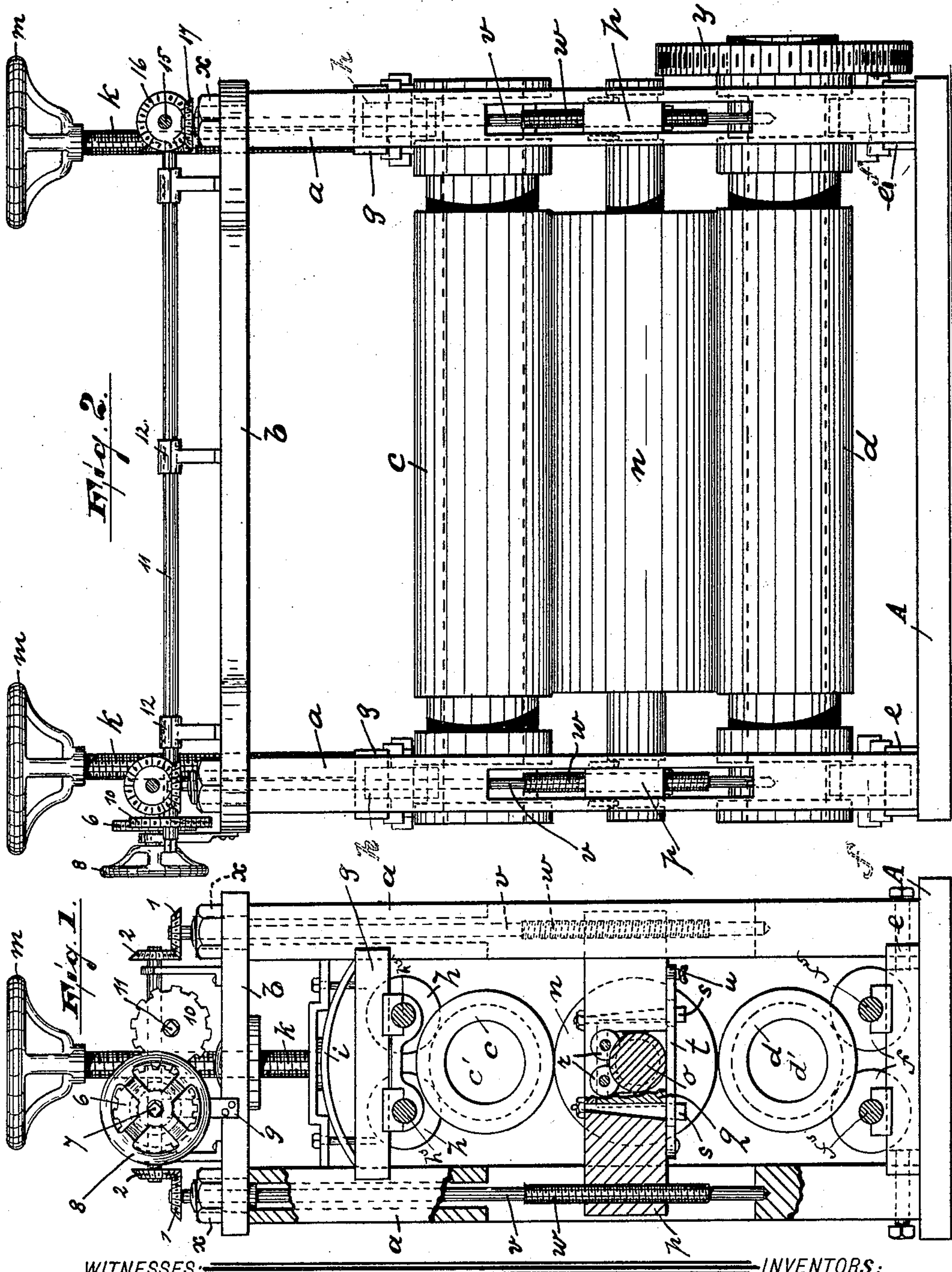


(No Model.)

2 Sheets—Sheet 1.

G. THOMMEN & G. ROTHENBÜCHER.
MACHINE FOR WATERING AND FINISHING SILK OR OTHER FABRICS.
No. 497,360. Patented May 16, 1893.



WITNESSES:

Wm. D. Bell.
D. Robertson.

INVENTORS:

Gustave Thommen
George Rothenbücher

BY

Partner & Co

ATTORNEYS

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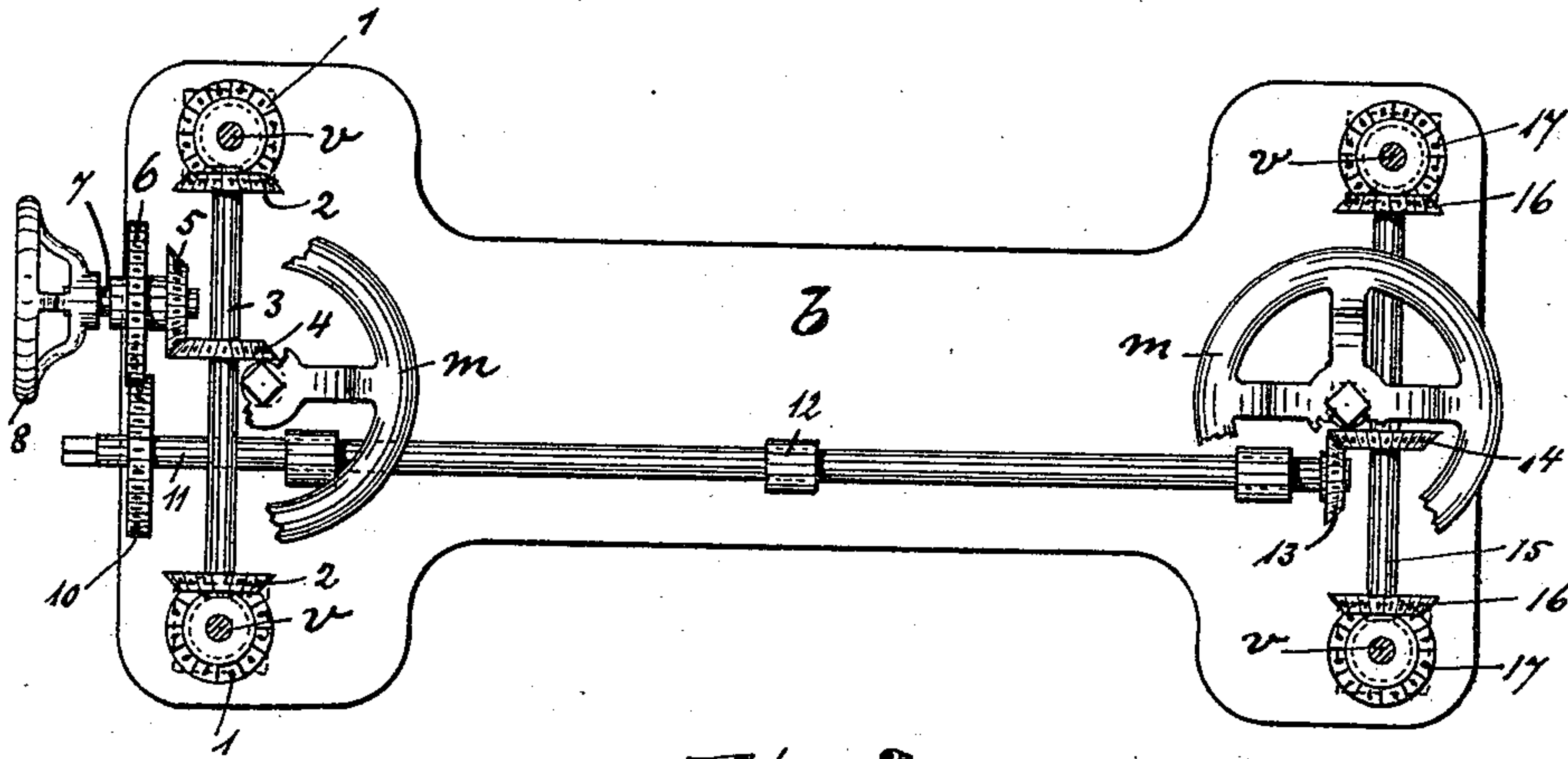


Fig. 3.

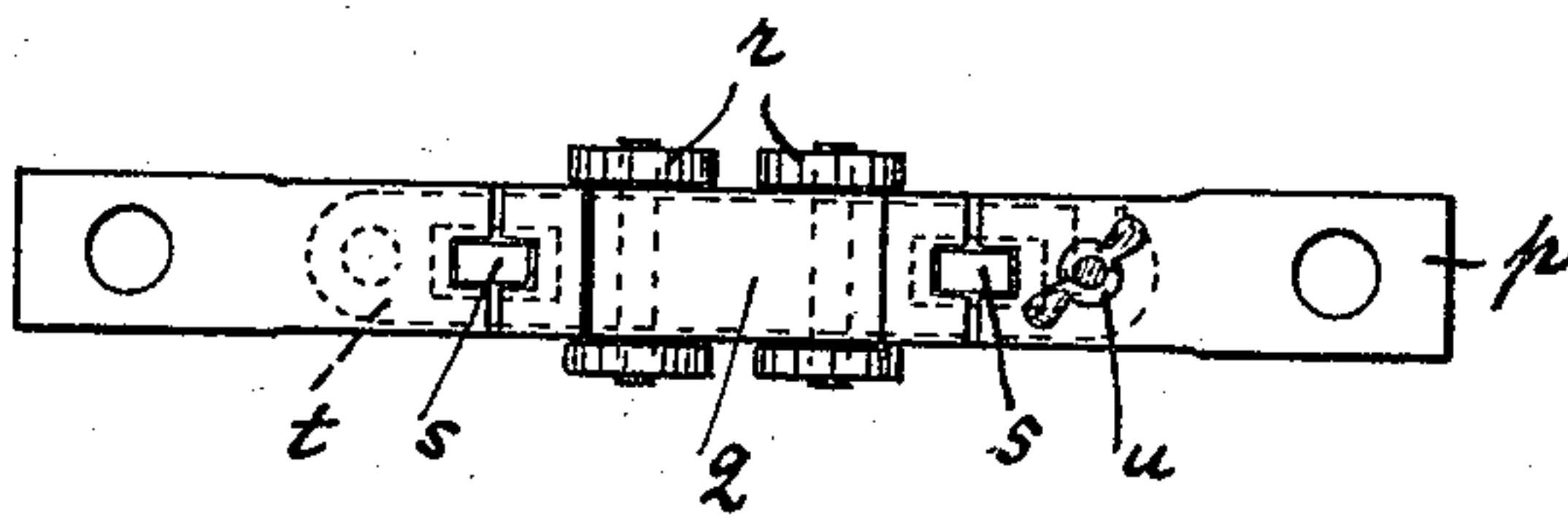


Fig. 4.

WITNESSES:

Wm. D. Bell.
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INVENTORS

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UNITED STATES PATENT OFFICE.

GUSTAVE THOMMEN, OF PATERSON, NEW JERSEY, AND GEORGE ROTHEN-
BÜCHER, OF NEW YORK, N. Y.

MACHINE FOR WATERING AND FINISHING SILK OR OTHER FABRICS.

SPECIFICATION forming part of Letters Patent No. 497,360, dated May 16, 1893.

Application filed August 3, 1892. Serial No. 442,023. (No model.)

To all whom it may concern:

Be it known that we, GUSTAVE THOMMEN, residing at Paterson, county of Passaic, and State of New Jersey, and GEORGE ROTHEN-
BÜCHER, residing in the city, county, and State of New York, citizens of the United States, have invented certain new and useful Improvements in Machines for Watering and Finishing Silks or other Fabrics; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters and figures of reference marked thereon, which form a part of this specification.

The object of this invention is to provide a watering and finishing machine for silk or other fabrics, simple and durable in construction, easily handled and reliable in operation.

The invention consists in the improved watering and finishing machine, its roller depressing and operating device, and the combination and arrangements of the various parts thereof, substantially as will be hereinafter more fully described and finally embodied in the clauses of the claim.

Referring to the accompanying drawings, in which like letters of reference indicate corresponding parts, in each of the several views: Figure 1. is a side elevation of our improved finishing machine, part of it being shown in section. Fig. 2. is a front elevation of Fig. 1, with certain parts removed. Fig. 3. is a top plan view of the roller operating mechanism, and Fig. 4. is a detail view of the center roller bearing and its adjusting mechanism.

In said drawings A represents the bed plate, to which are secured four vertical posts *a*, connected at their upper ends by a plate *b*. In each of said posts is arranged a vertical spindle *v*, provided at or near its center with a screw or worms *w*, adapted to operate in an internally threaded hole arranged in a guiding block *p*. Each guiding block is again provided with a tapering opening, in which is adjustably secured—by tapered keys *s* and locking plate *t*—a smaller block *q*, carrying

the shafts of the friction rollers *r*. Each block *q* is also provided with a recess, in which operates the shaft *o*, to which is secured the roller *n*, made out of paper or any suitable material, and which roller is provided on its surface with very narrow and fine corrugation lines, arranged longitudinal and parallel with shaft *o*. The friction rollers *r* operate in a groove arranged in said shaft *o*, as clearly shown in Fig. 1. of the drawings. The locking plate *t* is adjustably secured to the block *p*, by thumb screw *u*, or in any desired manner. Bearing against said roller *n* are arranged the metal cylinders *c* and *d*, provided with cylindrical openings *c'*, *d'*, adapted to receive the burners or gas jets, as will be manifest. Said rollers are also provided on their surfaces with very fine and narrow, longitudinally arranged, corrugation lines. The lower cylinder *d* is provided at or near each end with an annular groove, in which operates the friction wheels *f*, secured to spindles, *f*⁵ arranged in block *e*. The upper cylinder *c* is also provided with corresponding grooves, receiving the friction wheels *h*, which are secured to spindles, *h*⁵ arranged on adjusting block *g*, guided in frame *a*, and provided at its top with a spring bearing *i*. A screw *k* engages said bearing, and is operated in top plate *b*, by means of hand wheel *m*.

To the top of the spindles *v*, at the left hand side of the machine (Figs. 2 and 3), and above their bearings *x* are secured beveled gear wheels 1, adapted to engage beveled gear wheels 2 secured to shaft 3. Said shaft is also provided with a beveled gear wheel 4, meshing into beveled gear wheel 5 on shaft 7, the latter carrying the hand wheel 8 and gear wheel 6. Said gear wheel (6) transmits its motion to shaft 11, through gear wheel 10. The shaft 11 is supported in bearings 12, and is provided at its rear end with a beveled gear wheel 13, meshing into beveled gear wheel 14 on shaft 15. To the latter (shaft 15) are also secured beveled gear wheels 16, engaging the beveled gear wheels 17, secured to the top of the spindles *v*, on the right hand side of the machine (Figs. 2 and 3). The wheel 10 is so arranged on its shaft 11, that it can be thrown in or out of gear which is accomplished by

sliding said wheel 10 back or forward on said shaft, either by hand, or by any well known clutch or wheel shifting mechanism. The hand wheel 8 can be removed from its shaft 7 and be placed on the squared portion of shaft 11. When the wheels 6 and 10 are out of gear, the shafts 7 and 11 controlling the front and rear guiding blocks *p* (carrying roller *n*) can be operated independently, as will be manifest. The various gear connections are so arranged, that by turning the hand wheel 8, the blocks *p* on both sides of the machine are raised or lowered simultaneously.

The operation of the machine is as follows: The rollers *c* and *d* are heated to a certain degree, when the moistened silk ribbon or fabric is inserted and passed between the rollers *c*, and *n*. By the heat of said rollers the moisture in the fabric evaporates and simultaneously the fine corrugation lines on the surface of said rollers, produce the watering lines or impressions on said fabric. The lower roller *d* assists the upper roller *c* in keeping the center roller *n* heated. Great care has to be taken, that the pressure on the rollers *c*, *n* and *d* throughout their entire length, is kept uniform. The pressure of the top roller *c*, is regulated by the hand wheel *m*, as in the usual manner. The pressure of the center roller *n*, on the bottom roller *d*, is regulated uniformly, by operating the various gear connections through hand wheel 8. Should the pressure on the rollers *c*, *n* and *d*, be not uniform throughout their entire length, either side of the center roller (*n*) can be raised or lowered independently, by throwing the wheels 6 and 10 out of gear, and by operating the shafts 7 and 11 respectively. By a slight lateral motion of shaft *o*, the roller *n* may be adjusted to a true plane with rollers *c* and *d*. Said lateral motion is imparted to the shaft carrying blocks *q*, by drawing up or raising the keys *s* on one side of each block and by slackening off or lowering the keys on the other side of said blocks, as will be manifest. By this specially constructed finishing machine, a uniform gloss on both sides of the fabric is obtained.

We do not intend to limit ourselves to the construction shown and described, as various alterations can be made, without changing the scope of our invention.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a finishing machine, the combination with the frame, the top plate, the cylinders, the roller and the roller shaft, of a bearing and guiding block arranged at each end of said roller shaft, and provided with internally threaded openings, a spindle arranged

at each end of said guiding blocks, and provided with a screw or worm, adapted to engage said openings, and means for operating said spindles simultaneously, all said parts substantially as described and for the purposes set forth.

2. In a finishing machine, the combination with the frame, the top plate, the cylinders, the roller and the roller shaft, of a guiding block arranged at each end of the roller shaft and provided with a tapering opening, a block arranged adjustably in said opening and provided with a recess, adapted to receive the shaft of said roller, friction wheels arranged in said blocks and adapted to operate in annular grooves of said shaft, tapered keys arranged in the tapering opening of the guiding blocks and adapted to control the lateral motion of the shaft carrying blocks, and a locking plate, adjustably secured to the guiding block, all said parts substantially as described and for the purposes set forth.

3. In a finishing machine, the combination with the frame, the top plate, the cylinders, the roller and the roller shaft, of a bearing and guiding block arranged at each end of the roller shaft, and provided with internally threaded openings, a spindle arranged at each end of said guiding blocks and provided with a screw or worm, adapted to engage said openings, a beveled gear wheel secured to the top of each spindle, gear wheels meshing into said beveled gear wheels, a shaft arranged at each end of the machine and adapted to support said gear wheels, means for operating one of said shafts, and means for transmitting the motion from said shaft to the other, all said parts substantially as described and for the purposes set forth.

4. In a finishing machine, the combination with the frame, the top plate, the cylinders, the roller and the roller shaft, of a bearing and guiding block arranged at each end of the roller shaft, and provided with internally threaded openings, a spindle arranged at each end of said guiding blocks and provided with a screw or worm, adapted to engage said openings, a beveled gear wheel secured to the top of each spindle, gear wheels meshing into said beveled gear wheels, a shaft arranged at each end of the machine and adapted to support said gear wheels, and means for operating said shafts, all said parts substantially as described and for the purposes set forth.

In testimony that we claim the foregoing we have hereunto set our hands this 30th day of July, 1892.

GUSTAVE THOMMEN.
GEORGE ROTHENBÜCHER.

Witnesses:

ALFRED GARTNER,
WALTER THOMPSON.