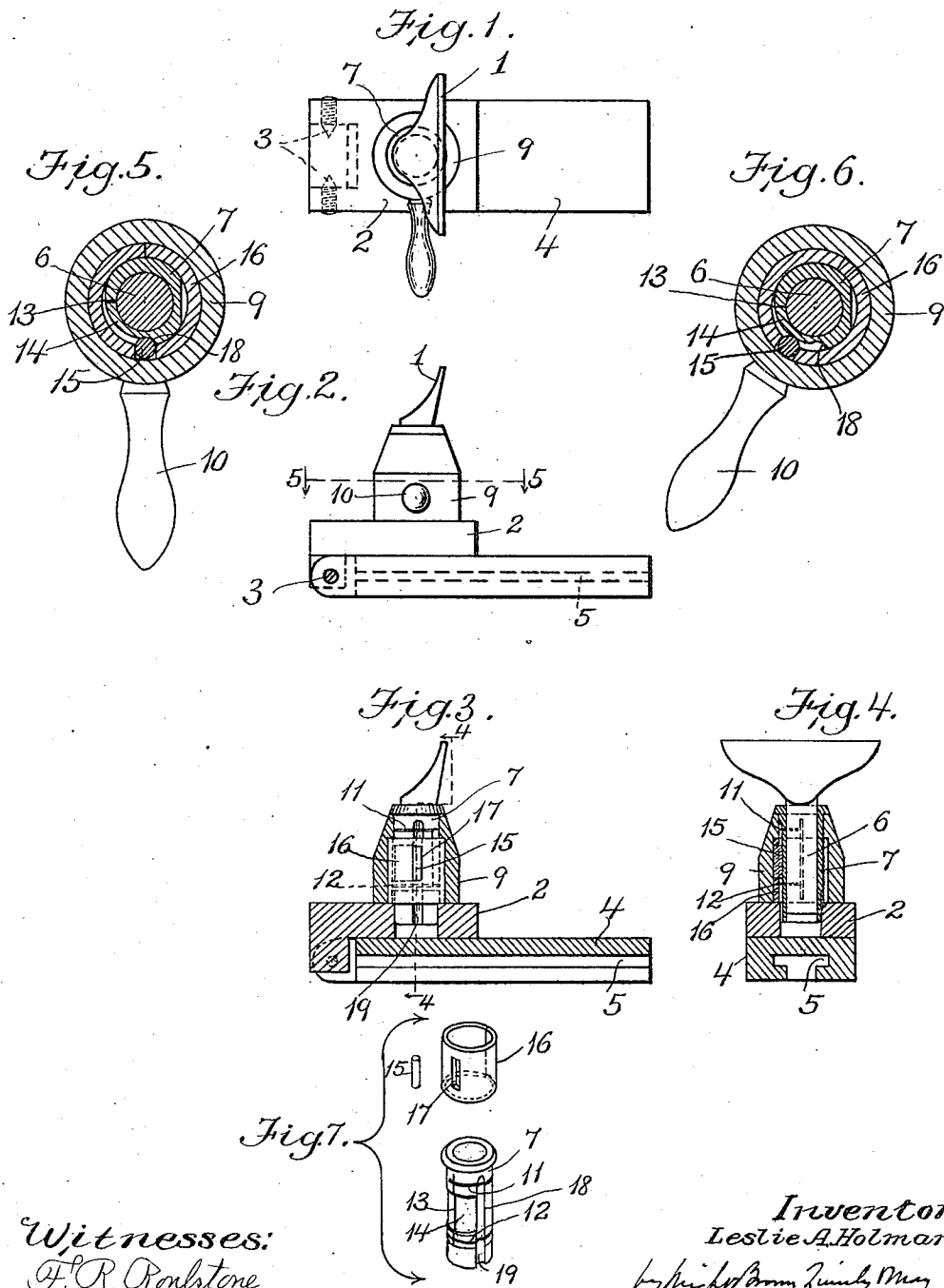


L. A. HOLMAN.
TOOL REST FOR WATCHMAKERS' LATHES.
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1,059,731.

Patented Apr. 22, 1913.



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UNITED STATES PATENT OFFICE.

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TOOL-REST FOR WATCHMAKERS' LATHES.

1,059,731.

Specification of Letters Patent.

Patented Apr. 22, 1913.

Application filed July 5, 1912. Serial No. 707,941.

To all whom it may concern:

Be it known that I, LESLIE A. HOLMAN, a citizen of the United States, and resident of Waltham, in the county of Middlesex and State of Massachusetts, have invented certain new and useful Improvements in Tool-Rests for Watchmakers' Lathes, of which the following is a specification.

This invention relates to a rest designed particularly to be applied to small lathes of the character used by watch makers and jewelers, although I do not restrict the invention entirely to this particular type of lathe.

Specifically the invention consists in an improvement upon the type of tool rest shown in the Derbyshire Patent, No. 936,422, dated October 12, 1909, the object being to enable the locking sleeve to act with certainty and positively to secure the tool rest when the sleeve is in any position; also to dispense with the necessity of excessive accuracy in manufacture of some of the parts and thereby to diminish the expense of producing the same.

The preferred embodiment of my invention is described in detail in the following specification and is illustrated in the accompanying drawings which form a part thereof.

In the drawings, Figure 1 is a plan view of the improved tool rest. Fig. 2 is a side elevation of the same. Fig. 3 is a longitudinal section. Fig. 4 is a vertical cross section on line 4—4 of Fig. 3. Fig. 5 is a horizontal cross section on line 5—5 of Fig. 2, showing the parts in unlocked position. Fig. 6 is a similar view but showing the locked condition of the parts. Fig. 7 is a perspective view of some of the parts of the device in detail.

The same reference characters indicate the same parts in all the figures.

In the drawings 1 represents the rest which is mounted upon a tip-over plate 2, the latter being pivoted on horizontal aligned studs 3 to the usual slide 4 having an under cut longitudinal groove 5 in its under side to fit over the head of a clamp stud on the carriage or bed of the lathe. The rest has a post 6 contained in a tube 7 which is fixed in the tip-over plate 2 and is surrounded by a locking sleeve 9 having an operating handle 10. The tube or hollow stud 7 is cut with transverse slots 11, 12 and a lon-

gitudinal slot 13 which intersects the first named slots, forming an integral resilient clamping tongue 14. A binding roll 15 is contained between the spring tongue and the sleeve 9, and the outer surface of the spring is eccentric to the inner, or adjacent, surface of the sleeve, to the end that when the binding roll is carried around toward the tip of the tongue it will force the latter against the post of the rest, and when carried away from the tip it will allow the tongue to release the post.

Thus far the device is the same as that shown in the Derbyshire patent.

The principal feature of my invention consists of a means associated with the locking sleeve for compelling the binding roll to travel along the eccentric face of the gripping tongue when the locking sleeve is turned in the direction for locking. In the form illustrated this means comprises a divided ring 16 which fits the interior of the locking sleeve 9 and has a slot or recess 17 to receive the binding roll 15. The thickness of the ring 16 is less than the diameter of the binding roll, as appears clearly from Fig. 6. Hence, the roll is enabled to contact with and press against the locking tongue. The ring 16 fits frictionally within the locking sleeve so that the latter is able to continue its motion when the former is arrested by the roll coming against a shoulder 18 in the tubular stud, but it binds with enough firmness to displace the roll from the groove adjacent to shoulder 18 when the locking sleeve is turned in locking direction. It sometimes happens that too great pressure applied upon the roll either flattens it or causes it to indent the stud 7, whereby engagement with the locking sleeve alone is insufficient to compel it to travel up the incline of the eccentric tongue. In such a case no amount of movement of the locking sleeve is sufficient to bind the tongue on the post of the rest. The sleeve 16 compels the roll to move in the manner desired whether it is flattened, or the tongue is indented, or not. Again, the use of my invention avoids the necessity of making the greatest distance between the spring tongue and the interior of the locking means exactly equal to the diameter of the roll, but instead I am able to make the shoulder 18 in the tubular stud by cutting a comparatively deep groove 19, and

forming the eccentric face of the tongue 14 by a transverse groove of increasing depth extending to the groove 19. It is not necessary that the deepest part of the transverse groove should be so deep as the groove 19, consequently both grooves may be cut by a milling cutter without great attention being paid to accuracy. Even though the groove 19 should be deeper than necessary to contain the binding roll and there should be a shoulder between the same and the transverse groove, the carrying ring 16 will take the pin out of the groove 19 and over the said shoulder, carrying the roll until it is caught between the tongue and the locking sleeve. Thereby the use of my invention enables economies in the manufacture of the rest to be effected.

I claim:

1. The combination of two coaxial members, one of which has a resilient clamping tongue of which the face next to the other member is eccentric to the adjacent surface of the other, or complemental, member, a binding roll contained between the said eccentric surface and the complemental member and adapted to be crowded against the tongue by rotation of said member, and means associated with said complemental member for causing said roll to move with said member.

2. The combination of two coaxial members, one of which has a resilient clamping tongue of which the face next to the other member is eccentric to the adjacent surface of the other, or complemental, member, a binding roll contained between the said eccentric surface and the complemental member and adapted to be crowded against the tongue by rotation of said member, and a carrier for said roll consisting of a ring having a frictional engagement with the complemental member and containing a pocket of less depth than the roll, in which the roll is contained.

3. A tool rest comprising in combination a base member, a tubular stud secured to

said base and having an integral resilient clamping tongue, of which the external face is eccentric to the axis of the stud, a post adjustably mounted in said stud and adapted to be secured by pressure of the tongue, a locking sleeve surrounding and rotatable on the stud, a binding roll between the sleeve and the eccentric face of the tongue, and a ring of less thickness than the roll frictionally engaging the interior of the sleeve and having a recess containing the roll.

4. In a device of the character described, in combination with a stud having a clamping tongue, a locking member rotatable relatively to said stud, and a binding roll between the adjacent surfaces of the tongue and locking member, one of such surfaces being eccentric to the axis of rotation to cause the roll to apply pressure to the tongue when the locking member is rotated in one direction, and a carrier for said roll interposed between the stud and locking member, having an aperture containing the roll, and being in frictional engagement with the locking member.

5. In a device of the character described, in combination with a stud having a clamping tongue, a locking member, rotatable relatively to said stud, and a binding roll between the adjacent surfaces of the tongue and locking member, one of such surfaces being eccentric to the axis of rotation to cause the roll to apply pressure to the tongue when the locking member is rotated in one direction, and means carried by the locking member constructed and arranged to compel movement of the roll with said member when the latter is turned in the locking direction, and adapted to slip when the locking member is turned in the opposite direction.

In testimony whereof I have affixed my signature, in presence of two witnesses.

LESLIE A. HOLMAN.

Witnesses:

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