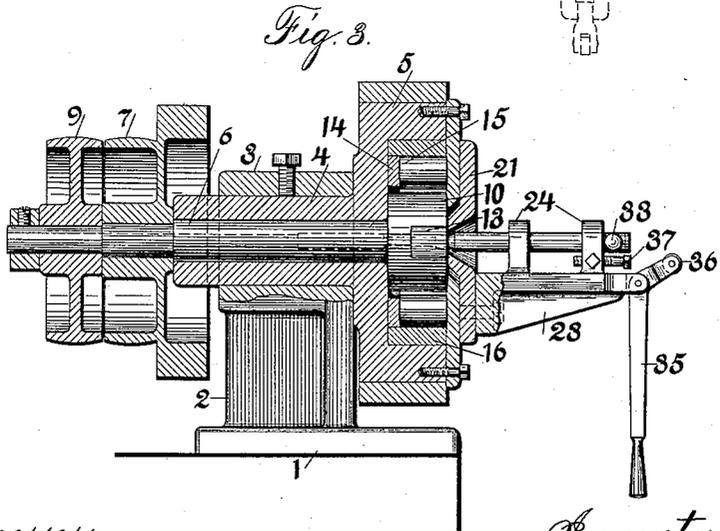
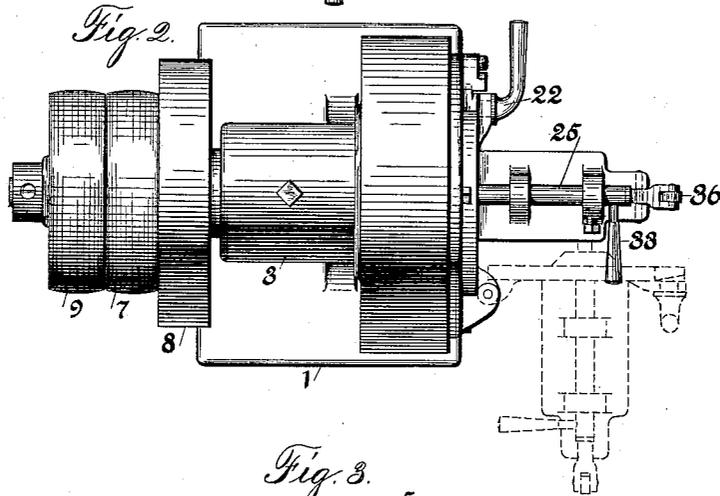
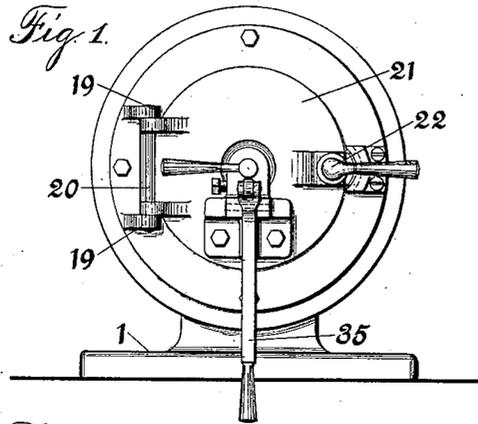


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 RING FORMING MACHINE.  
 APPLICATION FILED MAY 23, 1910.

1,024,004.

Patented Apr. 23, 1912.

2 SHEETS—SHEET 1.



Witnesses:  
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Fig. 4. Fig. 5.

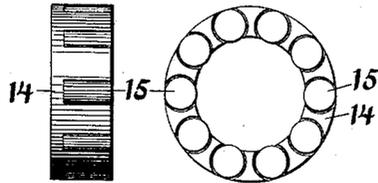


Fig. 6.

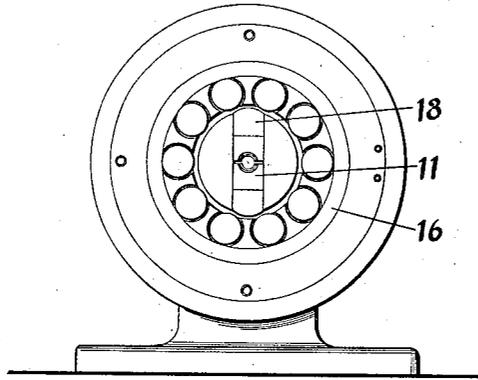
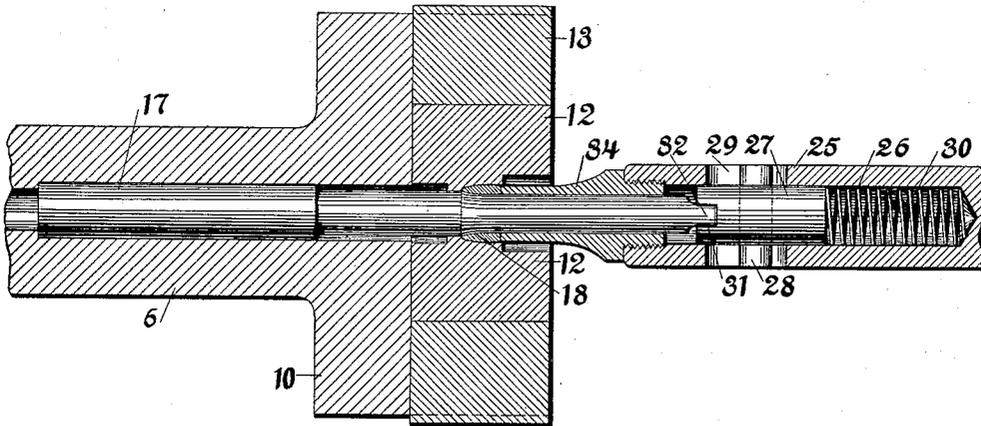


Fig. 7.



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# UNITED STATES PATENT OFFICE.

HENRY HENRICH, OF NEW YORK, N. Y.

RING-FORMING MACHINE.

1,024,004.

Specification of Letters Patent.

Patented Apr. 23, 1912.

Application filed May 23, 1910. Serial No. 562,826.

*To all whom it may concern:*

Be it known that I, HENRY HENRICH, of New York, in the county of New York and in the State of New York, have invented a certain new and useful Improvement in Ring-Forming Machines, and do hereby declare that the following is a full, clear, and exact description thereof.

The object of my invention has been to provide a machine for forming finger rings, which shall have the advantage of being capable of forming such rings with a rounded inner surface; and to such ends my invention consists in the machine for forming finger rings hereinafter specified.

In the accompanying drawings, Figures 1, 2, and 3 are respectively a front elevation, a plan view and a vertical longitudinal sectional view of a machine embodying my invention; Figs. 4 and 5 are respectively a side elevation and a front elevation of a roller carrier used in such machine; Fig. 6 is a front view of a machine, certain parts being removed to expose the dies and rollers operating thereon; Fig. 7 is an enlarged view partly in section, showing the dies, the mandrel, and adjacent parts.

My invention is capable of embodiment in many different forms, and the illustrated embodiment is to be considered as only one of many possible embodiments.

In the machine of the accompanying drawings, a base 1 is provided with an upright 2, on which is formed a socket 3, that receives the shank 4 of a circular head 5. A shaft 6 is journaled within the said shank, and is provided with a fast pulley 7 carrying a flywheel 8, and a loose pulley 9. The forward end of the shaft carries a cylindrical enlargement 10, in which are formed radial guide-ways 11, the said guide-ways in the present instance being in alinement, and being two in number. In the guide-ways are slidably mounted dies 12, having hammer blocks 13 on their outer ends. An annular roller carrier 14 is journaled in the head 5, and is provided with a series of rollers 15, that are adapted to press outwardly on a hardened ring 16, and to strike the hammer blocks 13, as they pass over them. So much of the illustrated machine is old and well known.

Within the shaft 6 is mounted a mandrel 17, that extends between the die jaws, and that is provided with a flaring or rounded surface 18, which is adapted to give the cur-

vature to one-half of the inner surface of the ring and which it should have to fit the finger. The front of the head 5 has ears 19, which support a pin 20, on which a gate 21 is hinged, the said gate being adapted to be fastened to the said head by a latch 22, of any usual construction. A bracket 23 is fastened to the said gate, and carries posts 24, in which is mounted a bar 25, that is preferably cylindrical in form and in axial alinement with the mandrel. The bar 25 is provided with a socket 26, in which is mounted a block 27, the said block being prevented from turning by having a pin 28 therein, the pin sliding in slots 29 formed in the said bar. A spring 30 tends to force the block 27 forward. The block and the mandrel are adapted to inter-lock, so as to prevent rotation of the mandrel. The block, for instance, is provided, with a groove 31, which is adapted to receive a rib or squared end 32 formed on the mandrel. Any means may be provided to prevent rotation of the bar 25, such, for instance, as a handle 33 formed on such bar. The forward end of the bar is provided with a sleeve 34, which is adapted to slide over the mandrel, and to bear against the ring blank and hold the blank up upon the flaring portion of the mandrel. In order to force the bar 25 into engagement with the mandrel, and to force the sleeve 34 up against the ring blank, means are provided to force the mandrel forward. Such means in the illustrated construction consist of a lever 35, having a roller 36 on its upper end, and a handle on its lower end. The roller is adapted to bear against the end of the bar, and its movement is limited by a set screw 37.

In the operation of forming rings by the use of the above illustrated embodiment of my invention, a blank formed in any convenient manner is put in the machine, the dies being separated, as by being drawn apart by springs, well-known in the art and not shown. The bar 25 is drawn back out of engagement with the mandrel, the blank is slipped over the end of the mandrel, and up against the flaring portion thereof, and the bar is then forced up against the mandrel, so that the end of the mandrel is engaged in the groove 31, to prevent turning of the mandrel, as before stated, and the sleeve is forced up against the ring blank, thus tending to crowd the latter against the flaring portion of the mandrel. The shaft is set in

rotation, thus revolving the dies, and causing them, as they pass the rollers, to be, in effect, hammered upon by the rollers and driven against the ring blank. The blank is thus compressed between the dies, and the flaring portion of the mandrel, and both its outer and its inner surface are given the desired convexity. When the forward half of the blank has thus been shaped, the blank is withdrawn from the machine and turned around, so that the edge, which was on the cylindrical portion of the mandrel, is toward the flaring portion of the mandrel, and the operation is repeated, thus finishing the shape of the ring.

I claim:

1. In a machine for forming rings, the combination of a mandrel having a flaring portion, dies adapted to give the outer surface of the ring a convex shape, means for causing said dies to hammer on a ring blank while the latter is on said flaring portion of the mandrel, and means for holding the ring blank against said flaring portion of the mandrel.

2. In a machine for forming rings, the combination of a mandrel having a flaring portion, dies adapted to give the outer surface of the ring a convex shape, means for causing said dies to hammer on a ring blank while the latter is on said flaring portion of the mandrel, and means for causing the relative rotation of the mandrel and dies.

3. In a machine for forming rings, the combination of a mandrel having a flaring portion, dies adapted to give the outer surface of the ring a convex shape, means for causing said dies to hammer on a ring blank while the latter is on said flaring portion of the mandrel, means for holding the ring blank against said flaring portion of the

mandrel, and means for causing the relative rotation of the mandrel and dies.

4. In a machine for forming rings, the combination of a mandrel having a flaring portion, dies having concave portions, means for causing said dies to hammer a ring blank when held on said flaring portion of the mandrel, and a sleeve adapted to bear against the ring blank and hold it against said flaring portion.

5. In a machine for forming rings, the combination of a mandrel having a flaring portion, dies having concave portions, means for causing said dies to hammer a ring blank when held on said flaring portion of the mandrel, a sleeve adapted to bear against the ring blank and hold it against said flaring portion, means for rotating said dies, and means for holding said mandrel from rotation.

6. In a machine for forming ring blanks, the combination of a mandrel having a flaring portion, a rotatable head having radially moving dies therein, said dies having a shape complementary to the outer surface of the desired ring, means for striking said dies toward said mandrel as said head is rotated, a non-rotatable bar in axial alinement with said mandrel and having a block therein, said block and mandrel being provided with an interlocking rib and groove, a spring for yieldingly forcing said block toward said mandrel, and a sleeve on said bar adapted to bear against the ring blank to force it upon the flaring portion of the mandrel.

In testimony that I claim the foregoing I have hereunto set my hand.

HENRY HENRICH.

Witnesses:

M. MEIKLE,

M. B. SARELL.