

(No Model.)

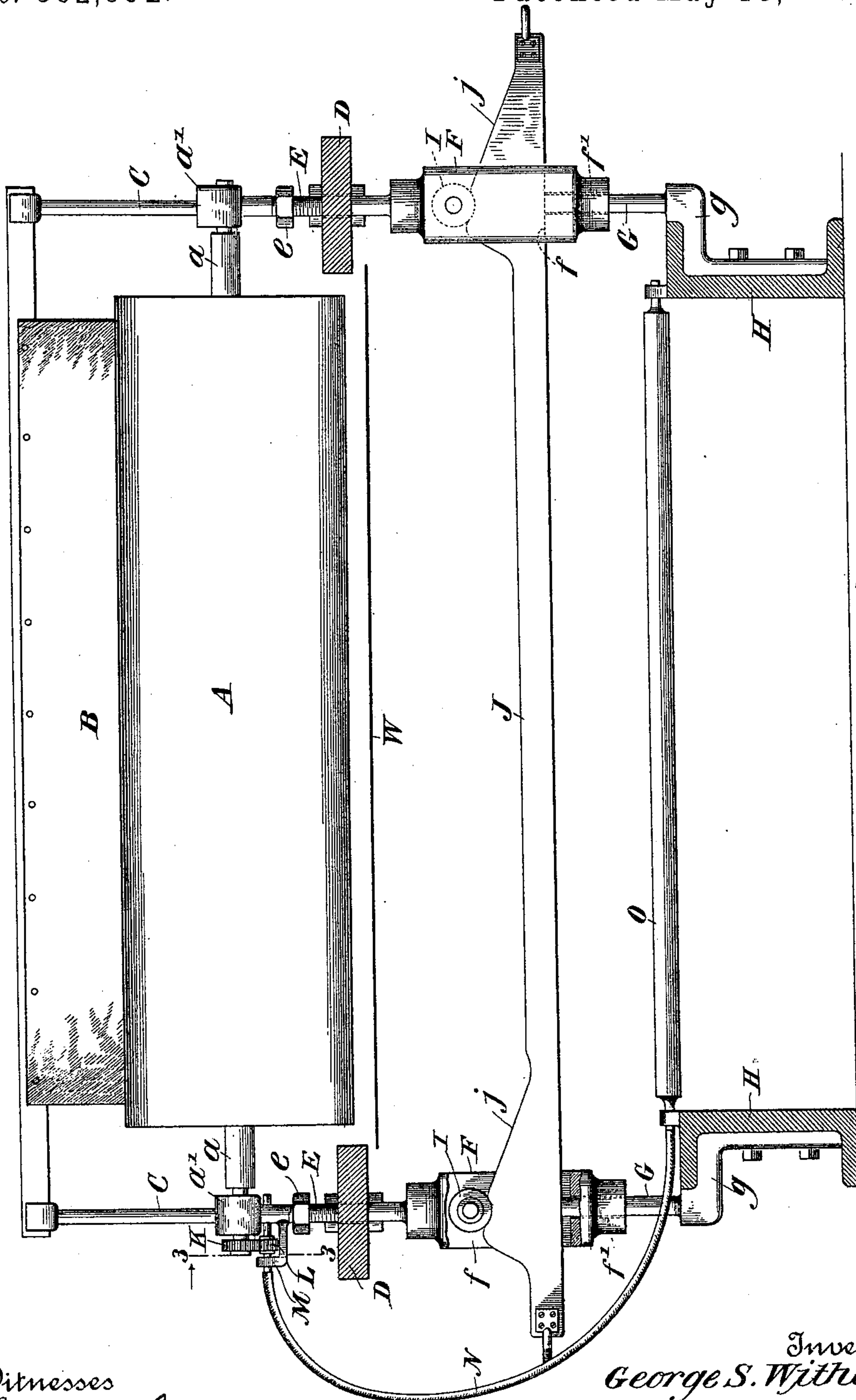
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G. S. WITHAM.
PAPER MAKING MACHINE.

No. 582,802.

Patented May 18, 1897.

Fig. 1.



Witnesses

J. M. Withered
E. A. Balloch.

Inventor
George S. Witham.

By his Attorneys,

Baldern, Davidson & Wright

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Fig. 3.

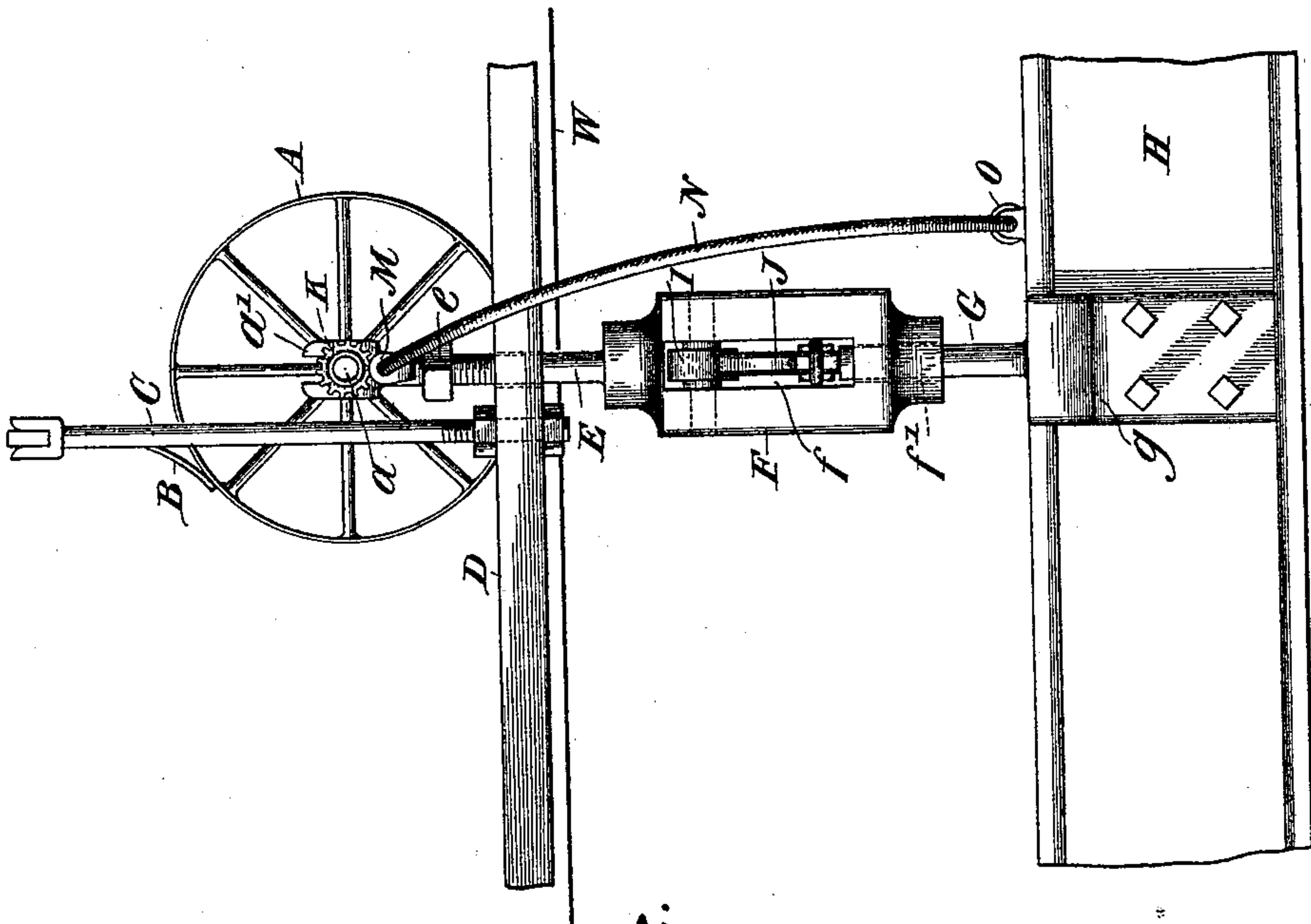
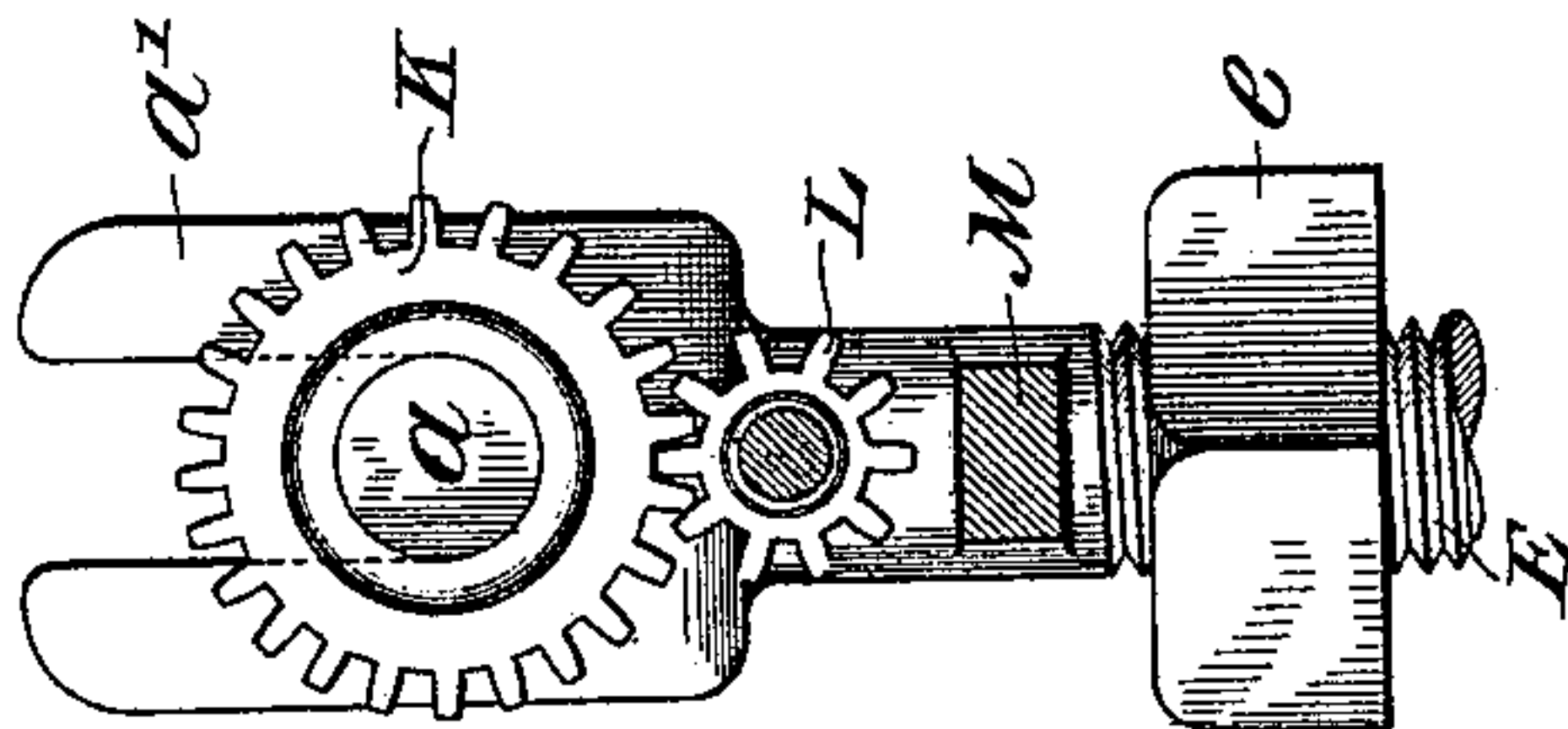


Fig. 2.

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Inventor,
George S. Witham,
By his Attorneys,
Waldron, Davidson & Wright.

UNITED STATES PATENT OFFICE.

GEORGE S. WITHAM, OF OCONTO FALLS, WISCONSIN, ASSIGNOR OF ONE-HALF TO EDWARD A. EDMONDS, OF SAME PLACE.

PAPER-MAKING MACHINE.

SPECIFICATION forming part of Letters Patent No. 582,802, dated May 18, 1897.

Application filed January 20, 1897. Serial No. 619,846. (No model.)

To all whom it may concern:

Be it known that I, GEORGE S. WITHAM, a citizen of the United States, residing at Oconto Falls, in the county of Oconto and State of Wisconsin, have invented certain new and useful Improvements in Paper-Making Machines, of which the following is a specification.

The object of my invention is to provide improved means for lifting, lowering, and operating the dandy-rolls of paper-making machines. Such rolls as commonly used have no special means for raising and lowering them, but are lifted and lowered by hand, and unless this is done with great care and skill the web of paper with which the roll comes in contact is generally broken, and much time is lost and there is often great waste of the paper web. Special apparatus has been patented for lifting, lowering, and operating dandy-rolls, but so far as I am aware such apparatus has not gone into use, and it differs from my invention, which comprehends improved means for readily and evenly lifting and lowering the dandy-roll and improved means for rotating the dandy-roll while out of contact with the web.

According to my invention I mount the roll in bearings which slide vertically in suitable supports and which are provided with rollers resting on inclines, which, when moved horizontally, cause the dandy-roll to rise or fall evenly and uniformly from end to end. I provide also gearing connected by flexible shafting with the main gearing of the machine, which imparts to the dandy-roll a rotary movement, so that when it is lowered into contact with the paper web it shall move at a speed corresponding with the rate at which the web moves and therefore avoids the danger, incident to other machines, of breaking the web.

In the accompanying drawings, Figure 1 is a side elevation of a dandy-roll and the accompanying mechanism equipped with my improvements, some of the parts being in section. Fig. 2 is an end elevation of the roll and some of the parts connected therewith. Fig. 3 is a detail view, on an enlarged scale, of part of the gearing for operating the dandy-roll.

The dandy-roll A may be of any approved construction and it may be provided with a wiper B, which may be mounted on a frame C, secured to the frame-bars D of the machine. The axle *a* of the roll may be mounted in open bearings *a'*, formed at the upper ends of rods or standards E, which extend through the frame-bars D and are free to move up and down therein. At their lower ends these bars are connected with castings F, which are slotted at *f*, as shown particularly in Fig. 2, and at their lower ends are perforated at *f'* to receive the upright bars G, which are secured, by means of their extensions *g*, to the frame-bars H.

The castings F are adapted to move vertically on the bars G as guides. These castings are provided with rollers I within and near the upper ends of the slots *f*, and beneath these rollers is arranged a horizontally-sliding bar J, having inclined surfaces *j* at its opposite ends arranged directly beneath the rollers. This frame-bar may be provided with handles at its opposite ends, so that it may be moved back and forth across the upper edges of the guide-bars G. The bar J is so shaped that when it is moved to the left, as viewed in Fig. 1, it will allow the supports of the dandy-roll to drop, and the dandy-roll will move downward toward and onto the web of paper, indicated at W.

It will be readily understood from an inspection of Fig. 1 how the roll may be raised and lowered by a transverse or horizontal movement of the bar J.

The axle of the dandy-roll is provided at one end with a pinion K, which meshes at times with a pinion L, mounted in bearings in a bracket M, secured to one of the standards which support the roll. This pinion is connected by a flexible shaft N to a roller O, which may be driven by the return portion of the usual wire belt or to any other part of the machine moving at a uniform rate, and the gearing is such that it will drive the dandy-roll at a speed corresponding with the speed of the paper web W. The rods E are screw-threaded, as shown, and provided with nuts *e*, which may be adjusted to limit the up-and-down movement of the dandy-roll supports. They should be so adjusted that

when the supports are lowered the dandy-roll will leave the open bearings and rest upon the paper web, while the nuts *e*, which support the bearings, will rest upon the frame-bars D, the pinions K and M being thus separated and the dandy-rolls being driven in the usual way by the paper web itself.

I claim as my invention—

1. In a paper-making machine the combination of a dandy-roll, its supports, means for raising and lowering these supports, means for driving the dandy-roll while it is lifted, and means for disconnecting it from said driving means when it is lowered and in contact with the paper web.

2. In a paper-making machine, the combination of the dandy-roll, its supports, gearing connected with the axle of the dandy-roll, and flexible shafting connecting this gearing with a driven part of the paper-making machine.

3. In a paper-making machine the combination of the dandy-roll, its open bearings, the castings to which the bearings are connected, rollers carried by these castings, a horizontally-moving bar having inclined surfaces engaging the rollers for lifting and lowering the dandy-roll, gearing for driving the dandy-roll while it is lifted, and means for disconnecting the dandy-roll from said driv-

ing means when it is lowered and in contact with the paper web.

4. In a paper-making machine, the combination of the dandy-roll, a pinion secured to its axis, another pinion gearing with the first-mentioned pinion, and a flexible shaft connected with the last-mentioned pinion and connected with a moving part of the machine.

5. In a paper-making machine, the combination of the dandy-roll, its bearings, slotted castings connected with the bearings, rollers carried by the castings, a horizontally-moving bar having inclined surfaces on which the rollers rest, a pinion secured to the axle of the dandy-roll, another pinion engaging therewith, and a flexible shaft connecting said last-mentioned pinion with a moving part of the machine.

6. In a paper-making machine, the combination of the dandy-roll, means for raising and lowering it, and a flexible shaft connecting the axle of the dandy-roll with a moving part of the machine.

In testimony whereof I have hereunto subscribed my name.

GEO. S. WITHAM.

Witnesses:

W. L. EDMONDS,

E. H. BACON.