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Patented Dec. 3, 1901.

T. E. CARPENTER.
INTERCHANGEABLE ROLLER FOR CIGAR MACHINES.

(Application filed Dec. 3, 1900.)

(No Model.)

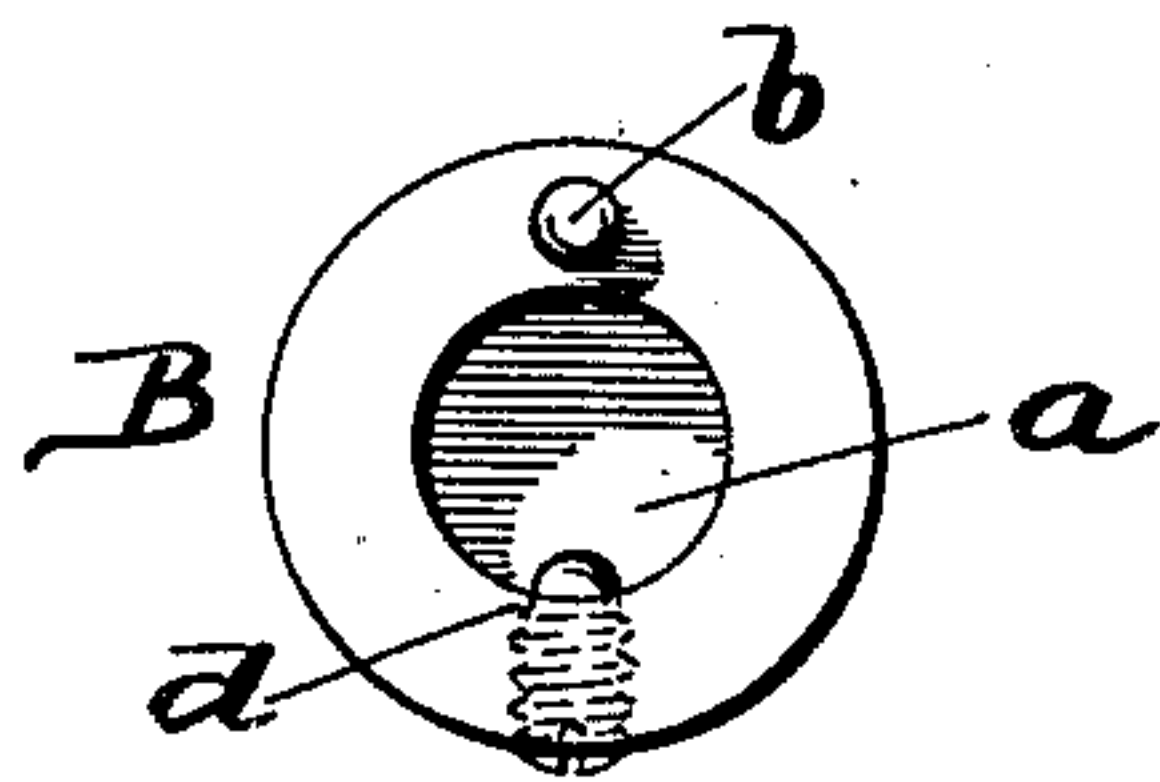
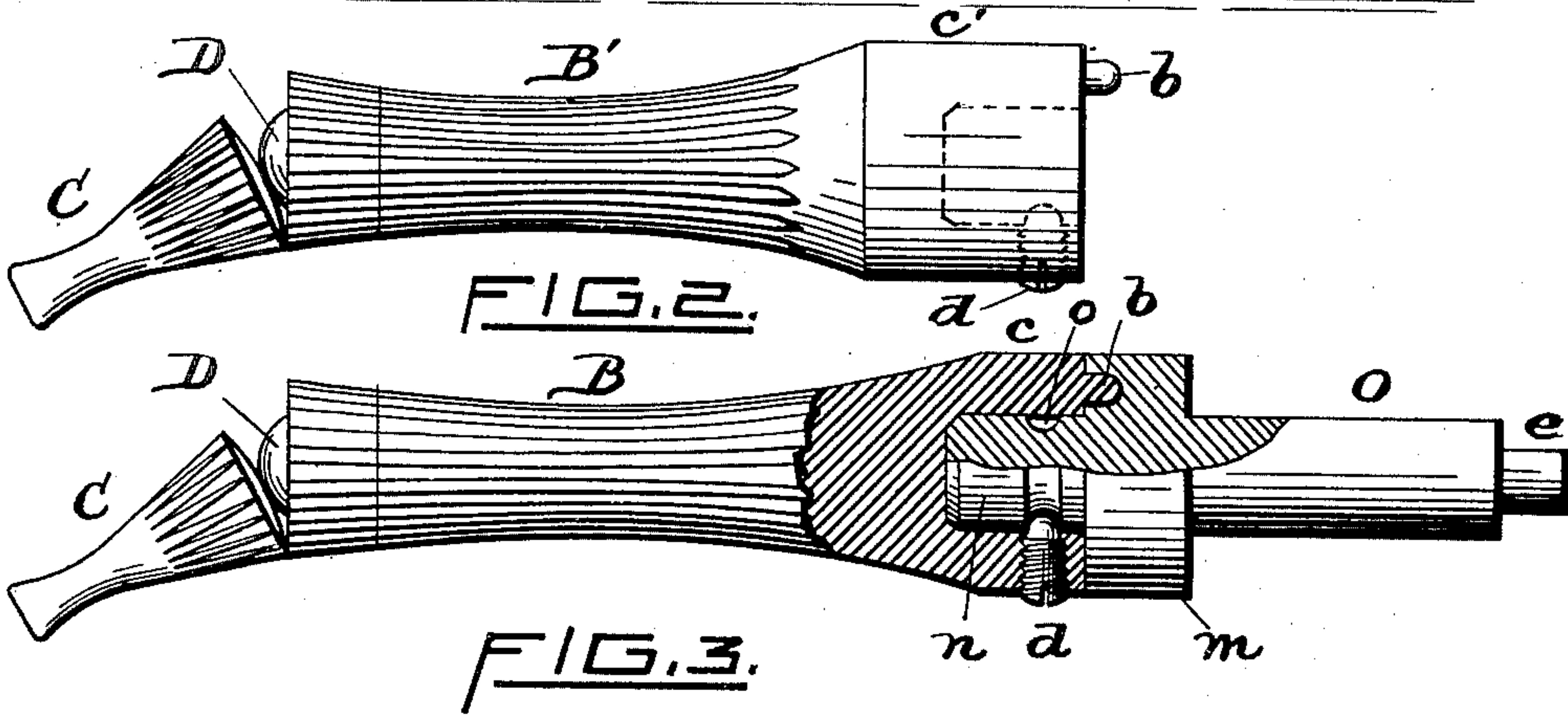
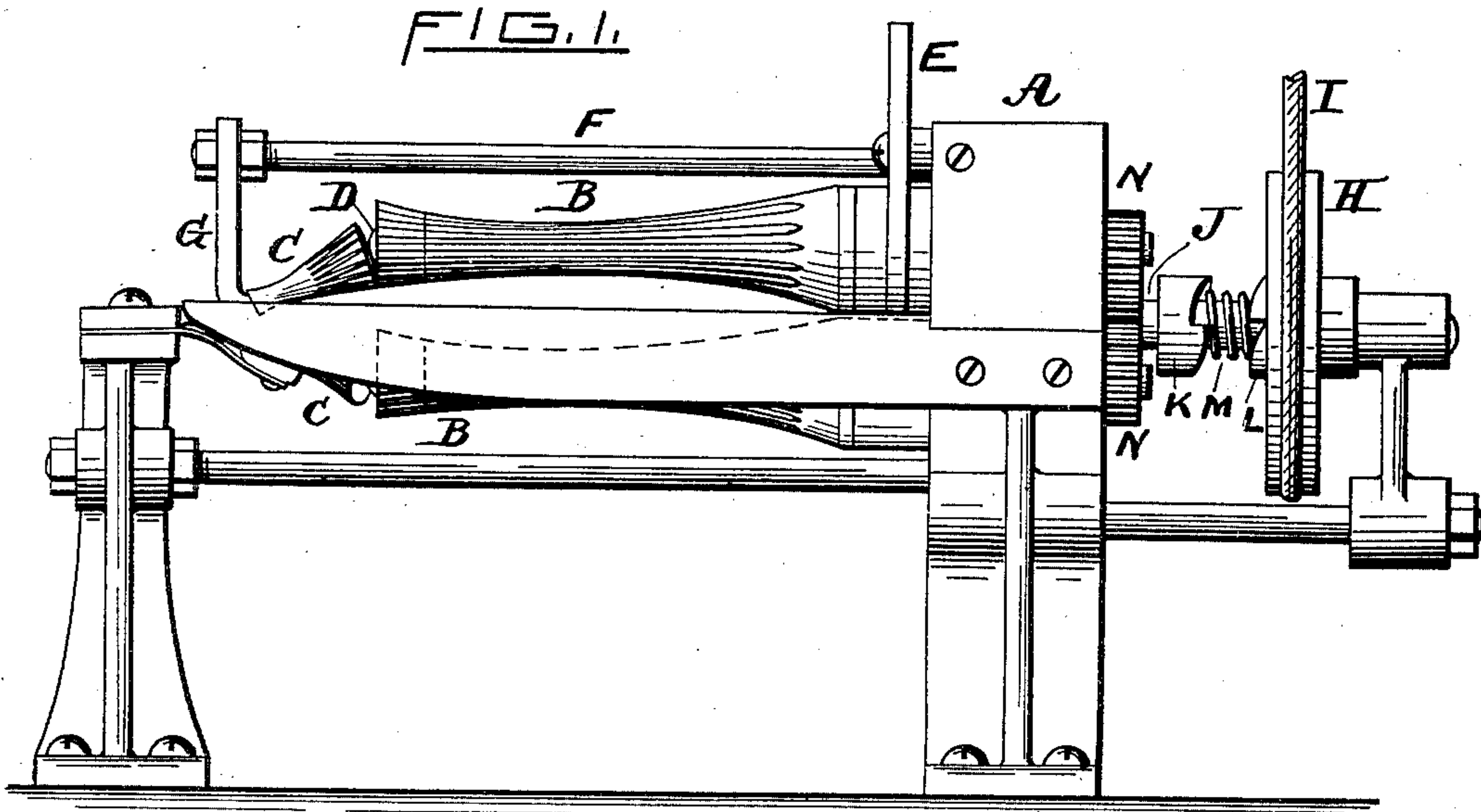


FIG. 4.

WITNESSES.

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INTERCHANGEABLE ROLLER FOR CIGAR-MACHINES.

SPECIFICATION forming part of Letters Patent No. 688,158, dated December 3, 1901.

Application filed December 3, 1900. Serial No. 38,470. (No model.)

To all whom it may concern:

Be it known that I, THOMAS E. CARPENTER, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Interchangeable Rollers for Cigar-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

Like letters indicate like parts.

Figure 1 is a front elevation of a cigar-machine to which my invention is applicable. Fig. 2 is a front elevation of one of the interchangeable rollers constituting my invention. Fig. 3 is a view, partly in front elevation and partly in central longitudinal section, of another of said interchangeable rollers in combination with a permanent arbor and shows the means by which they are connected and fastened together. Fig. 4 is a view in elevation of the right-hand end of one of said interchangeable rollers.

My invention relates to that class of cigar-machines which form and wrap the cigar-bunch by means of several rotatable rollers; and it consists of the novel construction and combination of a permanently-mounted rotatable arbor and a detachable roller and means for connecting said arbor and roller, so that they are rotatable together, as hereinafter particularly described and as specifically set forth in the claims.

In Fig. 1 I show a cigar-machine to which my said invention is applicable, though it is obvious that said invention is also adapted to be used upon any cigar-machine for making or wrapping a cigar-bunch by means of several rollers. The machine shown in Fig. 1 is substantially the same as is described in Letters Patent of the United States No. 639,663, issued to me and dated December 19, 1899, and so far as is necessary for present purposes is briefly described as follows:

A is the standard affording support for several (preferably three) main rollers B, which are concaved and longitudinally fluted, as shown. Each main roller B has at one end thereof a companion conical roller C, connected rotatably therewith by a ball-and-socket joint D, longitudinally fluted, as shown.

E is a pivotally-mounted handle from which a spring-rod F extends in a direction parallel

with the upper main roller, and on the end of said spring-rod is a downwardly-extending finger G, whose lower end is bent and enters a central socket in the smaller end of the upper conical roller to provide a support therefor. The smaller ends of the lower conical rollers are similarly mounted, respectively, upon fixed projections or brackets.

H is the pulley, driven by the belt I and loose upon the driving-shaft J. On the shaft J is a fixed clutch member K. The pulley H has a clutch member L fastened thereon, and a spiral spring M, surrounding the shaft J, has one end bearing against the clutch member K and the other end bearing against the clutch member L. The shaft J has a gear fixed thereon, which meshes with the gears of the arbors or journals of the main rollers B, respectively. When the pulley H and its connected clutch member L are slid inwardly along the shaft J by a handle or shipper, (not shown,) the clutch members K L engage, whereupon the driving-shaft J is rotated by the power of the belt I, and the rollers B C are revolved by reason of the engagement of the gear of the driving-shaft J with the gears N of the arbors or journals of the rollers B. When the handle or shipper is moved in the opposite direction, the spiral spring M separates the clutch members K and L and the machine stops its operation.

By making the main rollers detachable from their respective arbors or journals the machine may be fitted with main rollers of various sizes and shapes, thus increasing the usefulness of the machine and enabling the same machine to make cigars of different lengths and forms.

I form each main roller B with a concentric socket *a* at one end, as shown in Fig. 2 and in section in Fig. 3, and form a projection or knob *b*, (which may be a pin semispherical at its outer end and driven into a hole or socket in said end of the roller.) The cylindrical portion *c* of said roller B is also tapped, as shown in Fig. 3, and a set-screw *d* is inserted in the hole so tapped. The inner end of the set-screw *d* is semispherical, as shown.

The arbor or journal O is rotatably mounted in the standard A and is a permanent part of the machine. At its outer end it is reduced in diameter, as shown at *e*, and a gear

N is fastened there. The arbor or journal O has the integral cylindrical enlargement or collar *m*, preferably of the same diameter as the cylindrical portion *c* of the roller B. Said
 5 collar *m* has a socket adapted to receive the projection (or pin) *b* of the roller B. The inner end *n* of the arbor or journal O fits in the socket in the end of the roller B, as shown in Fig. 3, and the said end *n* is circumferentially
 10 grooved, as seen at *o* in said figure.

The roller B and arbor or journal O are engaged, as shown in Fig. 3, the end *n* of the arbor O being inserted in the socket *a* of the roller B, and the knob or pin *b* of the roller
 15 B being inserted in the hole or socket in the collar *m* of the arbor O and the set-screw *d* being screwed up until its rounded inner end engages with the circumferential groove *o* of the end *n* of the arbor O. The pin or knob *b*
 20 serves as a guide and also when seated in the hole of said collar *m* compels the roller B to rotate with the arbor O, while the projection of the end of the set-screw *d* in the groove *o* of the end *n* of the arbor O prevents any out-
 25 ward longitudinal displacement of said roller B. The end of the roller B when in operative position and connection with the arbor O abuts the inner face of the collar *m*.

In Fig. 2 I show another main roller B', which differs from the main roller B shown in Fig. 3 in that its concaved and fluted portion is shorter and its cylindrical portion *c'* is longer, while the length of the roller B' as a whole is the same as that of the roller B.
 30 Therefore if it is desired to use the machine for the manufacture of shorter cigars than those made by means of the rollers B said rollers B are detached from their respective arbors O and the rollers B' are substituted
 35 therefor, each being engaged with its arbor O by means of the end *n* of said arbor entering the socket *a* of the roller B' and of the

pin *b* of the roller B' entering the socket of the collar *m* of said arbor and also by the setting of the screw *d*, as already described. It
 45 is thus evident that by this construction I provide the cigar-machine with interchangeable rollers, so adapting it to make cigars of various lengths. The rollers may be varied
 50 also as to the curvature of the concaved portion thereof, and this results in a variation of the shape of the cigar.

I claim as a novel and useful invention and desire to secure by Letters Patent—

1. In a cigar-machine, the combination of
 55 an arbor mounted rotatably in a proper support and circumferentially-grooved near its inner end, means adapted to rotate said arbor, a collar upon said arbor integral there-
 60 with and provided with a socket in the inner face thereof, a roller having in its end a concentric circular socket adapted to receive the inner end of said arbor and also having a
 65 knob or pin adapted to enter said socket of the arbor-collar, and a set-screw passing through a threaded hole in said roller and adapted to enter the circumferential groove of the arbor, substantially as shown.

2. In a cigar-machine, the combination of
 70 a rotatably-mounted arbor, means adapted to rotate said arbor, a main roller located with its axial line in continuation of the axial line of said arbor, and detachable connections for bearing the contiguous ends of the main roller
 75 and arbor into direct contact with each other and to make them rotatable together, substantially as described.

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

THOMAS E. CARPENTER.

Witnesses:

EDWARD F. LOVEJOY,
 WARREN R. PERCE.