

(No Model.)

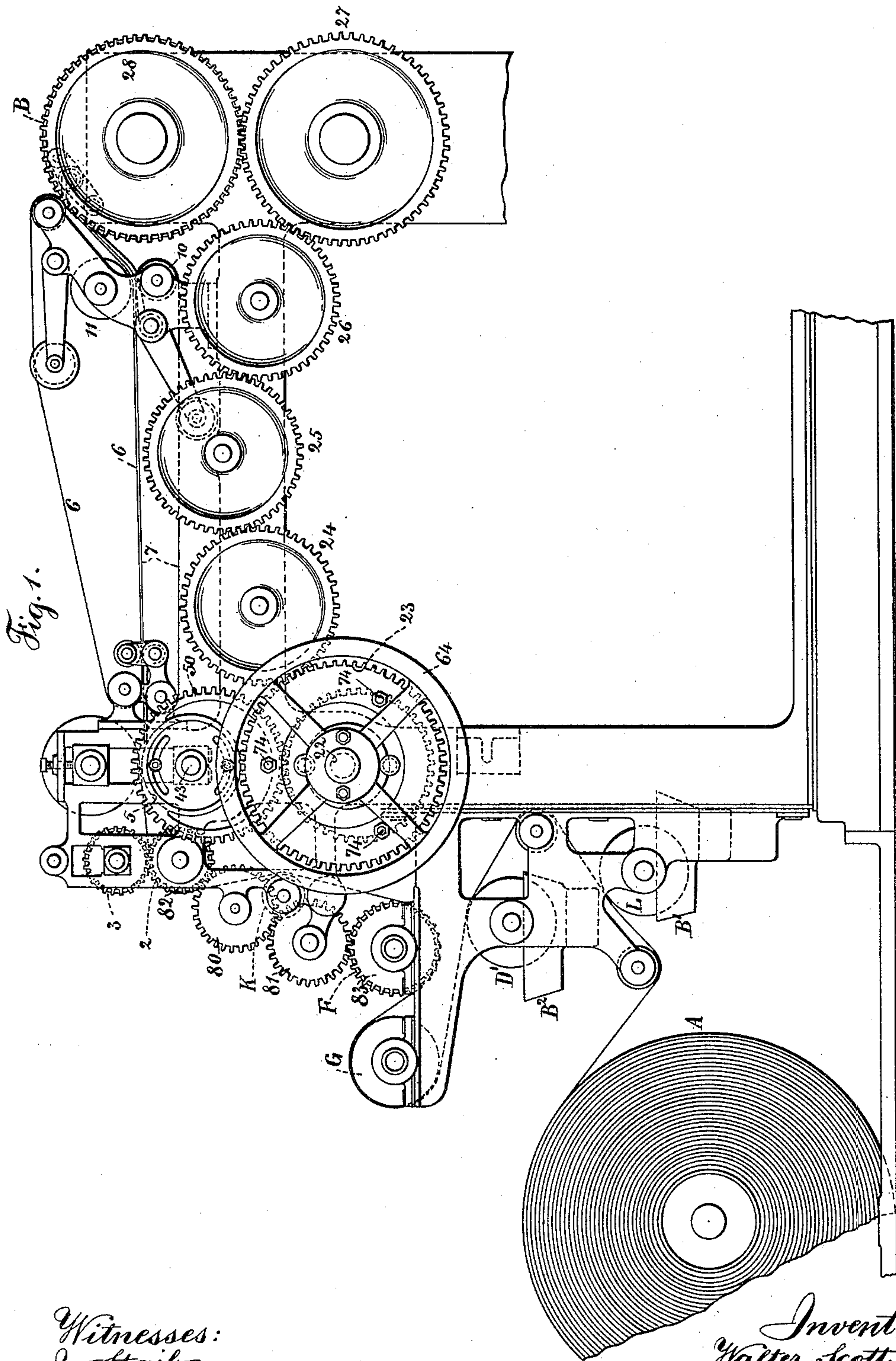
3 Sheets—Sheet 1.

W. SCOTT.

DAMPENING AND FEEDING MECHANISM FOR PRINTING MACHINES.

No. 411,535.

Patented Sept. 24, 1889.



Witnesses:  
J. Stait  
Chas. Smith

Inventor:  
Walter Scott  
per Lemuel W. Ferrell Att'y.

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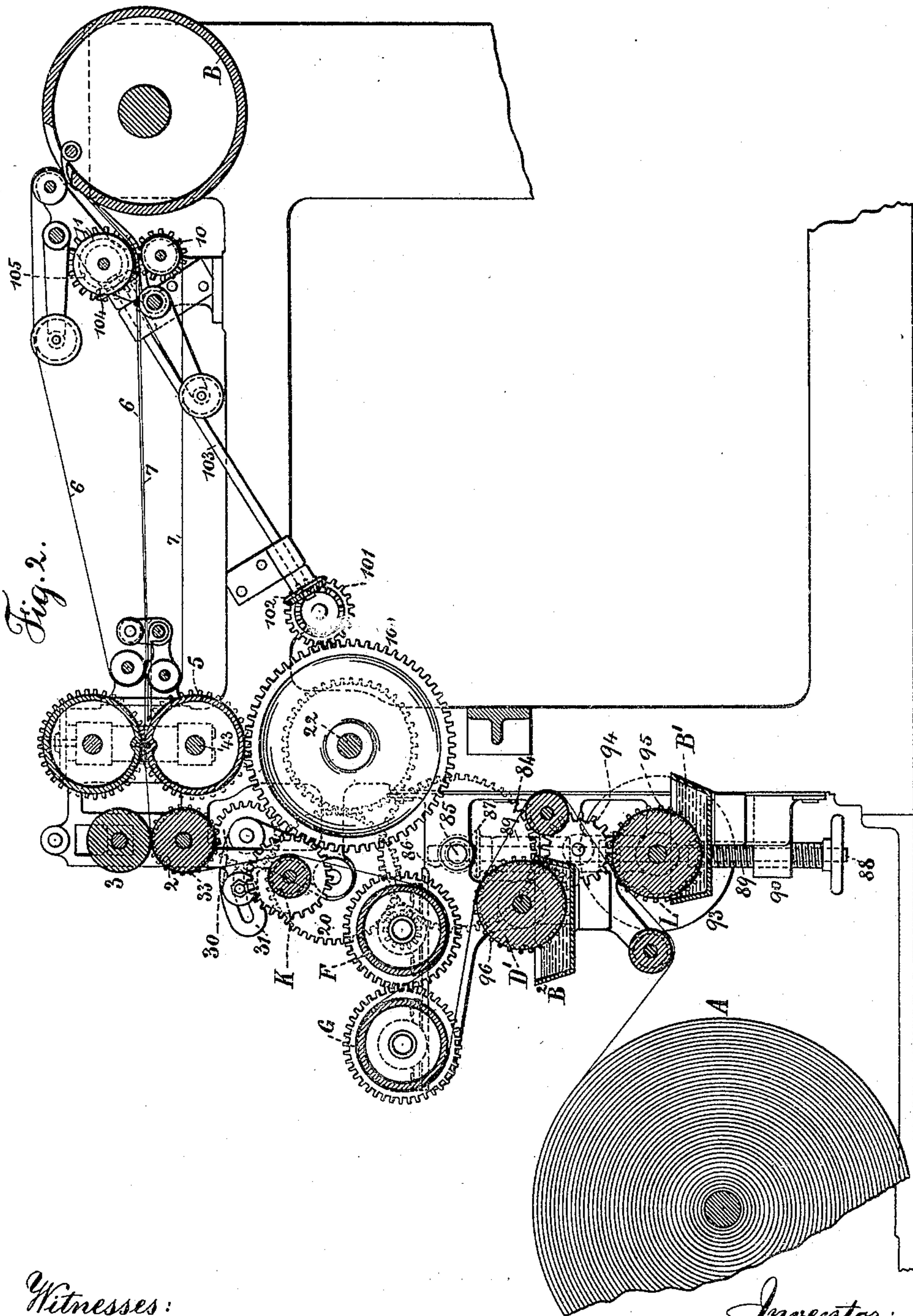
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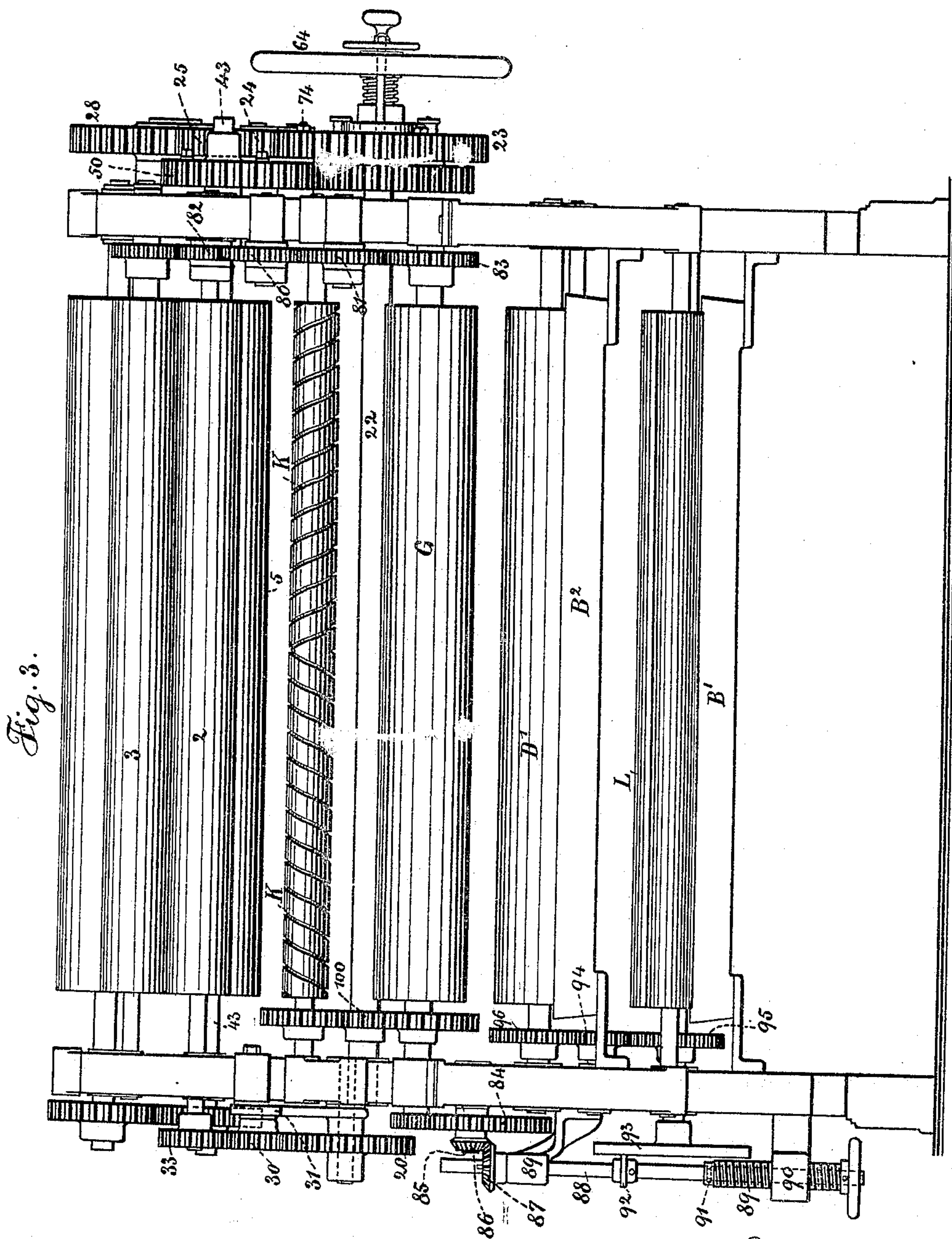
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# UNITED STATES PATENT OFFICE.

WALTER SCOTT, OF PLAINFIELD, NEW JERSEY.

DAMPENING AND FEEDING MECHANISM FOR PRINTING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 411,535, dated September 24, 1889.

Application filed March 30, 1888. Serial No. 268,973. (No model.)

*To all whom it may concern:*

Be it known that I, WALTER SCOTT, of Plainfield, in the county of Union and State of New Jersey, have invented an Improvement in Dampening and Feeding Mechanism for Printing-Machines, of which the following is a specification.

In my application No. 205,693, filed June 19, 1886, I have represented feeding-rollers that supply the paper to the cutting mechanism, and these rollers may be driven at a greater or less proportionate speed, so as to supply a longer or shorter sheet of paper into the printing-press, and I have also shown a cutter and gearing for driving that cutter, so that the knife may be moving at the same rate as the sheet of paper, or nearly so, at the time the separation of the sheet from the web takes place.

The object of my present invention is to combine with the aforesaid feeding and cutting mechanism adjustable gearing for driving the rollers that moisten and heat the web of paper at the proper speed in relation to the feeding-rollers, and so that the adjustment of one regulates the speed of the other, and the supply of moisture is also regulated.

In the drawings, Figure 1 is an elevation of the gearing made use of at one side of the press. Fig. 2 is a vertical section longitudinally of the press, showing, also, the gearing at the far side of the press; and Fig. 3 is an end elevation of the press, the paper-roll being removed.

I hereby refer to my application, Serial No. 205,693, for a more detailed description of the construction and mode of operation of the feeding and cutting mechanism, and I have made use of the same letters of reference upon the corresponding parts. The feeding-rollers 2 and 3 receive their motion from the gear-wheel 20 and changeable gear-wheel 33, that gears into the gear 30, that is mounted upon the sector 31, so that a larger or smaller gear-wheel 33 can be introduced to vary the speed of the rollers 2 and 3, as in my aforesaid application.

I make use of water-troughs B' B<sup>2</sup>, with their rollers L and D', that serve to apply moisture to the surface of the web of paper passing away from the roll A to the heating-cylinders F and G, which heating-cylinders

are preferably hollow and each supplied with steam through one of the journals, which is tubular, and the web of paper passes under the cylinder G, up over the same, and down below the cylinder F, and it is then guided by the roller K as it passes up to the feeding-rollers 2 and 3.

The water-troughs, rollers, and heating-cylinders are similar to those represented in my application, Serial No. 251,871, filed October 10, 1887, and in order to drive the cylinders F and G and feed the paper at the proper rate I make use of two wheels 80 and 81, the wheel 80 gearing into the wheel 82 on the roller 2 and the wheel 81 meshing with the gear 83 upon the shaft of the roller F, so that the surface speed of the roller F will correspond to the surface speed of the roller 2, regardless of the speed at which such roller 2 and the roller 3 may be moving in feeding in the paper.

The heating-cylinders F and G are geared together, and there is a pinion on the shaft of the roller F, which gears into the wheel 84 upon the gudgeon 85, and there is a bevel gear-wheel 86, that gives motion to the similar wheel 87 upon the vertical shaft 88, and this bevel-gear 87 is supported in the bearing 89, and the shaft 88 is free to slide through this bevel-gear 87, there being a feather or key for rotating the shaft and for allowing the said shaft to be moved endwise. The lower end of this shaft 88 is received into a tubular screw 89, which screw passes through the bearing 90 upon the frame of the machine, and there is a pin 91 passing through the upper part of the tubular screw and into a groove around the shaft 88, thus connecting the screw to the shaft, but allowing the latter to rotate.

Upon the shaft 88 there is a friction-pinion 92, preferably having a central collar of india-rubber or leather that rests against the face-wheel 93, and this face-wheel 93 is upon the shaft of the wetting-roller L, so that by raising or lowering the shaft 88 the friction-pinion 92 will be nearer to or farther from the shaft of the roller L, and thereby drive the same at a greater or less speed and supply more or less water to the web of paper as it is drawn in contact with the surface of this wetting-roller L, and the intermediate gear 94 between the gears 95 and 96 upon the



shafts of the wetting-rollers L and D', respectively, causes such wetting-rolls L and D' to travel at the same speed and thereby to apply an equal amount of moisture to the opposite surface of the web of paper, and in consequence of the motion given to the wetting-rollers being received from the feeding-rollers 2 and 3 a uniform quantity of moisture will be supplied to the web of paper regardless of the adjustment of the feed-rollers for longer or shorter sheets of paper.

The mechanism made use of for varying the speed of the cutting-knife, so that it may correspond to the speed of the web of paper at the moment the same is cut, does not require to be described herein, and I remark that the connections from the impression-cylinder B through the gears 28 27 26 25 24 23 to the shaft 22 and the adjustment of the gear 23 by the bolts 74 remain unchanged; but instead of driving the belts 6 and 7 by gearing that receives its motion from the gear-wheel 26, I give to the said belts 6 and 7 their movement from the shaft 22 by the mechanism represented, but which forms the subject of a division of this application.

The web of paper, after being dampened, passes in contact with the roll K, that is grooved with right and left hand helical grooves from the center toward the respective ends, and this roll may be loose and turn by the contact therewith of the paper, or it may be revolved at a slightly faster or slower speed than the paper. In any case the movement of the paper is either greater or less than that of the roll, and the diverging grooves are in such a direction as to act to smooth out the paper by spreading it widthwise for the removal of any wrinkles resulting from the moisture applied to the paper or wrinkles that may exist in the roll of paper, and this grooved roll K, acting to smooth out the paper of the web before it reaches the cutting-rolls, insures a straight and uniform cut of the paper, regardless of the devices that feed the paper into the press.

The present invention relates especially to the devices directly connected with the dampening and feeding of the paper, and my application, Serial No. 300,939, filed February 23, 1889, relates to the devices between the press and the cutting-cylinder and the gearing and connections therewith employed; hence in the present application I lay no claim to the devices for forwarding the paper into the press,

nor to the adjustable connections between the printing and cutting mechanism.

I claim as my invention—

1. The combination, with the feeding-rolls and the changeable gearing for varying the speed of such rolls, of a dampening-roll and connecting-gearing between the feeding-rolls and the dampening-roll for supplying to the paper the proper quantity of moisture regardless of the speed with which the paper is passed into the press, substantially as set forth.

2. The combination, with the feeding-rolls and a dampening-roll and heating-roll, of gearing connecting the dampening and the heating roll with the feeding-rolls, whereby the heating and feeding rolls are caused to move at the same surface speed, and changeable gearing between the feeding-rolls and the press for varying the length of sheet fed into the press at each revolution of the same, substantially as set forth.

3. The combination, with the dampening-rolls and the gearing connecting the same, of a face-wheel upon the shaft of one of the dampening-rolls, a revolving shaft crossing such face-wheel, a friction-pinion upon said shaft, and an adjusting-screw for moving the shaft and friction-pinion nearer to or farther from the axis of the face-wheel for regulating the speed of the dampening-roll, substantially as set forth.

4. The combination, with the dampening-roll L and face-wheel 93, of the shaft 88 and gearing for revolving the same, a friction-pinion upon the said shaft and in contact with the face-wheel, a tubular screw 89, and connection for moving the shaft 88 endwise and varying the position of the friction-pinion upon the face-wheel, substantially as set forth.

5. The combination, with the dampening-roll and the face-wheel, of a shaft crossing the face-wheel, supports for such shaft, and a pinion upon said shaft, and adjusting mechanism for varying the position of the pinion on the face-wheel and regulating the quantity of water supplied to the paper, substantially as specified.

Signed by me this 15th day of March, 1888.

WALTER SCOTT.

Witnesses:

GEO. T. PINCKNEY,  
WILLIAM G. MOTT.