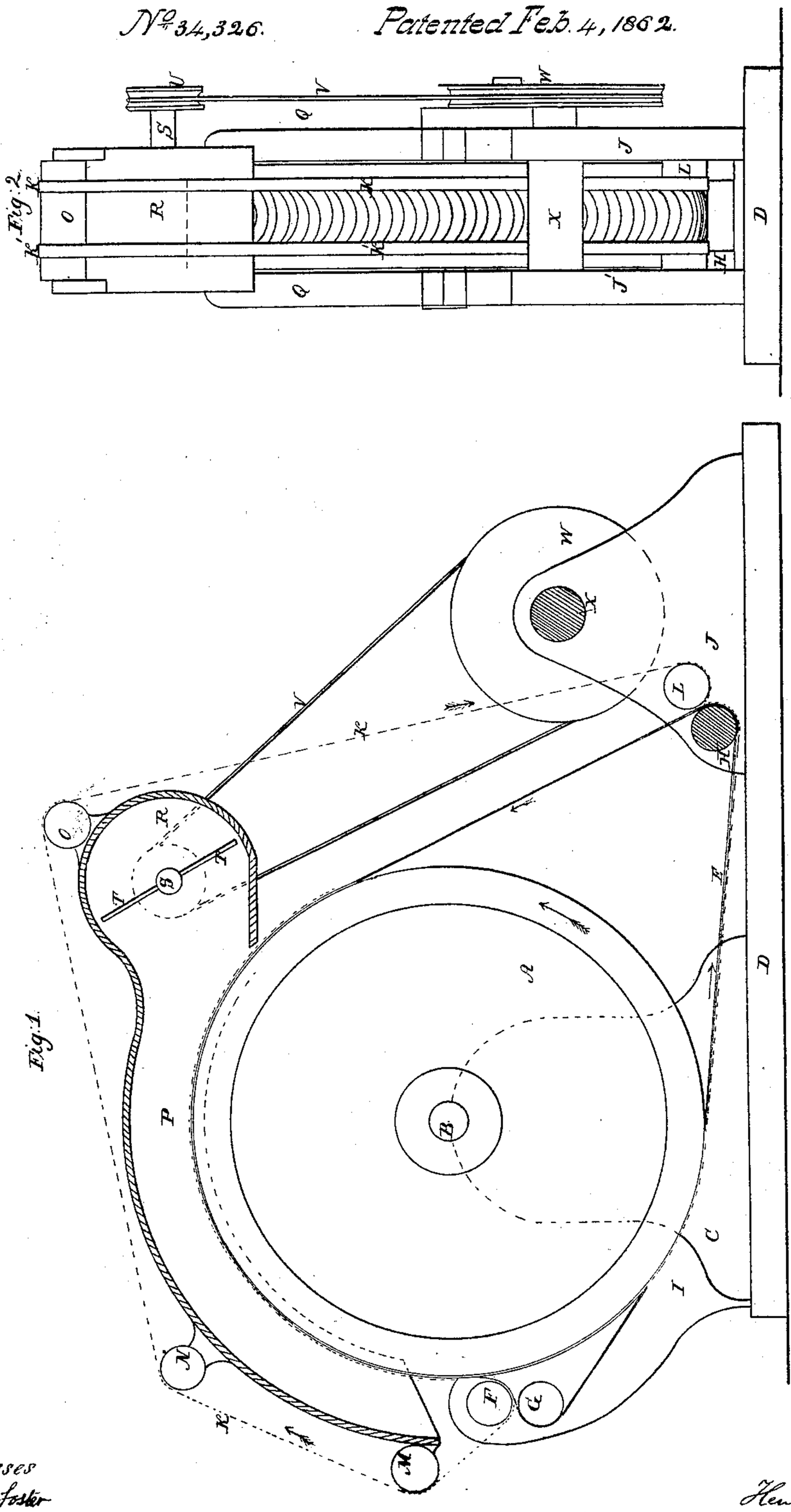
J. Armstrong.
Envelope Mach.

No. 34,326. Patented Feb. 4, 1862.



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UNITED STATES PATENT OFFICE.

JOHN ARMSTRONG, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO R. T. KENSIL & CO., OF SAME PLACE.

APPARATUS FOR DRYING PASTED ENVELOPES.

Specification forming part of Letters Patent No. **34,326**, dated February 4, 1862.

To all whom it may concern:

Be it known that I, JOHN ARMSTRONG, of Philadelphia, Pennsylvania, have invented an Apparatus for Drying Pasted or Gummed Envelopes, Paper Bags, &c.; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

My invention consists of a pulley or drum, an endless band, and certain endless tapes, arranged, substantially as described hereinafter, in combination with a fan or its equivalent for directing a blast of air onto and thereby rapidly drying the gummed or pasted envelopes or bags which are confined by and caused to traverse with the said endless bands and endless tapes.

In order to enable others skilled in the art to make and use my invention, I will now proceed to describe the manner of carrying it into effect.

On reference to the accompanying drawings, which form a part of this specification, Figure 1 is a vertical section of apparatus for drying gummed or pasted envelopes, paper bags, &c., and Fig. 2 is an end view.

A is a drum or pulley secured to a shaft B, the ends of which turn in standards C and C′, secured to a foundation-plate D. An endless band or apron E, of the same width or thereabout as the periphery of the pulley A passes over the latter, bears against the roller F, passes around the roller G, round the roller H, and thence to the drum A, the rollers F and G turning in brackets I I, projecting from the standards C and C′, and the roller H, turning in standards J and J′, secured to the base-plate D.

K and K′ are two endless tapes passing round the roller L, over the pulley A, and in contact with the endless apron E, thence under the pulley F, and thence guided by the pulleys M, N, and O, back to the pulley L. The outer edges of these tapes K and K′ coincide, or nearly coincide, one with one edge and the other with the opposite edge of the endless apron E, the tapes being situated at a suitable distance apart from each other, for a purpose which will be rendered apparent hereinafter.

P is a curved box supported on projections Q and Q′, which are secured to or form a part of the standards C and C′, the box being open below and having its sides so arranged as to overlap the edge of the pulley A, and to be as near as possible to the latter without being in actual contact therewith. One end of this box is open, the opposite end being formed into a circular chamber R, in the opposite sides of which turns a spindle S, the latter being provided with any suitable number of vanes T, and one end of the spindle being furnished with a pulley U for receiving an endless band or strap V, the latter passing round another pulley W on the shaft X, which turns in the standards J and J′.

It should be understood that the above-described apparatus may be used as an independent machine for drying the paste used in making envelopes, as well as the gum deposited on the overlapping fold for rendering the envelopes adhesive. The apparatus, however, may be most advantageously used in connection with or as a part of an envelope-making machine in which the rapid drying of the paste and gum is an important object. In the present instance the machinery is arranged for rapidly drying the gum usually deposited on the overlapping fold of an envelope. A rotary motion in the direction of the arrow is imparted to the drum or pulley A, causing the endless apron E and the tapes K and K′ to traverse in the direction pointed out by their arrows. The finished or partly-finished envelopes are so fed to the machine that they will pass between the rollers H and L in uniform succession, the rapidity with which they are presented to these rollers and the speed with which the endless apron and tapes move being so regulated that as the envelopes are carried upward between the apron and tapes one envelope shall overlap the succeeding envelope, as seen in Fig. 2, to such an extent that one fold of one envelope shall leave sufficient of the succeeding envelope exposed to have a pasted or gummed surface of the desired extent imparted to it. This gum or paste is applied by a brush operated by the hand or by any suitable mechanism to the exposed portions of the folds of the envelopes as the latter approach the pulley or drum A, the tapes K and K′, leaving sufficient of the folds of the envelopes exposed laterally for

the reception of the gum. As the envelopes pass over the pulley or drum A and within the lower portion of the box P, their gum folds are fully exposed to the blast created by the revolving vanes T, and as the box covers about one-third of the circumference of the drum, the gummed surfaces are exposed long enough to become thoroughly dry before they are discharged from between the apron and the tapes, which are caused to diverge from each other by the rollers F and G. Not only are the gummed portions of the overlapping folds effectually and rapidly dried by the apparatus, but the paste by which other parts of the envelopes have been cemented together are also so efficiently dried that when they are discharged from between the apron and tapes they are in a fit condition to be formed into suitable packages.

In some envelope-machines the gum is deposited on the overlapping fold prior to the folding of the paper together into the desired form, in which case it is desirable that the paper should be as far as possible free from the twisting and warping which the artificial heat usually employed for drying purposes is apt to cause. In drying the gum or paste, however, by a blast of air the paper will not alter its form, but will remain in that unwarped condition which is necessary for the proper completion of the folds.

Although I have described the apparatus as being used for gummed or pasted envelopes it will be evident that it is equally well adapted to the drying of seed-bags and paper-bags generally, and although a fan of peculiar form for creating and directing the required blast has been described other blowing apparatus may be substituted.

I do not desire to claim, broadly, the drying of pasted or gummed paper by directing blasts of air onto the same; but

I claim as my invention and desire to secure by Letters Patent—

The drum or pulley A, its endless band E, and the endless tapes K, the whole being arranged and operating substantially as set forth, in combination with the fan or its equivalent, for the purpose specified.

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

JOHN ARMSTRONG.

Witnesses:

HENRY HOWSON,

JOHN WHITE.