

(No Model.)

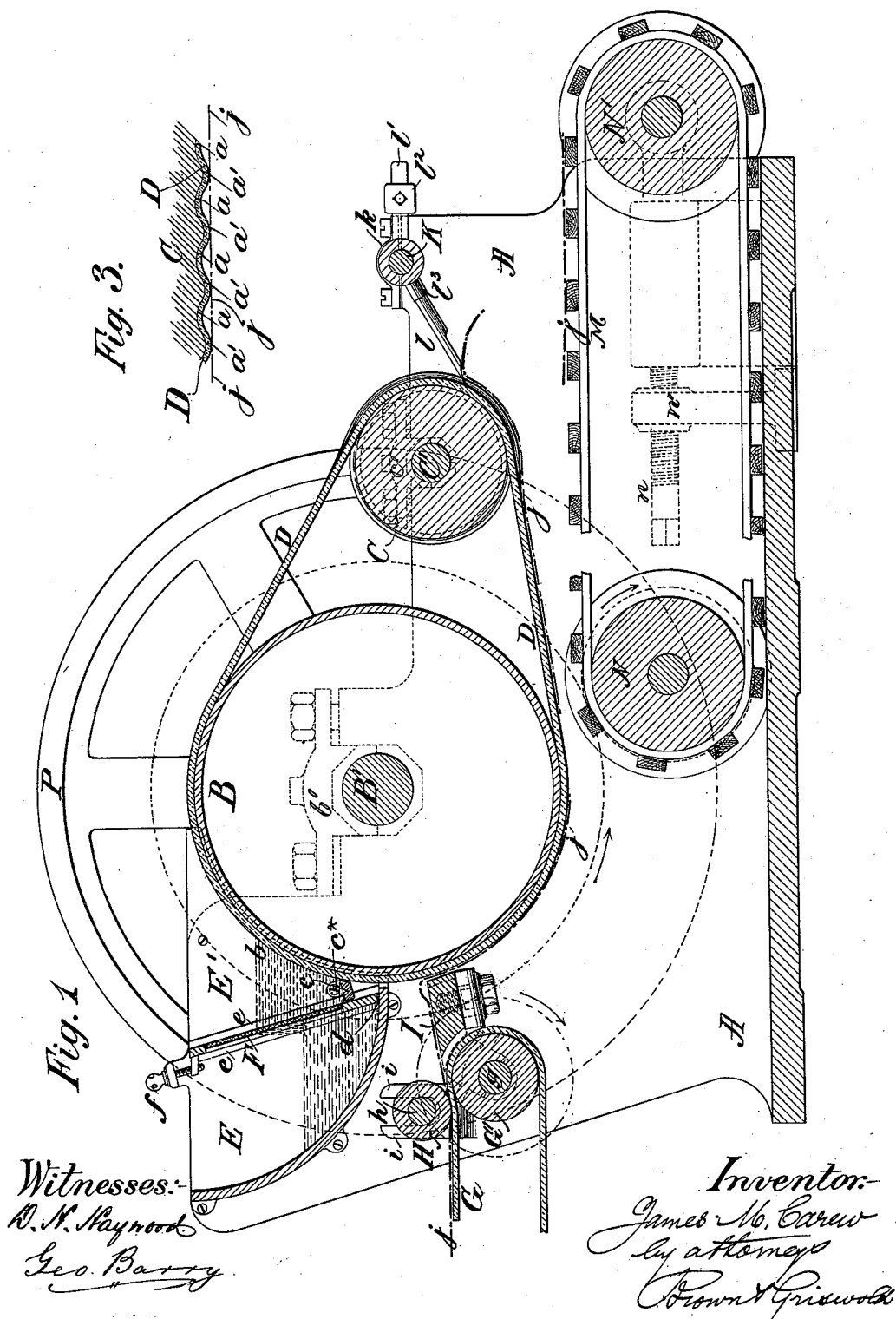
2 Sheets—Sheet 1.

J. M. CAREW.

MACHINE FOR APPLYING ADHESIVE MATERIAL TO THE SURFACE
OF PAPER, &c.

No. 423,593.

Patented Mar. 18, 1890.



(No Model.)

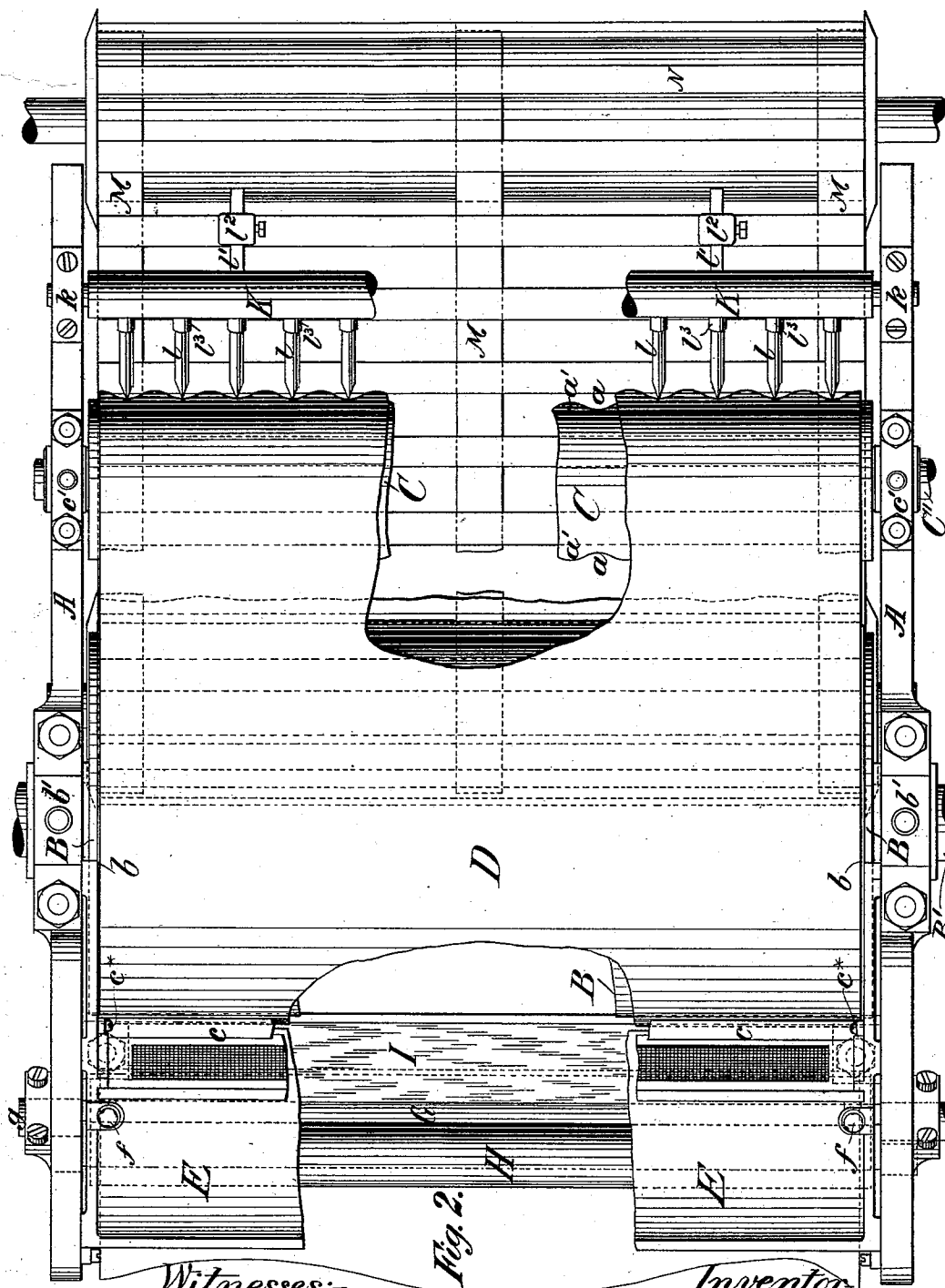
2 Sheets—Sheet 2.

J. M. CAREW.

MACHINE FOR APPLYING ADHESIVE MATERIAL TO THE SURFACE
OF PAPER, &c.

No. 423,593.

Patented Mar. 18, 1890.



Witnesses:-
O. H. Haywood
Geo. Barry

Inventor
James M. Carew
by attorney
R. M. Griswold

UNITED STATES PATENT OFFICE.

JAMES M. CAREW, OF NEW YORK, N. Y.

MACHINE FOR APPLYING ADHESIVE MATERIAL TO THE SURFACE OF PAPER, &c.

SPECIFICATION forming part of Letters Patent No. 423,593, dated March 18, 1890.

Application filed August 7, 1889. Serial No. 319,973. (No model.)

To all whom it may concern:

Be it known that I, JAMES M. CAREW, of the city and county of New York, in the State of New York, have invented a new and useful
5 Improvement in Machines for Applying Adhesive Material to the Surface of Paper or other Fabrics, of which the following is a specification, reference being had to the accompanying drawings.

10 This invention relates to such machines as are commonly known as "paper-gumming" machines, employed for the purpose of gumming or applying adhesive material to the surfaces of paper to be used in the manufacture of pa-
15 per boxes, but is applicable to machines for applying adhesive material to the surface of paper for other purposes or to the surfaces of other fabrics.

I will now proceed to describe my improvement with reference to the accompanying drawings, and afterward point out its novelty in claims.

Figure 1 in the drawings is a longitudinal vertical sectional view of the principal parts
25 of a machine embodying my improvement. Fig. 2 is a plan view corresponding with Fig. 1, showing some of the parts broken away to expose other parts to view. Fig. 3 is a diagram, which will be hereinafter explained.

30 Similar letters of reference designate corresponding parts in all the figures.

A designates a framing containing bearings for the shafts of the rotary members of the machine and supporting all the other work-
35 ing parts thereof.

B designates a plain cylindrical drum, which may be of cast-iron and hollow, and the shaft B' of which is supported in bearings b',
40 provided on or in the framing A. The said shaft B is represented in Fig. 1 as furnished with a driving-pulley P.

C is a drum, which may be of wood or other suitable material, corrugated circumferentially as shown at a a' in Fig. 2, and also in
45 Fig. 3, which represents a longitudinal section of a portion of the profile, and the shaft C' of which is supported in bearings c' in the framing A, with its axis parallel with the drum B.

50 D is an endless band of stout india-rubber or suitable elastic material running on the drums B C. This band should be strong

enough to drive the drum C from the drum B, and should have such a degree of elasticity and such tension that in running on the cor-
55 rugated drum C it will conform to the corrugations thereof, as shown in Fig. 2 and in the sectional diagram in Fig. 3, and that in running on the plain drum B its face will be straight in a transverse direction—that is to
60 say, will conform to the straight longitudinal profile of the drum. This band constitutes a rotary carrier, upon the outer surface of which the adhesive material is to be received to be
65 therefrom transferred to the surface of the paper or other fabric.

E E' designate a receptacle for the paste, gum, or other adhesive material, which is to be applied to the paper or fabric. This re-
70 ceptacle consists of two compartments separated by a transverse partition F. The compartment E', which is next the endless carrier D, is entirely open on the side b, which is next the carrier, and its edges are so fitted
75 to the parts of the drum B which project beyond the edges of the carrier as to make a snug working joint close enough to prevent the escape of the adhesive material.

In Fig. 2 the drum is shown with a rabbet around its end to receive the edges b of the
80 sides of compartment E' and form a working joint.

In the compartment E' is a bar c, which constitutes a scraper. This bar extends all
85 across the receptacle and is secured by any convenient means, as screws c*. The said bar forms the bottom of the compartment E', leaving below it a space through which the adhe-
90 sive material may flow from the outer compartment E to the cylinder from a small opening d, provided under the partition F. The
95 said partition F is fitted to be capable of sliding up and down in guides e, provided in the sides of the receptacle and is made adjustable therein by a screw f, so that the said par-
100 tition constitutes a gate, at the bottom of which is formed the opening d, which is made adjustable to regulate the quantity of adhesive material flowing from the compartment E to the cylinder by means of the screw f.

perforated or reticulated material to form a strainer to strain the paste between the two compartments.

G designates a portion of the endless apron, which may be employed to feed the sheets or pieces of paper or other fabric to the rotary carrier D to be gummed or pasted. One of the carrying-rollers G' of this apron is shown in the drawings, having its shaft *g* supported in bearings in the framing A. A pressure-roller H, having its journals *h* in open housings *i* on the framing A, is represented as placed above the apron G, to hold down thereon the sheets of paper or fabric *j* to be pasted or gummed. These sheets are represented in Fig. 1 in lines composed of alternate dots and dashes.

Between the apron G and the rotary carrier D there is represented as secured to the framing A a stationary table I, over which the fabric or paper passes to the cylinder, as shown in Fig. 1.

At the opposite end of the framing A, to which the receptacle A' and the feeding-apron G are placed, a rock-shaft K is mounted in suitable bearings *k*. To this rock-shaft are secured a number of radially or laterally projecting strippers *l*, the points or ends of which enter the furrows formed in the rotary carrier D, where it runs over the corrugated drum C.

On the opposite side of the rock-shaft K to that from which the strippers project there are one or more arms *l'*, on which are counter-balances *l''*, which are adjustable for the purpose of keeping the strippers in contact with the bottom of the furrows in the rotary carrier without producing unnecessary pressure.

The strippers may consist simply of pointed tines or fingers. I have found best adapted to the purpose ordinary writing-pens, and have so represented them, each one fitting into one of a number of sockets or holders *l'''*, provided on the rock-shaft K.

Beneath the drum B and the strippers *l*, and a portion of the rotary carrier running on said drum, I have represented a lagged endless apron M, for the purpose of carrying away the gummed or pasted sheets. This apron is represented as running on a drum N, mounted in bearings in the framing A, and a drum N', which is supported in an independent bearing which may be set at any distance from the drum N, according to the length of the apron, which should be sufficient to leave plenty of room for attendants to take away the pasted or gummed sheets. The bearings provided for the drum N' should be adjustable to give a proper tension to the band *m*. This adjustment may be effected by a screw *n*, working a nut in a fixed support *n'*, as shown in Fig. 1; but as such adjustment forms no part of the invention it needs no particular description.

The endless apron M may be driven in any suitable manner—as, for instance, by spur-

gears on the drum N, gearing with a spur-gear on the shaft of the drum B.

The operation of pasting, gumming, or applying the adhesive material to the paper or fabric is as follows: The adhesive material, in a sufficiently fluid state, having been placed in the compartment E of the receptacle E' and the machine set in motion, the adhesive material flows through the opening *d* at the bottom of the compartment E to the outer surface of the rotary carrier D, depositing a film thereon. The sheets of paper or fabric *j* are fed by hand or by the means provided—as the apron G—over the outer surface of the table I and over the edge thereof, as shown in Fig. 1, and are taken hold of by the film of adhesive material on the carrier and coated with said material on the surface next the carrier. They are then carried along by their adhesion to the carrier until they are brought by the carrier opposite the drum C. The carrier thus, by the act of conforming to the corrugations of the drum, automatically strips the paper from all those portions of its own surface which are opposite the furrows *a* of the drum—that is to say, from all portions except the narrow lines which are in contact with the tops of the ridges *a'* of the corrugations, the paper or fabric *j*, by reason of its inelasticity, being incapable of conforming to the corrugations and remaining straight, as shown in Fig. 3. The paper or fabric being thus almost stripped off by the self-stripping action of the carrier, the stripping is easily completed by the strippers *l'*. The sheets stripped off are deposited on the slatted apron M, with their pasted or gummed sides upward, and can be easily removed from the apron by hand and taken to where they are to be used. In the meantime the adhesive material not taken from the surface of the carrier D by the paper or fabric, but remaining on said surface, passes onto the scraper *c*, by which it is scraped off to be collected in the compartment E', whence it passes through the strainer in the partition F into the compartment E. The dust which is collected on the adhesive material distributed on the carrier, as well as any other solid impurities in said material, are collected on the strainer and retained in the compartment E', so that what passes into compartment E is clean and fit to be delivered to the carrier through the opening *d*.

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

1. The combination, in a machine for applying adhesive material to paper or other fabric, of an endless elastic band, a plain drum for supporting such band with its surface straight in a transverse direction for the reception of the adhesive material and the paper, and a circumferentially-corrugated drum to which said band conforms by its elasticity for the purpose of automatically stripping from its surface the paper and the coating of adhesive material received thereby

from the band, substantially as herein set forth.

2. The combination, with a rotary carrier for receiving a coating of adhesive material to be applied to the surface of paper or other fabric, of a receptacle for the adhesive material comprising two compartments which are both open to the surface of the carrier, a strainer forming a partition between said compartments, and a scraper between the openings by which the said compartments communicate with the carrier, substantially as herein described, whereby clean adhesive material is constantly fed to the said carrier, and the surplus material is removed therefrom and strained before being again fed to the carrier, substantially as and for the purpose herein set forth.

3. The combination of an endless elastic band for receiving adhesive material to be transmitted therefrom to the surface of paper or other fabric, a plain drum for supporting the said band for the reception of the said material, a circumferentially-corrugated drum

for supporting said band at the point whence the delivery of the fabric takes place, and pointed strippers arranged opposite to the said corrugated furrows of the latter drum for the purpose of completing the shipping of the fabric commenced opposite said furrows, substantially as herein specified.

4. The combination, with an endless rotary carrier, of a receptacle for adhesive material, and a transverse partition which divides the said receptacle into two compartments at different distances from the said rotary carrier, the lower part of said partition being a gate to the compartment farthest from the carrier and the part of said partition above the gate being a strainer, and a scraper arranged in the compartment next the carrier between the carrier and the strainer, substantially as and for the purpose herein specified.

JAMES M. CAREW.

Witnesses:

FREDK. HAYNES,
JOHN BICKET.