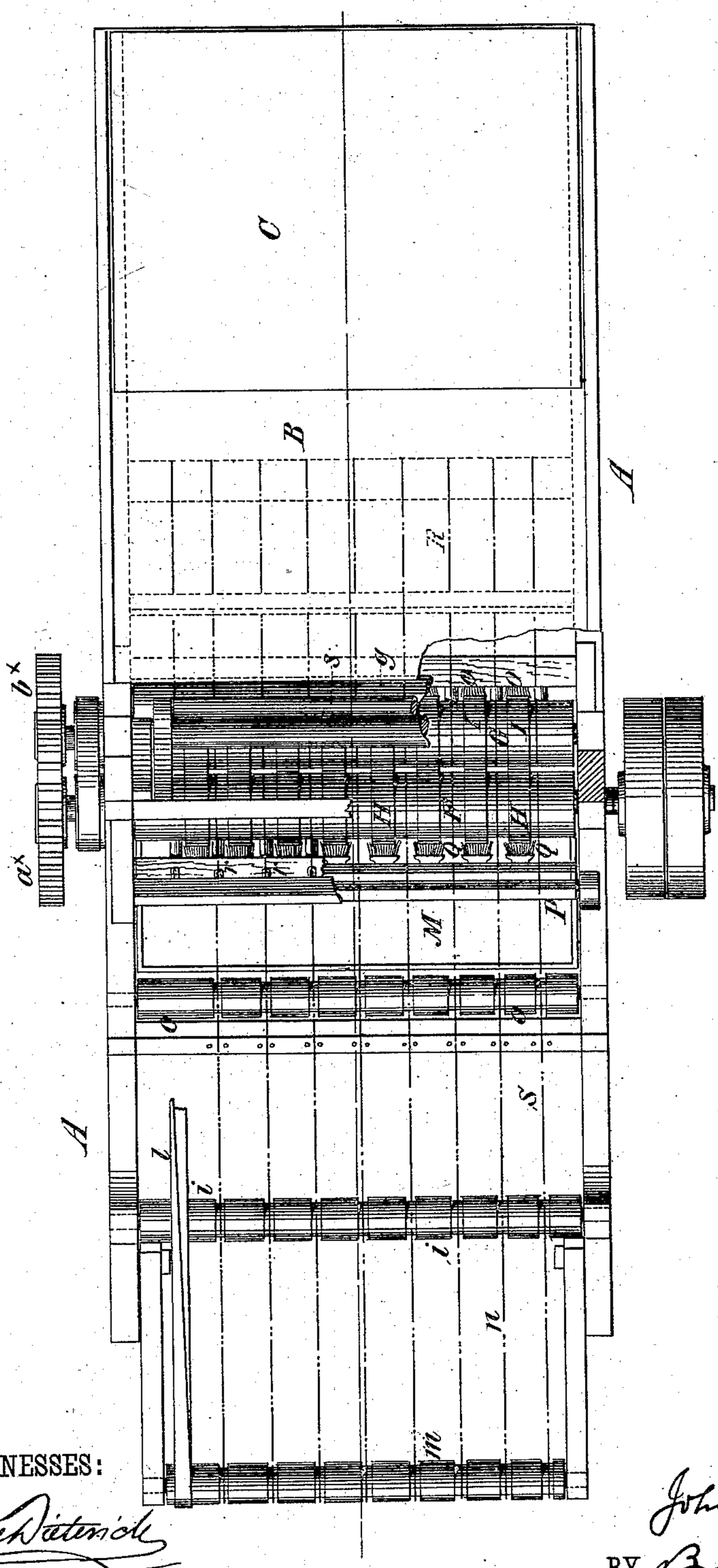
(No Model.) 3 Sheets—Sheet 1.

J. L. RILE.

MACHINE FOR GUMMING PAPER.

No. 284,236. Patented Sept. 4, 1883.

Fig. 1.



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(No Model.) 3 Sheets—Sheet 2.

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Fig. 2.

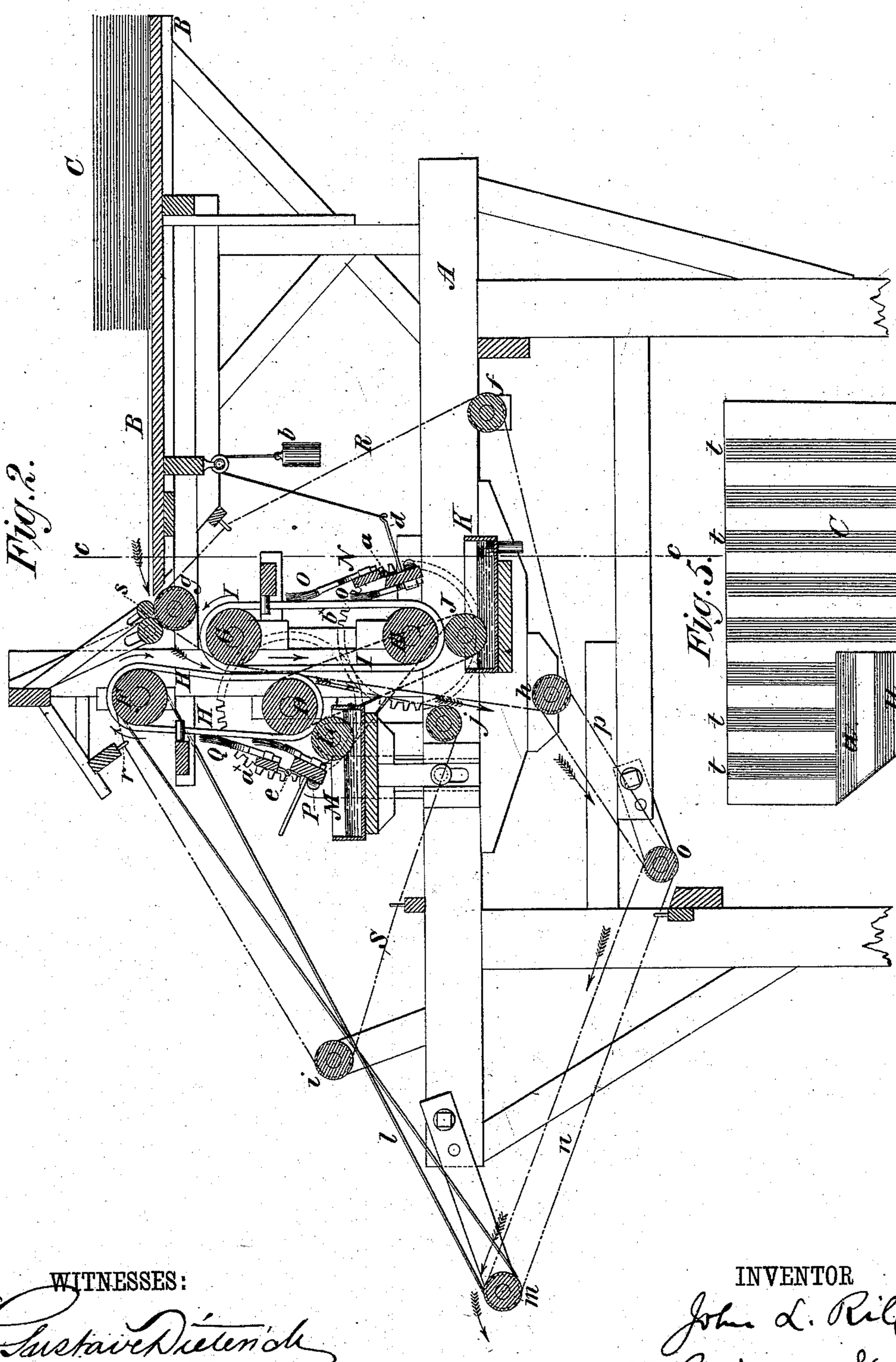

Fig. 5.

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Fig. 3.

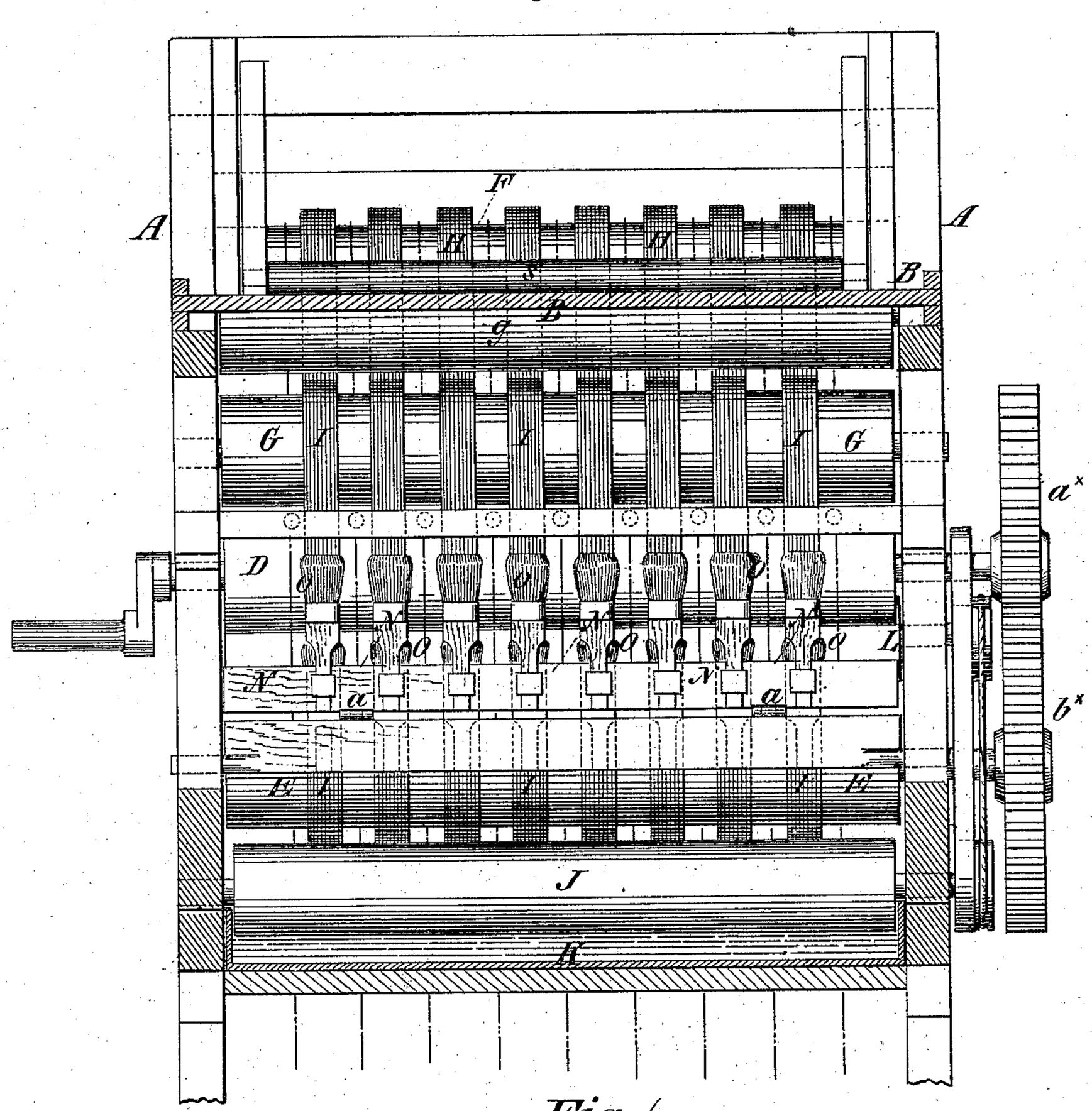
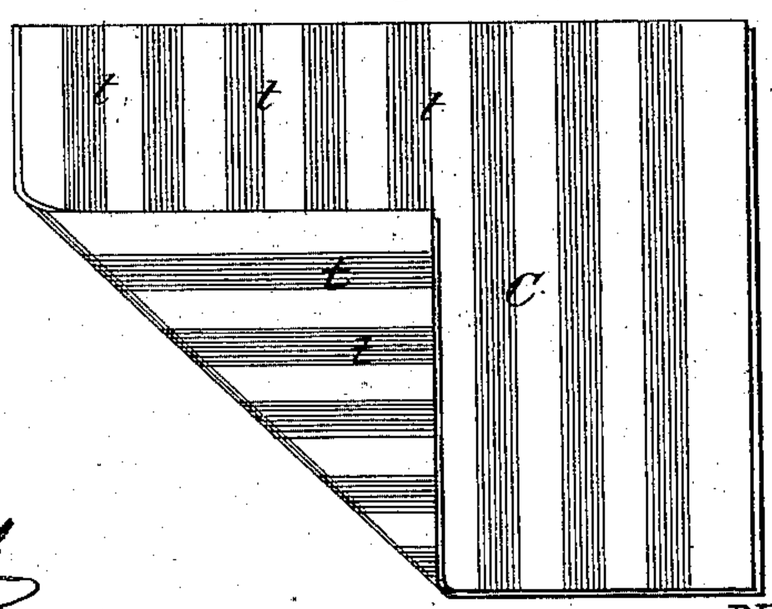


Fig. 4.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR GUMMING PAPER.

SPECIFICATION forming part of Letters Patent No. 284,236, dated September 4, 1883.

Application filed June 13, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOHN L. RILE, of South Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Machine for Gumming Paper, of which the following is a specification.

Figure 1 is a plan or top view of my improved machine, showing part broken away. Fig. 2 is a vertical longitudinal central section of the same; Fig. 3, a vertical cross-section of the same on the line *c c*, Fig. 2. Fig. 4 is a plan showing two sheets of paper that have been gummed on the machine at the same time, and Fig. 5 is a plan showing a single sheet of paper that is gummed on the machine.

The object of this invention is to produce a machine on which paper that is used for letter-files and the like can be simultaneously gummed or covered with liquid or semi-liquid coating on both sides—that is to say, on which one sheet can be gummed on both sides, or two contiguous sheets facing each other gummed on their respective outer sides.

The invention consists in the combination of parts hereinafter more fully described.

A is a frame of my improved machine, which is made of wood or any other suitable material, and which carries a table, B, upon which the sheets C to be gummed are placed in a pile. The frame A supports in suitable bearings a driving-shaft, D, to which rotary motion is imparted by a belt or in other suitable manner. This shaft communicates by toothed wheels $a^{\times}$ $b^{\times}$ with another shaft, E, that is hung in the machine parallel to the shaft D. Above the shaft D is hung in the machine a shaft, F, and above the shaft E is hung in the machine a shaft, G. Around the shafts F and D is placed between the sides of the frame A a series of rubber bands, H H, and around the shafts G and E is placed in like manner a series of rubber bands, I I, said bands being endless bands. As I usually operate this machine I place the bands H H at certain distances apart and the bands I I at equal distances apart, and so that they are aligned, as indicated in Fig. 3. The shafts D E F G are placed with reference to each other in such manner in the machine that the band I, where it passes around the roller G next to a band H, will crowd the band H somewhat out of the straight line, while at the same time the band H will, where it passes around the roller D next to a band I, crowd the band I somewhat out of its straight line, or will, at least, tend to press it.

In the lower part of the frame A is hung a gumming-roller, J, which dips into a gum-box, K, and is in contact peripherally with the bands I I. In like manner a roller, L, dipping into a gum-box, M, is in contact peripherally with the bands H H. Arrows in Fig. 2 show the direction in which these bands H and I are turned whenever rotary motion is imparted to the driving-shaft D. When they are turned, they cause the gumming-rollers J L to also revolve, and to apply gum to the outer faces of the said bands.

In the frame A, next to the outer sides of the bands I I, is also pivoted at *a* a frame, N, which carries brushes O O, that bear against the bands I I. The pressure with which these brushes O bear against the bands I can be regulated by a weight, *b*, or equivalent spring, that connects with an arm, *d*, of the pivoted brush-frame N, as shown in Fig. 2. In like manner is pivoted at *e* to the frame A another brush-frame, P, which carries series of brushes Q, that bear against the bands H, the pressure of said brushes against the said bands being regulated in substantially the same manner as has been described with reference to the brush-frame N and the brushes O.

R are a series of endless cords placed around grooved rollers *f g h* and around the roller or shaft G, said cords passing over the shaft G in the spaces between the bands I I, as indicated in Fig. 1. S are a series of similar endless cords passing around grooved rollers *i j*, and around the roller F in the spaces between the several bands H H, as is also indicated in Fig. 1. These cords R S are moved whenever the rollers G and F, with which they are respectively in frictional contact, are turned. From the shaft F a belt, *l*, transmits rotary motion to a roller, *m*, which is hung at one end of the frame A. A series of endless belts, *n*, passes around the roller *m* and around another roller, *o*, which is hung in the frame A. Another series of

endless belts, *p*, passes around the roller *o* and the roller *h*, as shown. The endless belts *n* and *p* are really series of cords placed in grooves around said rollers. The cords S are by preference passed through eyes *r* just before they reach the roller F, as indicated in Fig. 2.

The operation of the machine is as follows: A pair of sheets of paper placed face to face are passed between the roller *g* and a series of upper friction-rollers, *s*, and fed along by the rotation of the roller *g* into the space between the endless bands H and I, which bands, having been gummed, apply strips of gum to the outer faces of said two sheets. The brushes serve to keep the gum evenly distributed over the bands H and I, and the pressure which is exerted by one series of straps, H, against the other, I, and vice versa, serves to insure the proper application of the gum from the rollers to the paper. The cords R, passing diagonally from the roller G in the direction of the roller D, as indicated in Fig. 2, have for their effect the discharging of the gummed paper from the bands I, so that the gummed paper will not adhere to the bands I and follow them around into the gum-box K, while in like manner the cords S, extending downward from the roller D, prevent the paper from adhering to the bands H. The paper then passes downward between the cords R and S, and is finally deposited upon the endless belts *p*, and from these to the endless belt *n*, and thence to the suitable receiver or table. After the gum on the paper has become dry, the sheets are again taken in hand and the gummed faces placed one upon the other, so that the ungummed faces will be on the outer sides, and then the paper is again passed through the machine; but by preference the second operation is conducted in such manner, by changing the lateral position of the superposed sheets in the machine, that the stripes of gum *t*, which are formed by the first operation, will alternate with the stripes of gum *u*, which are formed at the second operation.

Fig. 4 shows the two sheets of paper as they issue on the first operation from the machine, with the stripes *t* aligned, and Fig. 5 shows one sheet as it is finally perfected, with the stripes *t* and *u* alternating. This will enable me to so fold or cut the paper into strips, each as wide as one of the stripes *t u*, that every such strip shall have gum on one side only, and results in producing a superior article of manufacture for use in making paper and letter files, in which the gummed stubs should have gum on one side only; but it is evident that the machine can also be used to apply the gum in stripes that are aligned on opposite sides of the paper, if such be desired, and likewise that by placing the several bands H H one close against the other on the shafts D F, and the bands I I one close against the other on the shafts E G, the machine can be used to gum the entire surfaces of the paper, or so much thereof as may be exposed to such continuous gumming-bands.

I do not limit myself to the particular arrangement of cords and shafts shown, as this may be materially varied without departing from the spirit of my invention.

I claim—

1. In a machine for gumming paper simultaneously on two sides, the combination of suitable feeding-rollers with two series of endless bands, H I, between which the paper to be gummed passes under pressure of said bands, and with the separating-cords R S, receiving belt or belts *p n*, and with the gumming-rollers J L and gum-boxes K M, substantially as described.

2. The combination of the gum-box K, gumming-roller J, and endless bands I I, passing over the rollers E G, with the pivoted brush-frame N, brushes O, and pressure-regulator *b d* for controlling the pressure of the brushes against the endless bands, substantially as specified.

3. The combination of the endless bands H with mechanism for gumming them, substantially as described, and with the endless bands I and mechanism for gumming them, substantially as described, said bands being arranged to press against one another for the purpose of applying a coating to each outer side of the paper that passes between the bands, substantially as specified.

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Witnesses:
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WILLY G. E. SCHULTZ.