

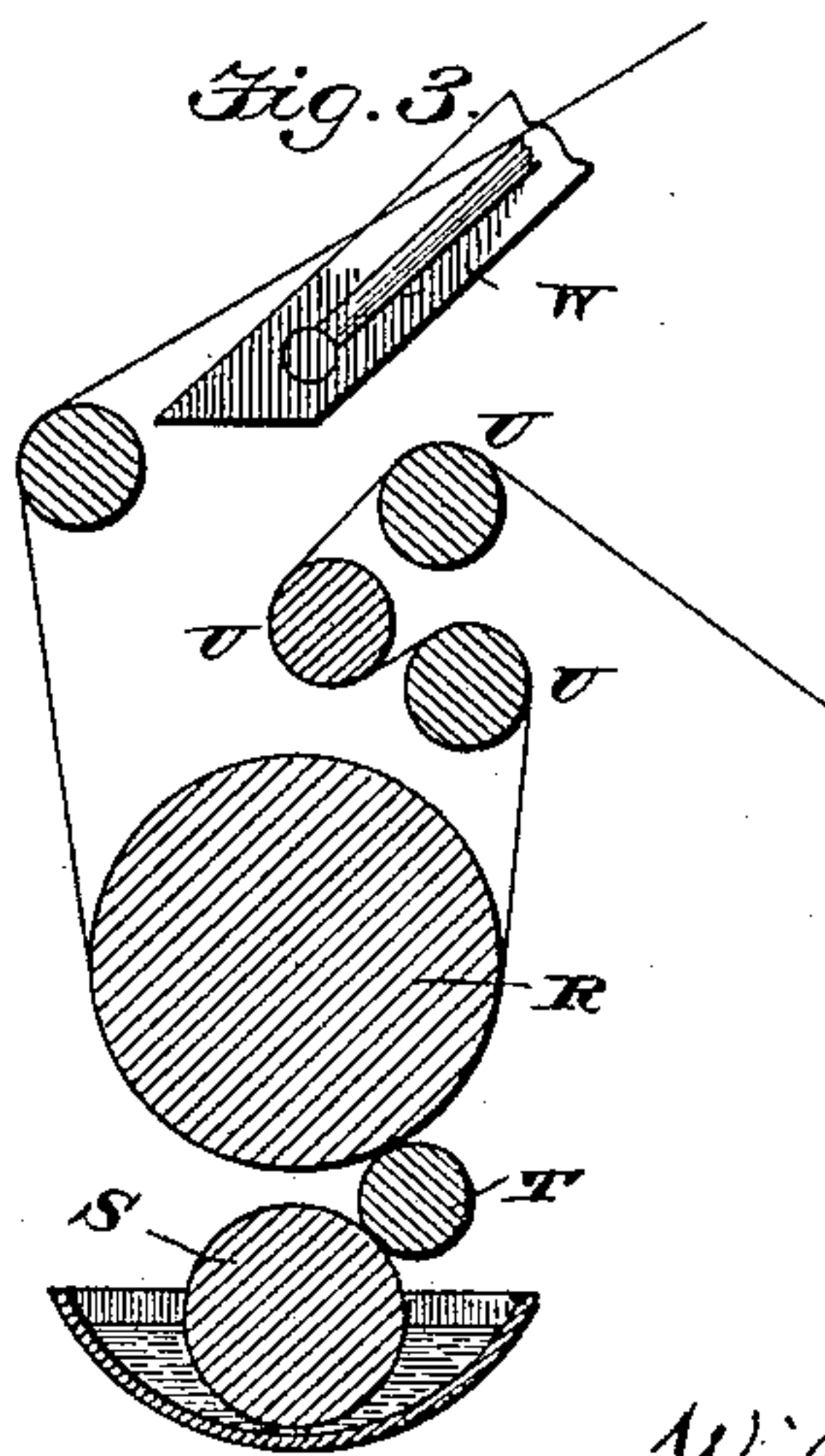
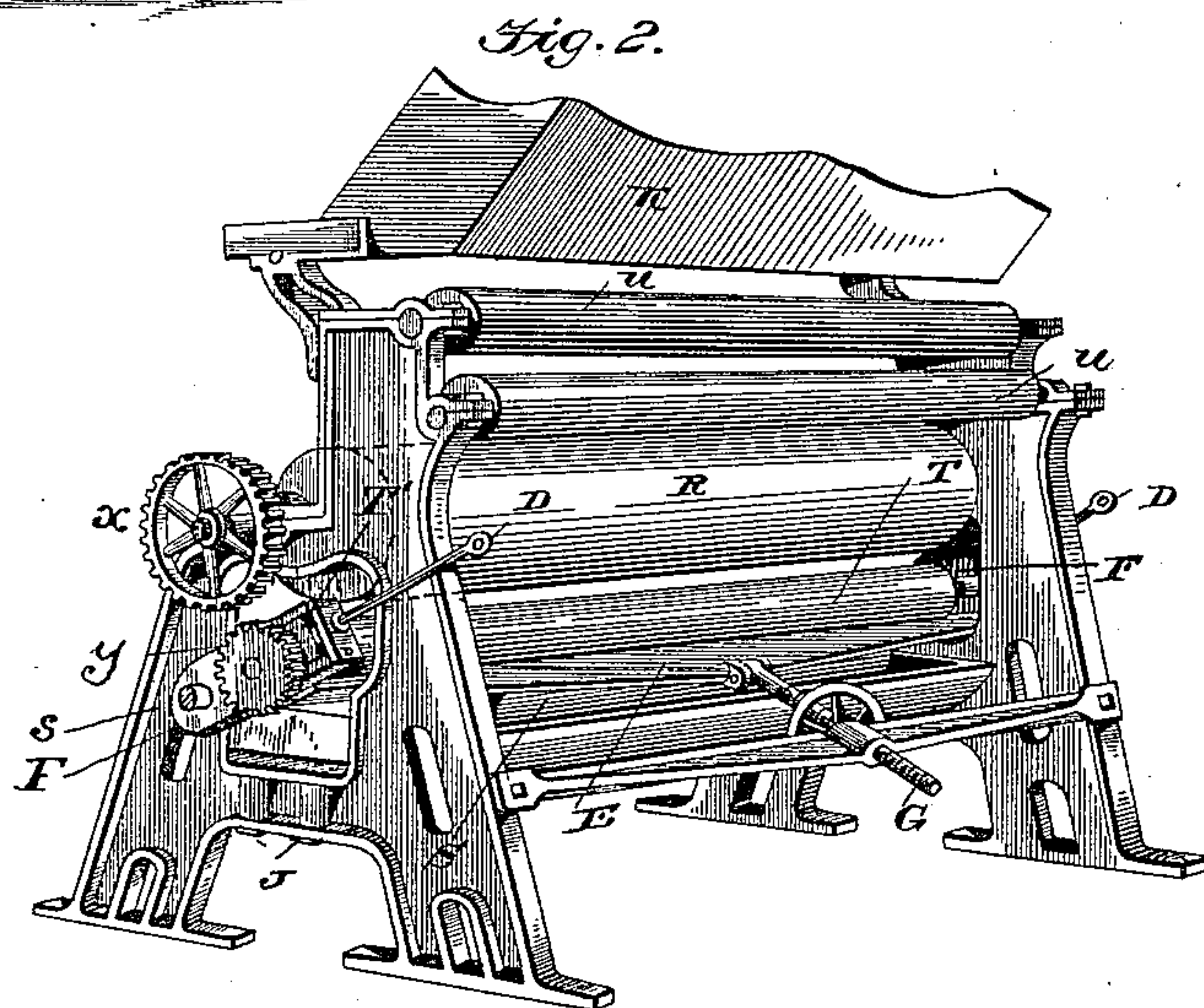
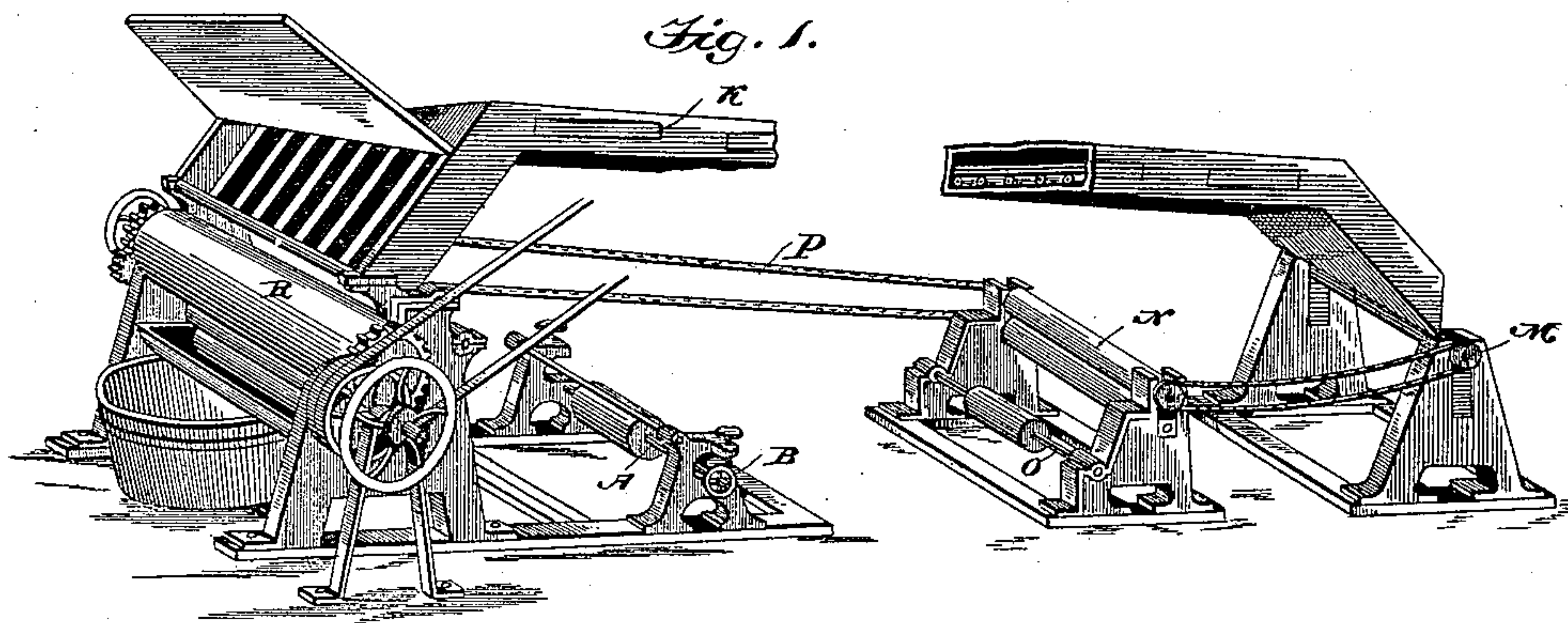
(No Model.)

2 Sheets—Sheet 1.

W. J. ANDERSON.
GUMMING MACHINE.

No. 451,011.

Patented Apr. 28, 1891.



Witnesses

John Knice
Milton A. White.

Inventor

William J Anderson

By his Attorney

T. J. W. Robertson

(No Model.)

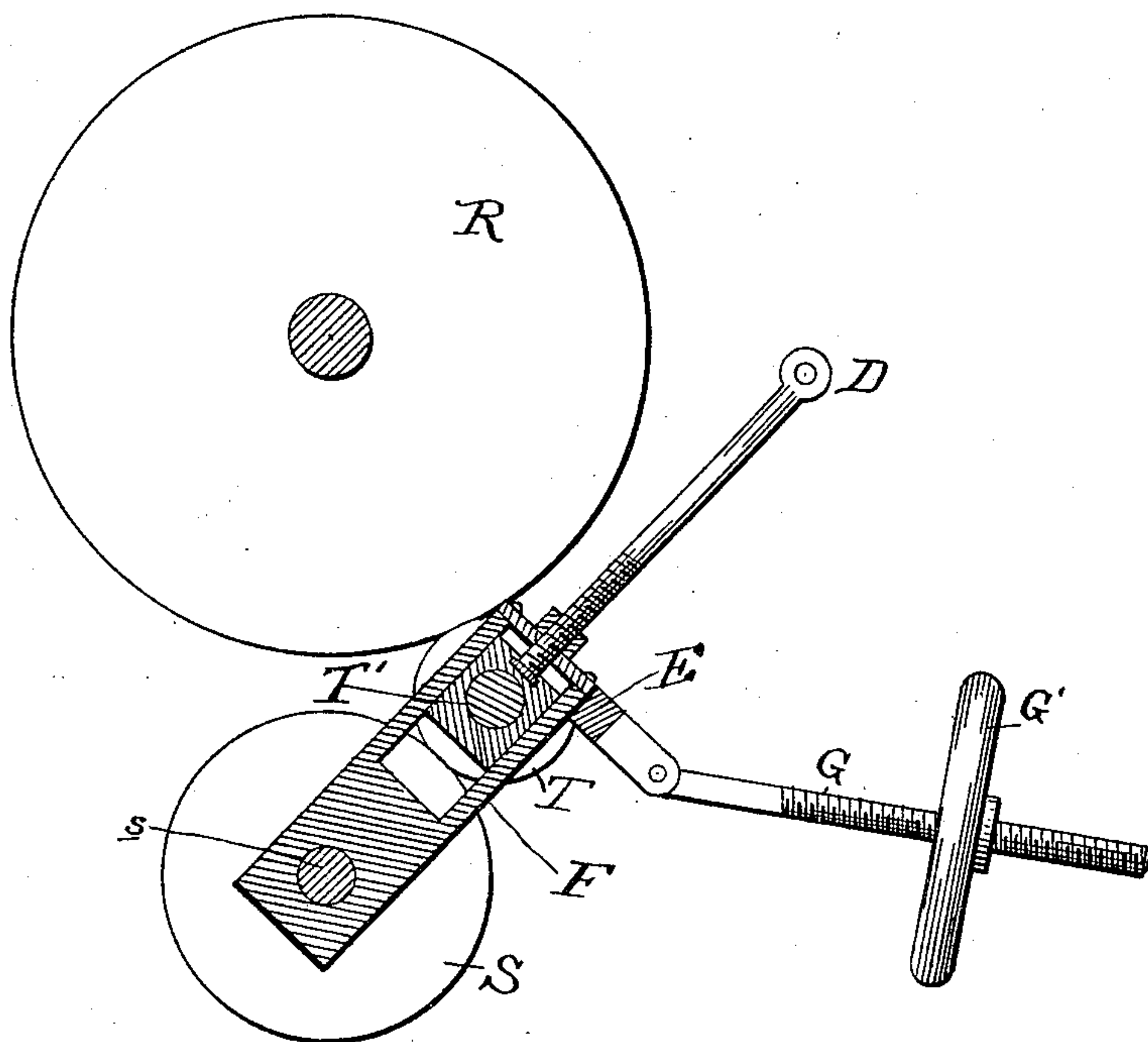
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Fig. 4.



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UNITED STATES PATENT OFFICE.

WILLIAM J. ANDERSON, OF BROOKLYN, NEW YORK.

GUMMING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 451,011, dated April 28, 1891.

Application filed November 7, 1890. Serial No. 370,717. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. ANDERSON, a citizen of the United States, and a resident of the city of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Gumming-Machines, of which the following is a specification.

My invention relates to machines for applying gum or mucilage or other liquid substances to one side of a continuous strip of paper or other flexible material drawn from a roll or spool and immediately thereafter drying and calendering the same. I do this by drawing the strip of paper from a spool through tension-rolls, over a rubber roll coated with the gum which is fed to it from a fountain in which a cylinder revolves, and after the paper is thus coated on one side with the gum passing it through a drying-chamber heated artificially, and thence through calender-rolls and finally upon another spool. To accomplish this practically I have invented the machine shown in the appended drawings, and which is hereinafter more fully described and the combinations I believe to be new definitely claimed.

In the accompanying drawings, Figure 1 is a perspective view of a machine constructed according to my improvement with parts broken away; Fig. 2, a perspective view of that part of the machine in which the main portion of my invention is embodied. Fig. 3 is a diagrammatic detail section of a portion of my invention, showing the gumming apparatus and the rolls over which the paper passes immediately before and after gumming. Fig. 4 is an enlarged vertical transverse section of a detail, showing detached from the machine the apparatus for adjusting the pressure of the rollers and for throwing the gumming-roller in and out of gear.

Corresponding letters denote corresponding parts.

A is a square shaft upon which the spool or roll of paper or other material is placed and from which it is drawn into the machine. This shaft is provided with an adjustable friction-brake B, by which the tension of the paper may be regulated. After leaving this spool the paper passes over a group of two

or more tension-rollers U, whence it is carried under a cylinder R.

Firmly pressed against the cylinder R is a rubber or composition gumming-roller T, which is supplied with the gum or other coating substance from a distributing-roller S, which revolves in a fountain containing the gum. After leaving the cylinder R the paper passes over a carrying-roller, and thence through a long drying-chamber K, heated by steam or otherwise, whence over suitable carrying-rollers it is passed through the calender-rolls N, and thence is rewound upon another spool upon the square shaft O.

An adjusting-screw G, having a threaded hand-wheel G' and passing through the frame of the machine, carries a movable frame E, rigidly secured to blocks F, in which the bearings of the gumming-roller T are situated. The blocks F (see Fig. 4) are pivotally mounted upon the ends of the spindles s of the roller S and are provided with slots, in which the bearings T' of the roller T are movable longitudinally. In Fig. 2 the roller T is represented out of contact with the wheel R to allow of paper being passed between the rollers. By turning the hand-wheel G' on the adjusting-screw G the roller T may be pressed against the paper in its passage under the cylinder R, as shown in Figs. 3 and 4, and the supply of gum to the paper may be thereby regulated, or the gumming-roller may be thrown out of gear at will and the paper passed through without gumming. Set-screws D are also provided in the block F, connecting with or impinging upon the bearings of roller T, whereby the pressure of the roller T against the roller S and the supply of gum to the gumming-roller T may be regulated.

The power is applied by belting or other gear to the cylinder R and by gearing $x y$ from cylinder R to cylinders T and S. From the cylinder R to the calender-rolls N power is supplied by a link belt or chain P, working over ratchet-pulleys of suitable form, and the size of the calender-rolls is proportioned to carry the paper at the same rate of speed at which it is fed to the gumming-roller.

The operation of my invention is as follows: A spool of paper is placed in the machine and the brake B is adjusted to give the

requisite tension. Power then being applied to the cylinder R, the paper is drawn from the spool and through the tension-rollers and between the cylinder R and the gumming-roller, where it is uniformly coated with the gum. Thence it passes through the drying-chamber K, the gummed side being uppermost, and by the heat of the drying-chamber the gum is thoroughly dried. After leaving this chamber the paper, after passing over guiding-rollers, is drawn through the calender-rolls, which smooth and press the paper and calender the surface, and from these rolls the paper passes to a spool, upon which it is finally wound before removing it from the machine.

It is evident that my invention may be used to coat any other flexible material, such as cloth or leather, and that the coating substance need not necessarily be gum, mucilage, or glue; but it is equally effective to apply any liquid or viscous substance to one side of the paper.

The drying-chamber may be heated by steam-pipes running longitudinally and the paper protected from direct contact therewith by transverse rods or rollers, and this is the form I prefer, although it might be otherwise heated, as by gas or hot air.

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

1. In a machine of the character described for coating paper upon one side with gum or paste, the combination of the shafts for carrying the feeding and winding spools, the shaft of the feeding-spool being provided with a tension-brake, as described, the tension-rollers, the main cylinder R, having means for receiving power for operating the machine, the gumming-roller T, supplied with gum from

the roller revolving in the tank containing the gum, the gearing for transmitting power from the main cylinder to the gumming-rollers, as described, the adjusting-screw G for regulating the pressure of the gumming-roller on the main cylinder or for throwing the gumming-roller out of operation at will, the drying-chamber K, and calender-rolls N, substantially as and for the purposes set forth.

2. In a gumming-machine, the combination of the gumming-roller T, movable frame E, having bearings for said roller, the adjusting-screw G, passing through the frame of the machine, the roller S, and blocks F, carrying the bearings of roller T and pivotally secured to the spindles of roller S, substantially as shown and described.

3. In a gumming-machine, the combination of the gumming-roller T, movable frame E, having bearings for said roller, and the adjusting-screw G, with the blocks F, the set-screws D, and gearings x y , substantially as shown and described.

4. In a gumming-machine, the combination of the rollers S and T, cylinder R, movable frame E, the blocks F, secured to said frame E, the spindles s of roller S, on which said blocks are mounted, the adjustable bearings T' of roller T, the adjusting-screws D in blocks F, and the adjusting-screw G, passing through the frame of the machine and acting on the movable-frame, substantially as described.

Signed at the city of New York, in the county of New York and State of New York, this 6th day of November, A. D. 1890.

WILLIAM J. ANDERSON.

Witnesses:

WM. ROCKWELL.

SIMMONS THOMAS.