

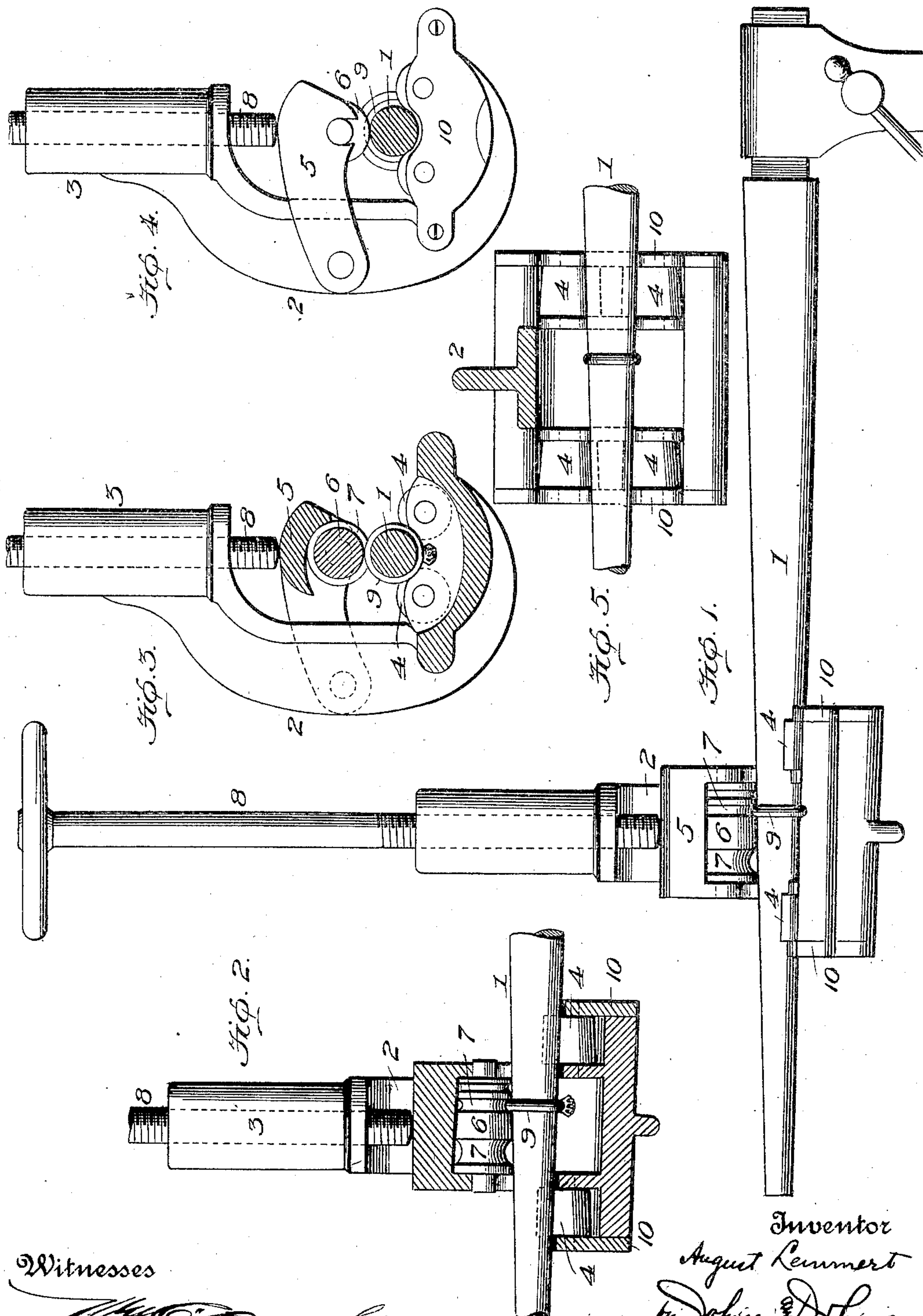
No. 682,209.

Patented Sept. 10, 1901.

A. LEMMERT.
DEVICE FOR EXPANDING FINGER RINGS.

(Application filed Feb. 20, 1901.)

(No Model.)



Witnesses

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AUGUST LEMMERT, OF BALTIMORE, MARYLAND.

DEVICE FOR EXPANDING FINGER-RINGS.

SPECIFICATION forming part of Letters Patent No. 682,209, dated September 10, 1901.

Application filed February 20, 1901. Serial No. 48,095. (No model.)

To all whom it may concern:

Be it known that I, AUGUST LEMMERT, a citizen of the United States, residing at Baltimore, in the State of Maryland, have invented certain new and useful Improvements in Devices for Expanding Finger-Rings, of which the following is a specification:

I have produced a device for expanding finger-rings, and the improvement therein will be set out in the claims appended hereto and illustrated in the accompanying drawings, in which—

Figure 1 shows in front view a grooved pressure-roller device as it is mounted for engagement with and pressure upon a ring on a tapering mandrel in the operation of a rolling pressure to expand the ring. Fig. 2 is a vertical section of the same, the fixed tapering mandrel and the grooved pressure-roller being in elevation and the ring upon the fixed mandrel in engagement with the groove of the pressure-roller. Fig. 3 is a vertical section transversely of the fixed tapering mandrel and of the grooved pressure-roller, showing the engagement of the latter with the ring on the mandrel. Fig. 4 is a side view of the same. Fig. 5 is a horizontal section showing the fixed tapering mandrel and the correspondingly-formed rolls whereby the pressure-roller device is supported in the operation of rotating it in engagement with the ring.

The mandrel 1 is the fixed element of the device, standing, preferably, in a horizontal position from a bench-vise or otherwise fixed and, tapering from its fixed connection, forms a holder and the support for the ring in the operation of expanding it. The expanding element is a grooved pressure-roller device adapted to be clamped upon the fixed tapering mandrel, with its grooved roller in engagement with the ring, and to be rotated so that the pressure-roller will operate to expand the ring. This pressure-roller device comprises a stock 2, its upper end terminating in a screw-socket 3 and its lower end formed somewhat like a tray standing out so that its center is in line with the axis of the screw-socket, while between these parts the stock is recessed to give free way for the engagement of the pressure-roller, with the ring on the mandrel. The tray stands out from each

side of the stock and has mounted within each end a pair of rolls 4, which form bearings for the tapering mandrel, and for this purpose each pair of rolls has a tapering form to conform to the taper of the fixed mandrel. Intermediately of these tapering rolls and the screw-socket a swing-arm 5 is pivotally mounted upon the stock and carries a pressure-roller 6, so that it overhangs the tray, preferably centrally with the axis of the mandrel and centrally between the inner ends of the pairs of tapering rolls, as in Figs. 3 and 5. A feature of this pressure-roller is that it has a taper form to conform to the taper of the mandrel and has a plurality of circular grooves 7 of different sizes to suit different sizes of rings to be expanded and as a means whereby the pressure-roller is engaged with the ring on the mandrel. The pressure-roller is removable and may be replaced by rollers suited for different rings. The pairs of tray-rolls are placed to give a firm bearing of the device upon the mandrel, while the pressure-roller is adapted to engage the ring on the mandrel between the inner ends of the pairs of rolls, so that the pressure upon the ring will be central with the axis of the mandrel.

In Figs. 1 and 2 is seen the pressure-roller device clamped by a screw-stem in the screw-socket upon the ring on the tapering mandrel, with the grooved pressure-roller in engagement with the ring 9, so that the roller having been thus set under pressure, with its groove engaging the ring, the operator grasping the screw-socket rotates the device upon and around the ring on the tapering mandrel, and thereby the ring is caused to be expanded as the pressure thereon enlarges its diameter.

In expanding rings having projections or set with ornaments the setting is placed free from injury in the middle tray-space, and the device is then vibrated upon the mandrel, so that the grooved pressure-roll cannot come in contact with the ring-setting. The opposite end walls 10 of the tray are fastened by screws to facilitate the mounting of the tray-rolls. Obviously a sliding carrier for the grooved pressure-roller may be substituted for the swing-arm. The rotation or vibration of the pressure-roller device upon the ring loosens it upon the mandrel. The pres-

sure of the grooved roller is then released and the ring pushed up tight on the mandrel. The pressure-roller device is then moved to again place its grooved roller in engagement
5 with the ring and again clamped upon the ring. The rotation or vibration of the device around the ring is then repeated to again loosen the ring. In this way the ring is expanded by pressure and set up on the mandrel until it has the desired size.
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I claim—

1. In a device for expanding finger-rings and in combination with a fixed tapering mandrel, a pressure-roller device comprising
15 a stock having bearing-rolls in pairs, and a carrier having a grooved roller adapted to engage a ring on the mandrel and means whereby pressure upon the grooved roller effects and maintains its engagement with the
20 ring, the said bearing-rolls and the said grooved pressure-roller tapering to conform to the taper of the mandrel.

2. A pressure-roller device for expanding finger-rings consisting of a stock having ta-

pering bearing-rolls in pairs, a suitable carrier having a grooved tapering roller, and means whereby the said grooved-roller carrier is put under pressure to permit the groove-roller to be operated in engagement with a ring suitably supported to be expanded
30 under a rolling pressure.

3. A pressure-roller device for expanding rings consisting of a stock having tapering bearing-rolls in pairs, a tapering roller having a plurality of circular grooves of different widths, a carrier for said grooved roller
35 and means whereby it is put under pressure to allow the grooved roller to be operated in engagement with a ring on a fixed mandrel whereby the ring is expanded by a rolling
40 pressure.

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

AUGUST LEMMERT.

Witnesses:

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