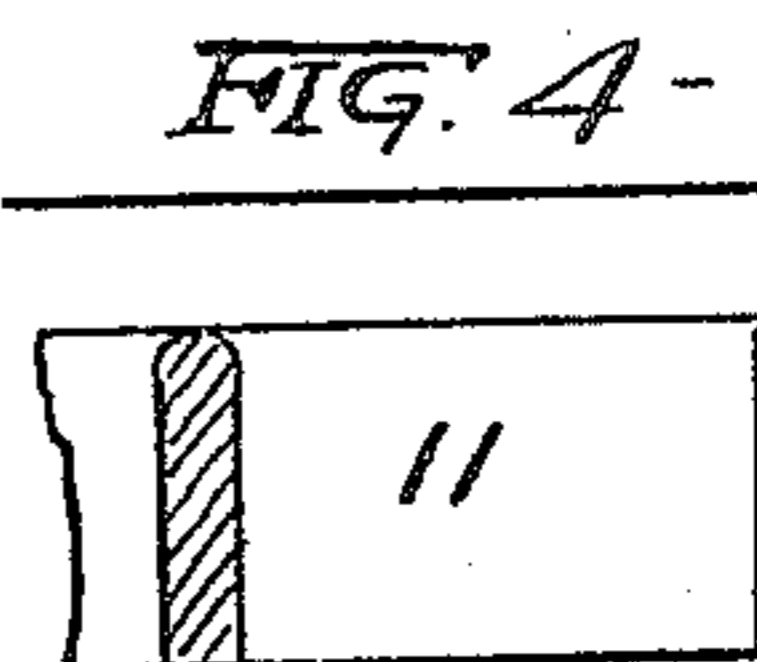
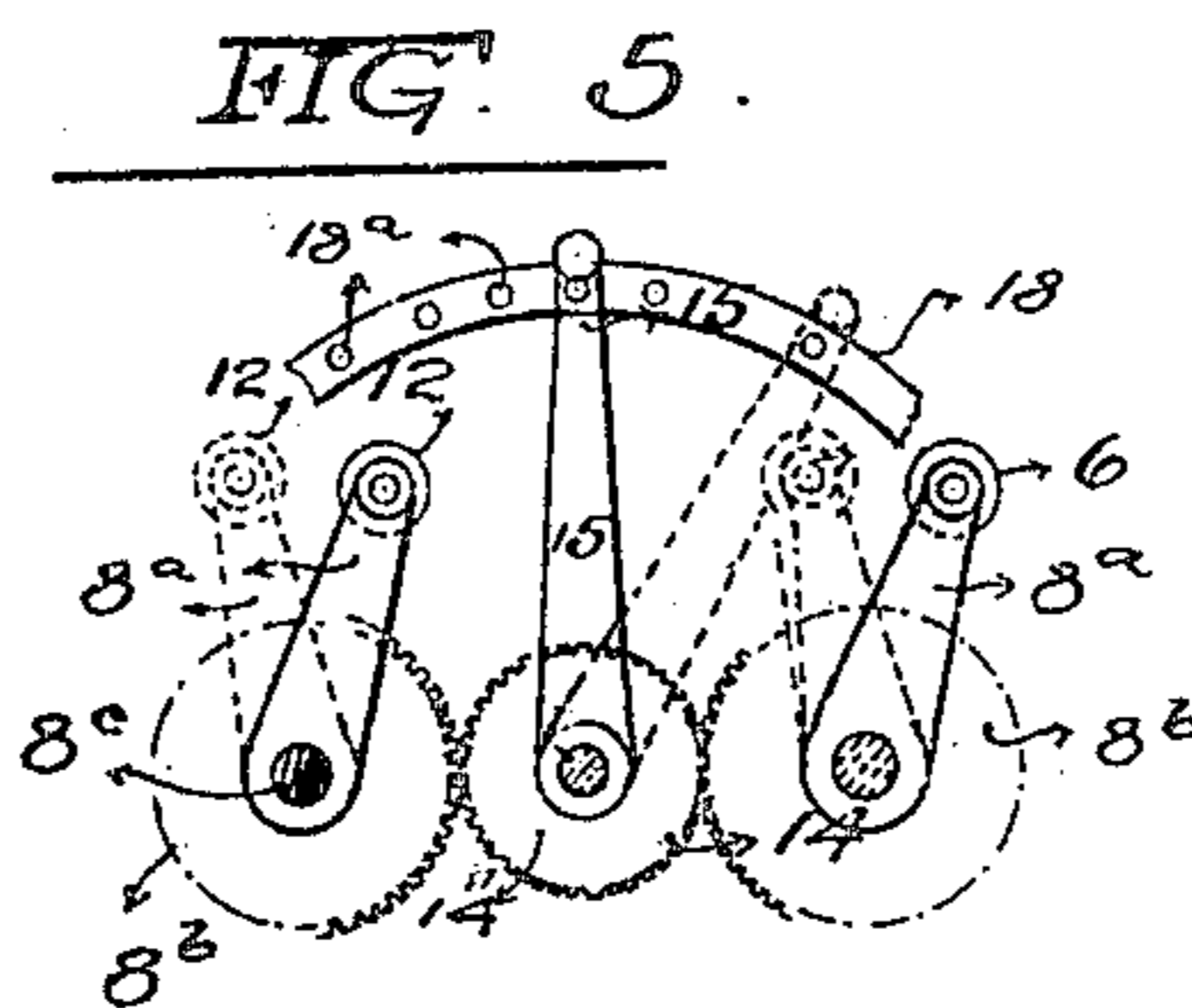
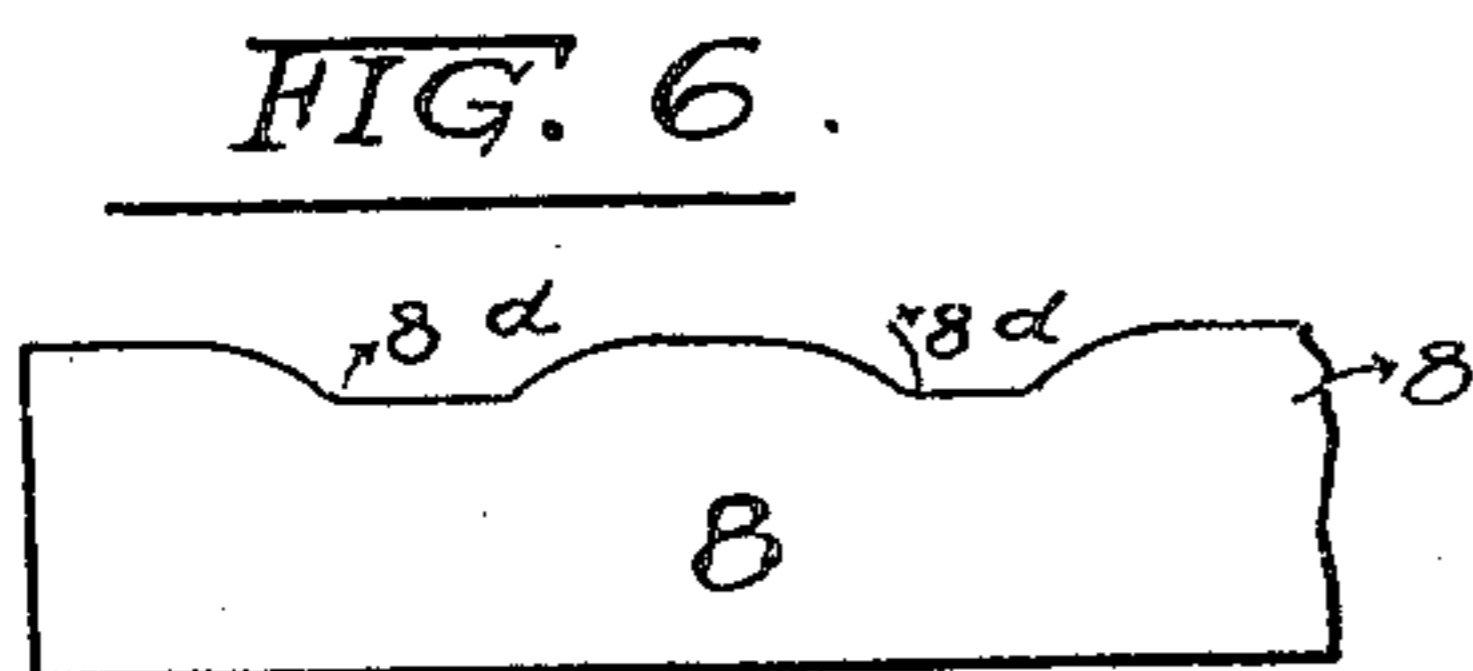
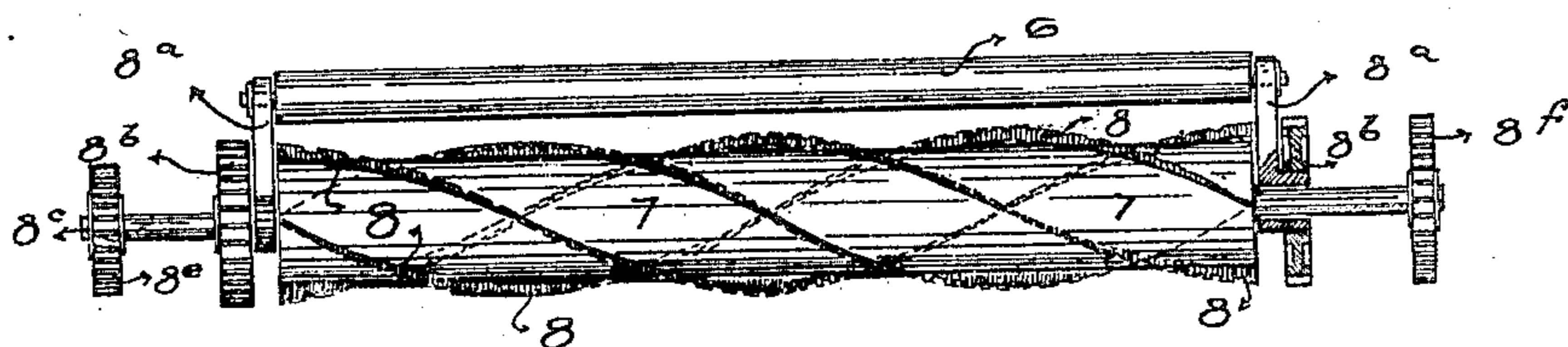
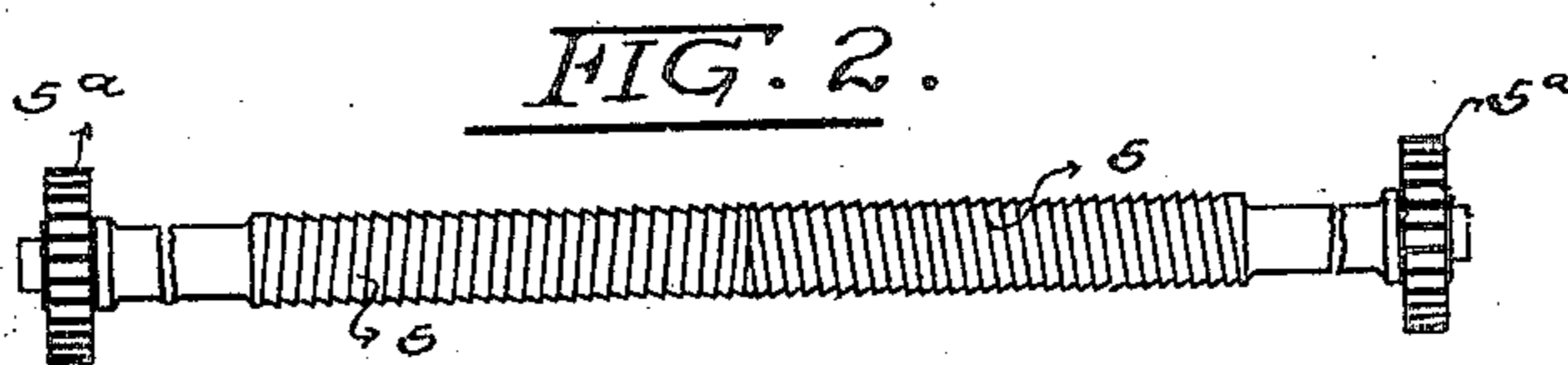
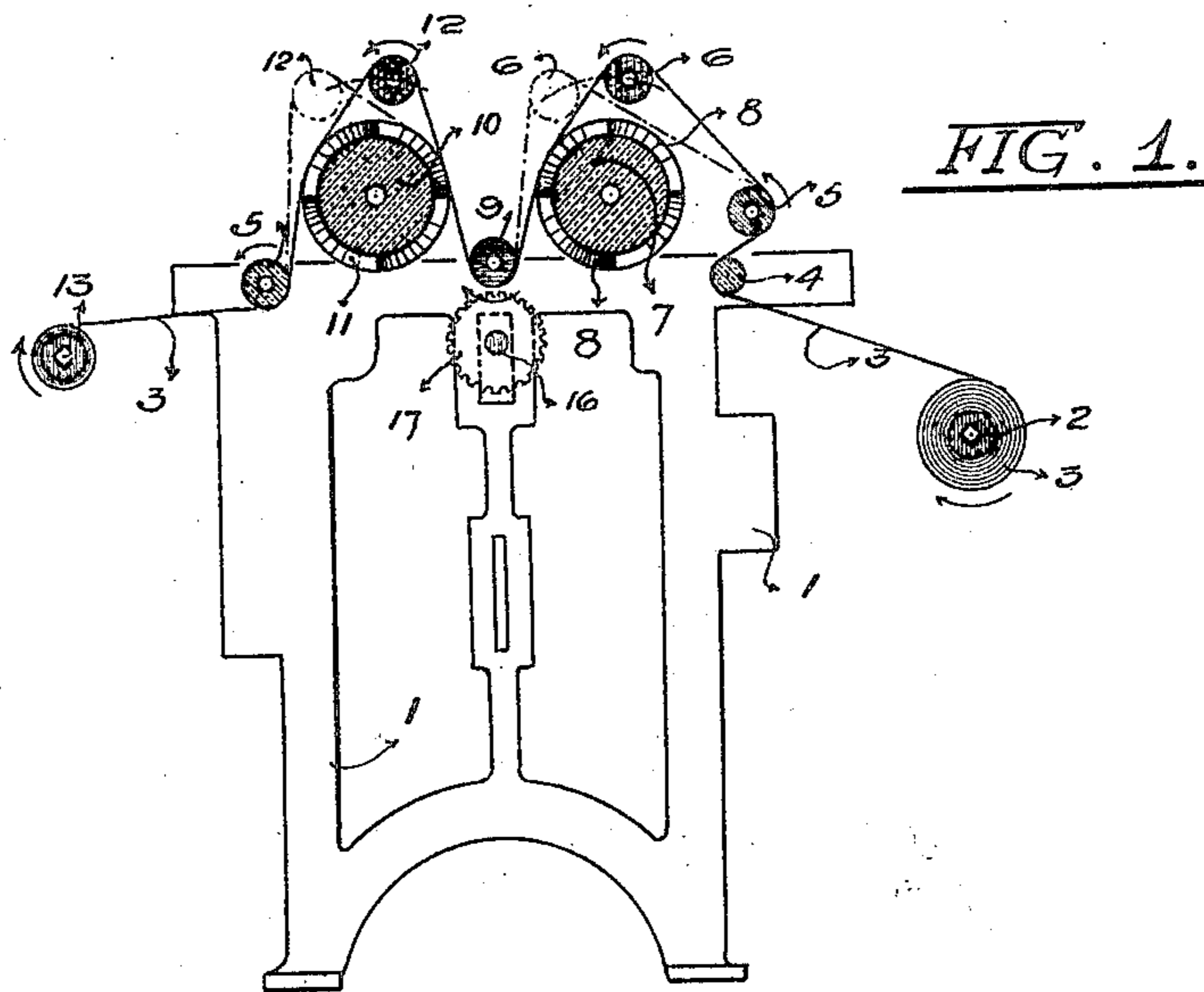


No. 818,434.

PATENTED APR. 24, 1906.

A. GERBER.
RUBBING, BREAKING, AND POLISHING MACHINE FOR SILK
OR SILK MIXED GOODS.

APPLICATION FILED AUG. 8, 1904.



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UNITED STATES PATENT OFFICE.

ALPHONSE GERBER, OF PATERSON, NEW JERSEY.

RUBBING, BREAKING, AND POLISHING MACHINE FOR SILK OR SILK MIXED GOODS.

No. 818,434.

Specification of Letters Patent.

Patented April 24, 1906.

Application filed August 8, 1904. Serial No. 219,875.

To all whom it may concern:

Be it known that I, ALPHONSE GERBER, a citizen of the United States, residing at Paterson, in the county of Passaic and State of New Jersey, have invented certain new and useful Improvements in Rubbing, Breaking, and Polishing Machines for Silk or Silk Mixed Goods, of which the following is a specification, reference being had therein to the accompanying drawings.

My invention relates to improvements in rubbing, breaking, and polishing machines for silk or silk mixed fabrics; and the objects of my improvement are, first, to provide tension-bars rotating in the same direction in which the fabric is passing and means for rapidly and effectually regulating the tension of the fabric as desired; second, to provide knife-carrying rollers that will by reason of the construction and arrangement of the knives materially assist in rubbing, breaking, and polishing the fabric and removing imperfections, and, third, to provide means operated from the main shaft of the machine for spreading the fabric and removing imperfections therefrom while being driven at a greater speed than the fabric, but in the same direction.

A further object of my invention is to provide a new knife of a peculiar construction for such a machine as well as spreaders and polishers that are not stationary nor driven and rotated by the friction of the moving fabric, but which are rotated by other means.

From an economical point of view the object of my invention is to increase production with a great saving in time and cost.

With these considerations in view the present invention aims to make a practical advance in the art to which the invention relates and has as a chief concern better work, increased production, and reduced cost.

I attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a vertical section or skeleton view showing the arrangement of the various rollers, spreaders, knives, and tension device, the mode of operating the same, and how the fabric is passed through and among the said parts of the machine from the supply to the take-up beam. Fig. 2 is an enlarged detail view of one of the commanded or driven spreaders and polishers. Fig. 3 is a detail view of a roller carrying a set of knives having a

wavering, discontinuous, or broken edge portion; Fig. 4, part of a straight-edge knife. Fig. 5 shows the method of operating the tension-rollers; and Fig. 6 is a view of a portion of a knife with broken, wavering, or discontinuous edge.

Similar numerals refer to similar parts throughout the several views.

The numeral 1 indicates the framework of the machine, which carries the main driving-shaft 16, mounted in suitable bearings and having a pinion 17 secured thereto for driving the series of rotated bars and rollers. For the purpose of avoiding confusion intermediary gearing is omitted from the drawings; but the knife-carrying rollers 7 and 10 and the spreading and polishing rollers 5 5 are all driven in the same direction by the main driving-shaft through intermediary gearing. The roller 7 carries four spirally-arranged dull-edged knives 8, each having a discontinuous edge, and the roller 10 has four straight dull-edged knives 11, which are arranged spirally, but in an opposite direction, the arrangement being to the right on one roller and to the left on the other.

On the shafts 8^c of the rollers 7 and 10 are swinging lever-arms 8^a, and on the arms are the gears 8^b. In the outer end of one of said lever-arms is loosely mounted the rotatable tension-roller 6, and a similar tension-roller 12 is located in like manner on the shaft of the knife-roller 10.

In Fig. 6, 8^d represents the lowered portion or recess between the discontinuous edge portions of the knife 8.

The fabric 3 is passed from the beam 2 to the take-up beam 13, passing under the stationary rod 4, thence between it and the roller 5, thence over the tension-roller 6, down under the rotatable rod 9, over the tension-roller 12, under the other spreading and polishing roller 5 and onto the beam 13. Each of the rollers 5 5 is reversely threaded or provided with four spiral threads, which are disposed in two different directions on the rollers, one-half their length to the right and one-half to the left, as shown in Fig. 2. They have secured to their extremities the gears 5^a for driving purposes. The contact between the fabric and the knives of the rollers 7 and 10 and the tension of the fabric is regulated by means of the gear 14, which meshes with the gears 8^b and is turned by the lever 15 to operate the tension-rollers 6 and 12 simultaneously.

taneously. The lever 15 may be secured to any of the positions 18^a to maintain the desired tension.

The action of the rollers 6 and 12, which govern the degree of tension of the material, is not necessarily limited to the extent of movement indicated by the dotted position shown in Fig. 1. Said rollers may be moved farther toward the right or to the left in order that the material may be submitted to or freed from the action of the knives to the extent desired. The same may be said with reference to Fig. 5, as the lever 15 may be moved to the right or left, according to the tension to be given to the material and the extent to which the material is to be operated upon by the knives. Figs. 1 and 5 show how said results are accomplished to a certain extent; but I do not wish to limit the action of the rollers 6 and 12 to the extent shown. As the rollers 6 and 12 are smooth and revolve in the arms 8^a, they assist in the polishing of the fabric as well as regulate the tension thereof and the extent to which it is subjected to the action of the knives 8, having a discontinuous edge and the knives 11 having a continuous edge. The knife-carrying rollers 7 and 10 are adapted to be driven at triple the speed of the moving fabric, but in the same direction, and the rollers 5 5 in the same direction, but at twice the speed of the rollers 7 and 10.

The spirally-arranged knives having a discontinuous edge are calculated to grip the fabric more effectually than if they were all straight continuous edges. They are arranged in a direction opposite to the spirally-arranged knives having continuous edges on the roller 10, and both series of knives thus cooperate to keep the fabric spread out and effectually break or take hardness or stiffness out of it. The reversely-threaded rollers 5 serve to spread the fabric and the edges of the threads remove knots, loose threads, and other imperfections from the surface of the fabric.

The invention may be utilized in rubbing, breaking, and polishing silk fabrics or mixed goods.

The machine shown is capable of modifications without departing from the scope and spirit of my invention.

The main shaft may be driven in any suitable manner, and the take-up beam and the

other rotating members of the machine may be operatively connected with and driven by said main shaft.

With this description of my invention, what I claim, and desire to secure by Letters Patent, is—

1. The combination with the rotary knife-carrying members of gears loosely mounted on each end of the shafts of said members, arms secured to each of said gears, tension-rolls mounted to turn by friction in the outer ends of said arms, which project beyond the knife-carrying members, an intermediate gear meshing with the two gears which carry the tension-roll arms, an operating arm or lever secured to said intermediary gear and a guide for said operating-arm provided with means for holding said arm in the position desired, substantially as set forth.

2. In a machine for finishing silk or silk-mixed fabrics, a rotary member, knives having a discontinuous edge spirally arranged on and carried by said member with the spirals turning to the right, a second rotary member, knives spirally formed thereon with the spirals turning to the left and having a continuous edge, in combination with lever-arms loosely mounted on the ends of the shafts of said rotary members, gears secured to the inner ends of said arms, tension-rolls mounted in the outer ends of said arms and adapted to be turned by the friction of the moving fabric, an intermediary gear meshing with above-mentioned gears, an operating lever-arm secured to the intermediary gear, and a guide for said operating lever-arm provided with means for holding said arm in the position desired, for the purposes specified and substantially as set forth.

3. In a machine of the character described, the combination with the rotating, breaking, spreading and polishing members and means for driving the same, of tension-rolls, levers carrying the same and having gears secured to their inner ends, an intermediary gear meshing with said gears and a lever secured to said intermediary gear.

In testimony whereof I affix my signature in presence of two witnesses.

ALPHONSE GERBER.

Witnesses:

JOHN F. KERR,
HARRIS J. WESTERHOFF.