A. A. RHEUTAN

Drying Attachment for Envelope-Machines.

No. 212,745. Patented Feb. 25, 1879.

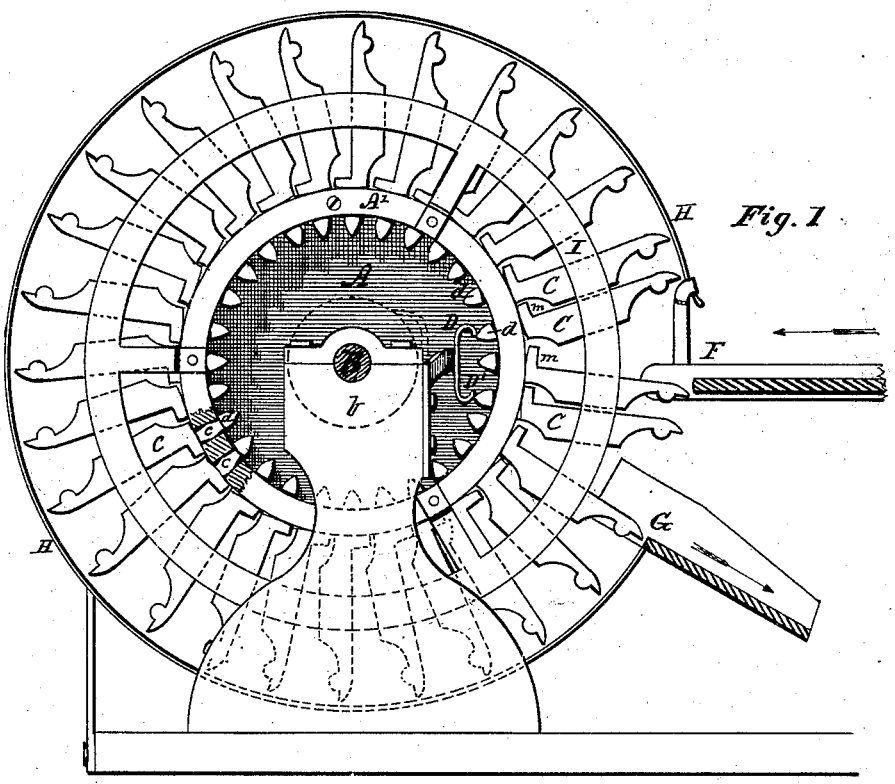

Fig. 1

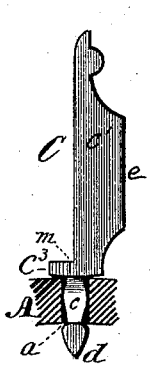

Fig. 3

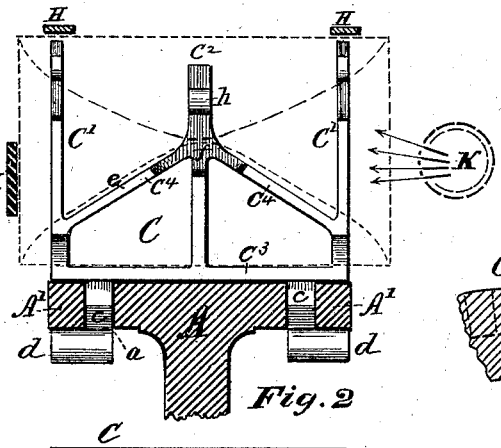

Fig. 2

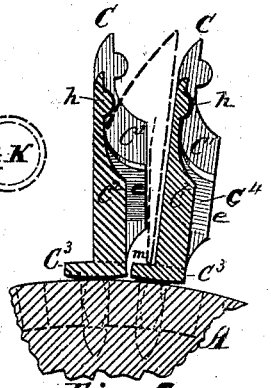

Fig. 5

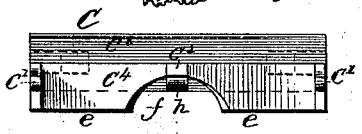

Fig. 4

Witnesses

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IMPROVEMENT IN DRYING ATTACHMENTS FOR ENVELOPE-MACHINES.

Specification forming part of Letters Patent No. **212,745**, dated February 25, 1879; application filed August 16, 1878.

To all whom it may concern:

Be it known that I, ABRAM A. RHEUTAN, of Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Drying Attachments for Envelope-Machines; and I declare the following to be a description of my said invention sufficiently full, clear, and exact to enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 represents a side view of my improved drying attachment or apparatus. Fig. 2 is a front view of one section of the envelope-supporting fingers, with a portion of the rim of the central cylinder or wheel shown in section. Fig. 3 is a side view of one of the finger-sections. Fig. 4 is a top view of the same, and Fig. 5 is a transverse central section of two adjacent finger-sections. The position of the envelope is indicated by dotted lines.

This invention relates to mechanism to be employed in connection with envelope-folding machines, for the purpose of supporting the several freshly-formed envelopes separately, and in such a manner that the paste or gum applied by the machine to the sealing-surfaces of the flaps will have sufficient time to become dried before they are pressed together or carried into close contact in the counting or bunching operation; and my invention consists in a circular wheel-drier revolving about a central axis, and having a series of radially-arranged fingers or envelope-supporting sections connected to the periphery of the central wheel or cylinder, by means of lock-joints or hinge attachments, in such a manner that while they are closely retained to the periphery of the wheel they are permitted limited swinging movement toward or from each other, enabling them to be opened or separated at desired positions for the reception or discharge of the envelopes, as more fully hereinafter described.

The peculiar construction of the wheel and finger-sections and the method of operation are features of my invention, as specifically hereinafter set forth and claimed.

In the drawings, A denotes the center cylinder or wheel, mounted upon journals or shaft B, which revolve in suitable supporting-bearings *b*.

C indicates the envelope-supporting sections, constructed in the form shown, with side fingers, C^1, and central finger, C^2, projecting outward from the base-plate C^3, near the ends of which, and on the opposite side, are angular projections *c*, with offset heads *d*, by the aid of which the finger-sections C are retained to the rim or periphery of the wheel A, said rim being provided along its opposite edges with series of radial slots or recesses *a*, into which the angular projections *c* are fitted, and there retained by means of rings A′, secured to the outer edges of the rim, which rings enter the space between the heads *d* and back plate, C^3, and confine the sections by the locking of the joint parts, as illustrated.

The projecting shanks *c* are formed thicker at their centers than at their outer or inner ends, so that when arranged in the radial slots there will be some play space at the top and bottom of the slots, thus permitting a slight swing or rocking movement, to allow of the fingers being separated to a greater or less degree at their outer extremities.

The under portions of the base-plates may be slightly rounded to facilitate the rocking of the sections.

The base-plates C^3 are made to offset from the fingers, as shown at *m*, to form a seat upon which the edge of the envelope rests, and to bring the face-line of the fingers in a plane with the centers of the locking shanks or projections *c*. A cross-bar, C^4, is arranged across the section, joining the central finger, C^2, with the outer fingers, C^1, on a line corresponding with the gummed portion of the lower flap of the envelope, (see Fig. 2,) while the edge *e* of said cross-bar is extended back to a proper distance to meet the envelope and prevent the said lower flap from springing away from the sides before the gum becomes set sufficiently to hold.

The central finger and cross-bar are cut away

directly at their junction, as at *f*, that they may not press the end of the upper flap of the envelope down upon the other portions as they are fed into the drier, while a lug or ball, *h*, is formed at or near the end of the central finger, C^2, to prevent the flap from straightening out. (See Fig. 5.)

F indicates the table or chute, where the folded envelopes are carried from the folding devices to the drier, any suitable mechanism being employed for delivering them between the fingers C, which are opened or separated at that position by means of the dog or opening device D, which engages the heads *d*, which project inward from the rim A′, in the manner shown in Fig. 1. G indicates the chute by which the dried envelopes are conveyed back into the machine for counting and bunching, or other subsequent operation. The fingers C are separated or opened by the dog D′ as they pass the discharge-chute G.

H indicates the hoops or guides for retaining the envelopes between the fingers as the drier revolves. I indicates a guard arranged at one side of the apparatus at the ends of the envelopes, to prevent their displacement by the air-blast, which is employed to facilitate the drying process, said blast being forced from a circular pipe at the side opposite the guard I, as illustrated at K, Fig. 2, or in any well-known manner, as desired. This drying attachment may be combined with any envelope-machine, and arranged for intermittent rotative movement by means of a pawl and ratchet, or otherwise, whereby the drier will be moved forward one step or section each time an envelope is made and delivered at F, the successive spaces being presented and fingers raised for the reception of the envelopes as they pass the delivery-table, and in similar manner as they pass the return-chute G, thus operating continuously.

In practice, the wheel A would be of larger proportions than herein shown, and a greater number of finger-sections used. Hence the adjacent fingers would stand nearer parallel with each other. The size and form of the fingers would also vary somewhat, to correspond with the style and sizes of envelopes made.

In most cases a distance of one-thirty-second to one-sixteenth of an inch between the edge *e* of the cross-bar C^4 and the face of the one adjacent would be considered sufficient, such space allowing room for the envelopes without too great a degree of freedom, and without sufficient closeness to mark or injure them.

By forming the drying apparatus circular and attaching the finger-sections each independently to the periphery of the central wheel, certain objections (such as the variation of length in the two sides, the unequal wearing and lengthening, causing the irregular presentation of the fingers) incident to the chain construction are obviated, while it requires less mechanism for its support and operation than a drier-chain of equal capacity, and the fingers or sections being independent of each other, any irregularity occurring in one set is not communicated to the whole series; neither is their relative adjustment disarranged by the wear at the joints.

The cross-bars C^4 serve to hold the envelopes straight and prevent them from warping or twisting along the gummed portion of the bottom and side flaps, as well as preventing the springing away of the lower flap; and such bars C^4 as arranged to stand in close proximity, but without coming into contact, can be employed in chain-driers with beneficial effect.

The opening devices D may be modified in construction, or made to act in any convenient manner whereby the opening or separation of the fingers or sections C will be effected at desired positions, for the purpose set forth.

What I claim as new and of my invention, and desire to secure by Letters Patent, is—

1. A circular revolving drying attachment for envelope-machines, consisting of a series of radially-arranged fingers or finger-sections independently and loosely attached to the periphery of a central cylinder or wheel, substantially as hereinbefore set forth.

2. In combination, substantially as described, the rotating cylinder or center wheel, A, the envelope-supporting fingers or sections C, fulcrumed at the rim or periphery of said wheel, and having inward extensions or heads *d*, and an opening device or dog, D, for engaging therewith to open or separate said fingers at the position for receiving or discharging the envelopes, as set forth.

3. The finger-sections C, having angular projections *c d*, in combination with the wheel A, having a radially-slotted rim, and the binding-ring A′, substantially as and for the purposes set forth.

4. A finger-section for envelope-driers, provided with a cross-bar or bearer made to conform to the shape of the edge or gummed portion of the lower flap of the envelope, for the purpose hereinbefore set forth.

5. The finger-section C, having base-piece C^3, side fingers, C^1, central finger, C^2, with lug or ball *h*, and cross-bar C^4, with bearing-edge *e*, substantially as and for the purposes set forth.

6. In combination with the delivery-table F and return-chute G in an envelope-machine, the wheel A, supported for intermittent rotative movement on the shaft B, and provided with swinging fingers or sections C, the outer circular guards, H, the side guard, I, and finger-opening device D, substantially as and for the purposes set forth.

Witness my hand this 13th day of August, A. D. 1878.

ABRAM A. RHEUTAN.

Witnesses:
CHAS. H. BURLEIGH,
C. C. BALDWIN.