

No. 607,150.

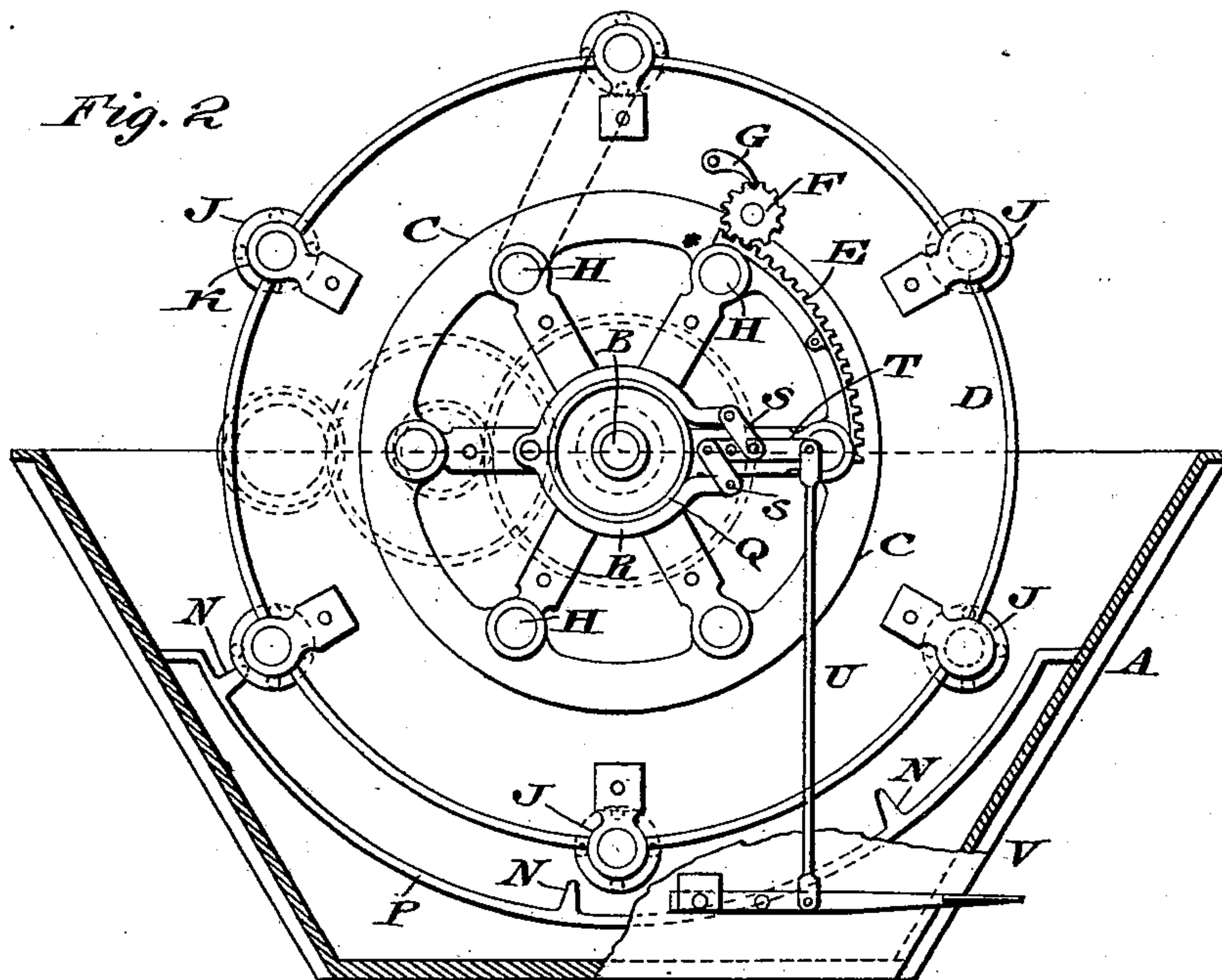
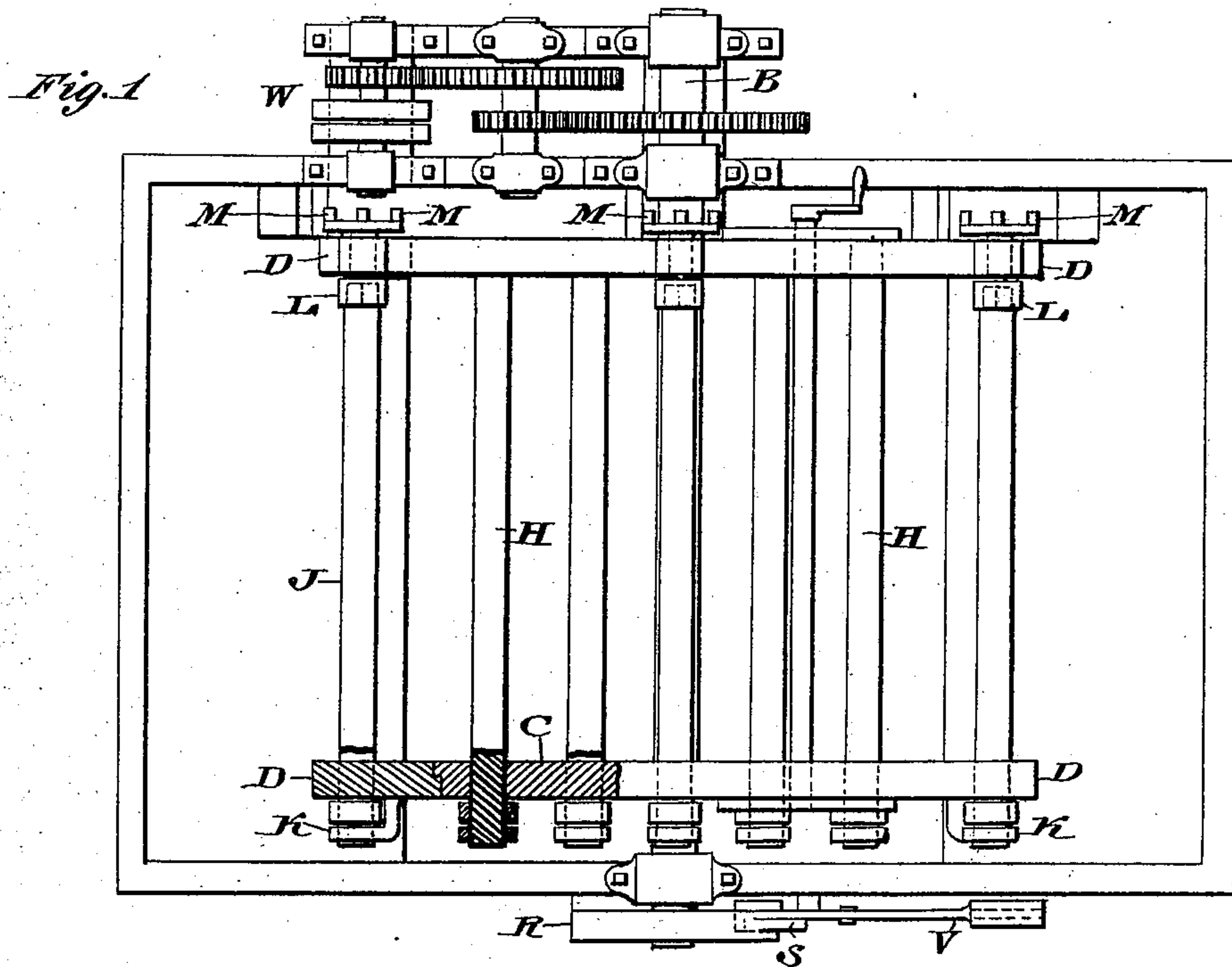
Patented July 12, 1898.

C. L. WEICHELT, W. S. GRADY & A. JONES.

MACHINE FOR MERCERIZING YARN.

(Application filed Feb. 21, 1898.)

(No Model.)



Witnesses:

P. F. Bagley.  
L. Rouville.

BY

Inventors  
Charles L. Weichelt,  
William S. Grady,  
Arthur Jones  
Wiedersheim & Fairbanks  
ATTORNEYS.



# UNITED STATES PATENT OFFICE.

CHARLES L. WEICHELT, WILLIAM S. GRADY, AND ARTHUR JONES, OF  
PHILADELPHIA, PENNSYLVANIA.

## MACHINE FOR MERCERIZING YARN.

SPECIFICATION forming part of Letters Patent No. 607,150, dated July 12, 1898.

Application filed February 21, 1898. Serial No. 671,007. (No model.)

*To all whom it may concern:*

Be it known that we, CHARLES L. WEICHELT, a subject of the Emperor of Germany, and WILLIAM S. GRADY and ARTHUR JONES, citizens of the United States, residing in the city and county of Philadelphia, State of Pennsylvania, have invented a new and useful Improvement in Yarn-Mercerizing Machines, which improvement is fully set forth in the following specification and accompanying drawings.

Our invention relates to a machine for mercerizing yarn, &c.; and its object is to construct such machine whereby it is simple, economical, and efficient and in which the yarn or material being mercerized may be subjected to tension sufficiently strong to avoid or overcome shrinking, the construction of parts being hereinafter described, and the novel features pointed out in the claims that follow the specification.

Figure 1 represents a plan view of a mercerizing-machine embodying our invention. Fig. 2 represents a side elevation thereof, partly in section.

Similar letters of reference indicate corresponding parts in the figures.

Referring to the drawings, A designates a tank adapted to contain a mercerizing solution, and B designates a rotatable shaft mounted thereon. To said shaft, at opposite sides, are secured the circular heads C C, which rotate therewith. Upon each head C is directly mounted a head D, which is in the same plane, the head D being adapted to move with or independent of said head C, the contiguous faces of the two heads being circumferentially shouldered, so that they may be sustained one on the other and prevented from lateral displacement. One of the heads carries a rack E and the other head a pinion F, which latter meshes with said rack and is adapted to be rotated by a suitable crank-handle, said pinion being engaged by the pawl G on the head D, by which means the two heads may be coupled, so as to revolve as one.

H designates rollers or sticks which are connected with the heads C, and J designates rollers or sticks which are connected with the

heads D, the rollers or sticks extending transversely across the machine.

The rollers H are fixed to the heads C, while the rollers J are mounted on one head D in the bosses K thereon, the opposite ends of said rollers J being squared and fitted in sockets L, which are rotatably mounted on said heads D, the outer ends of said sockets having projecting laterally therefrom the lugs M, which are adapted to engage with the fingers N on the segmental plate P, located within the tank A beneath said lugs.

Q designates a pulley which is keyed or otherwise secured to the shaft B and surrounded by the friction-strap R, the ends of which are connected by the toggles S T with the rod U, to which is attached the treadle V, whereby the strap R may be tightened on the pulley Q and act as a brake therefor.

The operation is as follows: The yarn is hung upon one of the rollers of the head C and one of the rollers of the head D, substantially as shown in dotted lines in Fig. 2, and the other rollers are filled or supplied as desired. The shaft B is rotated by the gearing W or other means, and the heads revolve as one, while the rollers are rotated at intervals by striking the fingers N. After the yarn has been thoroughly wet it will begin to shrink, and to avoid this it must be subjected to tension. This is done by gradually turning the crank-handle to move the rollers of the head C in advance of those of the head D, or vice versa, thus stretching the yarn, when the machine may be stopped and the yarn removed.

It is obvious that the machine above described is capable of change and modification to accomplish the results herein set forth, and we therefore do not limit ourselves to the precise construction herein shown and described, but include therein all known equivalents and substitutions for accomplishing said results.

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

1. In a mercerizing-machine, the combination of a tank adapted to contain mercerizing liquid, a shaft carrying a head, one or more rollers mounted on said head, a second head mounted directly upon said first head and in



the same plane and capable of independent movement thereon, and one or more rollers mounted on said second-named head.

2. In a mercerizing-machine, the combination of a tank, a shaft carrying a head, one or more rollers mounted on said head, a second head mounted directly upon said first head and in the same plane and capable of independent rotation thereon, one or more rollers mounted on said second-named head, and means for controlling said independent rotation of the heads, the contacting faces of the two heads being adapted to be controlled against lateral displacement.

3. In a mercerizing-machine, the combination of a tank, a shaft, a circular head mounted thereon, a circular head mounted directly on said first head and in the same plane and capable of independent movement thereon, a rack and a pinion carried by the respective heads, and a pawl therefor, and one or more rollers or sticks mounted on each head.

4. In a mercerizing-machine, the combination of a tank, a shaft carrying one or more revolving heads in the same plane, rollers or sticks mounted on said heads upon which the material to be mercerized is adapted to be placed, bosses on the heads of one side and sockets mounted in the heads of the opposite

side and having squared openings, the ends of the sticks entering said openings being squared.

5. In a mercerizing-machine, the combination of a tank, a head mounted thereon, one or more rollers carried by said head, a second head mounted upon the first-named head and in the same plane and capable of independent movement thereon, a roller carried by the second-named head, means for controlling said independent movement, sockets carrying the ends of said rollers, lugs on said sockets, and a segmental base-plate in the tank having fingers adapted to be engaged by said lugs.

6. In a mercerizing-machine, a shaft with heads thereon, and rollers or sticks carried by said heads, a pulley on said shaft, a friction-strap around said pulley, toggles connected with said strap and means connected with one member of said toggles for operating the same.

CHARLES L. WEICHELT.  
WILLIAM S. GRADY.  
ARTHUR JONES.

Witnesses:

JOHN MCKEE,  
JOHN A. WIEDERSHEIM.