

T. W. Hobb & W. A. GWINN.
 MAINSPRING WINDER.
 APPLICATION FILED MAY 24, 1909.

973,045.

Patented Oct. 18, 1910.

Fig. 1.

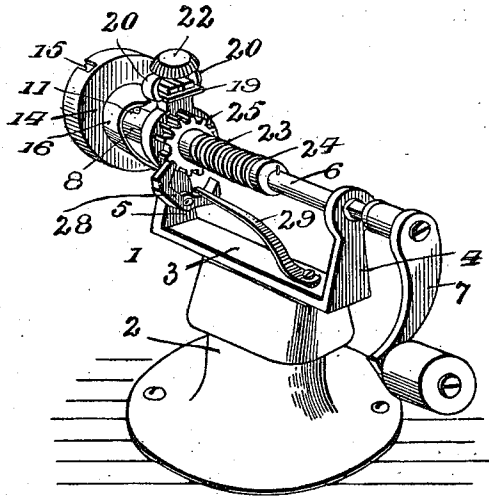


Fig. 2.

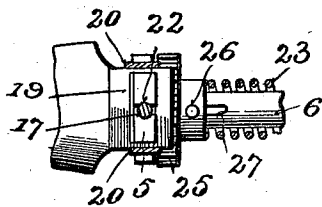
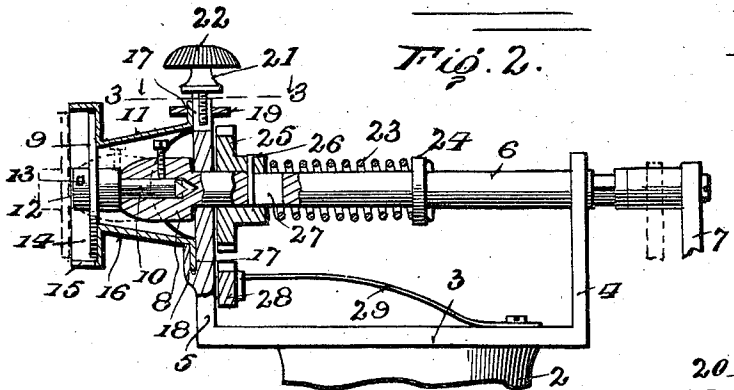
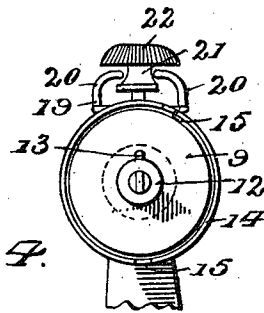


Fig. 3.

Fig. 4.



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Witnesses

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UNITED STATES PATENT OFFICE.

THOMAS W. Hobb AND WILLIAM A. GWINN, OF MIDDLESBORO, KENTUCKY.

MAINSRING-WINDER.

973,045.

Specification of Letters Patent.

Patented Oct. 18, 1910.

Application filed May 24, 1909. Serial No. 497,883.

To all whom it may concern:

Be it known that we, THOMAS W. Hobb and WILLIAM A. GWINN, citizens of the United States, both residing at Middlesboro, in the county of Bell and State of Kentucky, have invented certain new and useful Improvements in Mainspring-Winders, of which the following is a specification.

This invention comprehends certain new and useful improvements in jewelers' tools, and the invention has for its object a main spring winder which is simple and durable in construction and particularly efficient in operation.

With this and other objects in view that will more fully appear as the description proceeds, the invention consists in certain constructions and arrangements of the parts that we shall hereinafter fully describe and then point out the novel features of in the appended claims.

For a full understanding of the invention and the merits thereof and also to acquire a knowledge of the details of construction, reference is to be had to the following description and accompanying drawing, in which:

Figure 1 is a perspective view of our improved main spring winder; Fig. 2 is a vertical longitudinal section thereof; Fig. 3 is a sectional plan view, the section being taken on the line 3—3 of Fig. 2; and, Fig. 4 is a detail end view showing the barrel and the disk positioned therein.

Corresponding and like parts are referred to in the following description and indicated in all the views of the drawing by the same reference characters.

Our improved main spring winder embodies a supporting frame 1 which is illustrated as mounted upon a stand or pedestal 2 that is adapted for attachment to a work bench. The supporting frame is substantially U-shaped and consists of a base 3 and upstanding arms 4 and 5, the latter being formed with registering apertures in which a winding shaft 6 is journaled for both longitudinal movement and rotation. A crank handle 7 is fitted to one end of the shaft beyond and in spaced relation to the arm 4 to admit of the shaft being conveniently rotated. The opposite end of the shaft projects beyond the corresponding arm 5 and is laterally enlarged and formed with an axially disposed socket in order to constitute a stock 8 for carrying a disk or head 9. The

shank 10 of the disk is fitted in the stock and is detachably retained therein by means of a set screw 11. The disk is disposed perpendicularly to the shaft and is provided on its outer face with a concentric post 12 having a laterally projecting lug 13.

A substantially cylindrical barrel 14 is arranged to normally accommodate the disk 9 and is formed with one or more slots extending longitudinally through the periphery thereof, as indicated at 15, the barrel being supported at the outer end of a relatively small sleeve 16 which encircles the stock in spaced relation thereto and is detachably secured at its inner end to the arm 5. In the present instance this detachable connection is effected through the medium of oppositely disposed flanges or projections 17 formed at upper and lower points at the inner end of the sleeve. The lower flange is seated in a suitable pocket 18 formed at the outer face of the arm 5, while the upper flange is held against the said arm by a loop or frame 19 which is adapted to be slipped downwardly therearound. The loop is formed with upstanding inwardly curved arms 20 that enter an annular groove 21 formed in the head of a thumb screw 22 which works in the upper end of the arm 5, whereby the vertical adjustment of the loop may be effected by the proper manipulation of the thumb screw.

The winding shaft is yieldingly maintained against reciprocatory movement by an expansion spring 23 encircling the same and normally exerting its force to hold the disk 9 in position in the barrel. The expansion spring is interposed between a collar 24 and the hub of a ratchet wheel 25, the latter being mounted on the shaft at the inner face of the arm 5. The ratchet wheel is fixed to the shaft by a pin 26 passed through the hub thereof and through a longitudinal slot 27 in the shaft, thereby insuring of the ratchet wheel turning with the shaft and preventing the former from interfering with reciprocatory movement of the latter. Pivoted to the arm 5 below the shaft is a pawl 28 that is designed to engage with the ratchet wheel to hold the shaft against any rotation in one direction and prevent the shaft from slipping backwardly during the winding of the main spring. This pawl is preferably double-ended and a leaf spring 29 is arranged to bear against one end thereof in order to

raise the other end into engagement with the ratchet wheel. The leaf spring is pivoted to the base 3 and by turning the spring to bear against the other end of the pawl, the latter may be quickly reversed.

In the practical use of the tool, the main spring is fitted in the barrel 14 with the slot at its inner end engaged with the lug 13 and with its outer end passing through one of the slots 15. The operator then holds his finger across the end of the barrel to prevent possible displacement of the main spring and turns the shaft 6 in the requisite direction to wind the main spring about the post 12. As the spring is wound up the catch at the outer end thereof is drawn against the periphery of the barrel in proximity to the said slot 15, the catch being of such size as to prevent its passage through the slot. After the winding operation has been completed the barrel of the watch is placed against the outer end of the barrel 14, whereupon the main spring is transferred from the latter to the former in the customary manner by sliding the shaft 6 longitudinally against the force of the spring 23 to project the head 9 out of the barrel, as indicated in dotted lines in Fig. 2. The transfer is completed by reversing the pawl 30 and turning the shaft in the reverse direction sufficiently to disengage the lug 13 from the slot at the inner end of the main spring.

Attention is particularly directed to the fact that the sleeve 16 is recessed or cut away between the flanges 17 in order to afford access to the set screw 11 and admit of the ready detachment of the head 9. After the head has been detached, the barrel and sleeve may be quickly removed by adjusting the thumb screw 22 in such a manner as to lift the loop out of engagement with the upper flange 17, and then drawing the lower flange from the pocket 18. It is contemplated to replace the head and barrel by parts of different sizes in order to compensate for the size of the main spring to be wound.

From the foregoing description in connection with the accompanying drawing it will be apparent that we have provided an improved winding tool that is very efficient in operation; that consists of comparatively few parts which are not likely to get out of order and are readily separable for cleaning purposes; and that may be easily and cheaply manufactured so as to be placed upon the market at a price not too great to prevent its general adoption.

Having thus described the invention what is claimed as new is:

1. A main spring winder including a barrel, a rotary shaft projecting axially within the barrel, a disk fixed on the shaft and rotatable therewith within the barrel, the shaft being movable longitudinally to slide

the disk outwardly in the barrel, and means disposed at the outer face of the disk for engaging with one end of the main spring.

2. A main spring winder including a barrel, a rotary shaft having one end projecting axially into the barrel and formed with an axially disposed socket, a disk rotatable within the barrel and having a shank projecting axially from one face thereof and fixed in the socket in the shaft to cause the disk to rotate therewith, the shaft being movable longitudinally to slide the disk outwardly in the barrel, and means outstanding centrally from the outer face of the disk for engaging with one end of the main spring.

3. A main spring winder comprising a supporting frame, a shaft journaled in the frame with one end projecting therebeyond the projecting end of the shaft having a socket to constitute a stock, a disk having a shank received in the stock, a set screw working in the stock for retaining the shank therein, a barrel within which the disk is accommodated, and a sleeve secured to the frame and encircling the stock and carrying the barrel, the sleeve being cut away to afford access to the set screw.

4. A main spring winder including a support having a bearing, winding shaft journaled in the bearing for both longitudinal movement and rotation, one end of the shaft projecting beyond the bearing and being formed with a longitudinal socket, a disk having a shank received in the socket, a set screw working in the projecting end of the shaft to hold the shank in the socket, a barrel in which the disk is received, and a sleeve supporting the barrel from said support and inclosing the shaft between the barrel and the bearings.

5. A main spring winder comprising a support, a shaft journaled in the support with one end projecting therebeyond, a disk carried by the projecting end of the shaft, a barrel within which the disk is received, a sleeve inclosing the projecting end of the shaft and secured at one end to the barrel, the sleeve being formed at its other end with an outstanding peripheral flange abutting against the support, and means for detachably securing the flange to the support to maintain the sleeve and barrel in place.

6. A main spring winder comprising a support, a shaft journaled in the support with one end projecting therebeyond, a disk carried by the projecting end of the shaft, a barrel within which the disk is received, a sleeve inclosing the projecting end of the shaft and secured at one end to the barrel, the sleeve being formed at its other end with oppositely disposed outstanding flanges, the support being formed with a pocket for the reception of one of the flanges, and means for detachably engaging the other flange to hold the same against the support, whereby

to retain the first named flange in the pocket and to removably connect the sleeve to the support.

7. A main spring winder comprising a support, a shaft journaled in the support with one end projecting therebeyond, a disk carried by the projecting end of the shaft, a barrel within which the disk is received, a sleeve inclosing the projecting end of the shaft and secured at one end to the barrel, the sleeve being formed at its other end with oppositely disposed outstanding flanges, the support being formed with a pocket for the reception of one of the flanges, and a member carried by the support and movable thereon to engage the other flange to hold the same against the support, whereby to removably connect the sleeve to the support.

8. A main spring winder comprising a support, a shaft journaled in the support with one end projecting therebeyond, a disk carried by the projecting end of the shaft, a barrel within which the disk is received, a sleeve inclosing the projecting end of the shaft and secured at one end to the barrel, the sleeve being formed at its other end with oppositely disposed outstanding flanges, the support being formed with a pocket for the reception of one of the flanges, a loop mounted on the support and movable thereon to engage the other flange to hold the same against the support, and a set screw for holding the loop in adjusted position.

9. A main spring winder comprising a support, a shaft journaled in the support with one end projecting therebeyond, a disk carried by the projecting end of the shaft, a barrel within which the disk is received, a sleeve inclosing the projecting end of the shaft and secured at one end to the barrel, the sleeve being formed at its other end with oppositely disposed outstanding flanges, the support being formed with a pocket for the reception of one of the flanges, a loop mounted on the support and movable thereon to engage the other flange to hold the same against the support, and a set screw working in the support and operatively connected to the loop to move the same relatively to the support and to hold the same in different adjusted positions.

10. A main spring winder comprising a supporting frame, a winding shaft journaled in the frame, a disk carried by the winding shaft, a barrel carried by the supporting frame and accommodating the disk,

a ratchet wheel rotatable with the shaft, a double-ended pawl pivoted to the supporting frame, and a leaf spring bearing against one end of the pawl to hold the opposite end thereof in engagement with the ratchet wheel to prevent the shaft from turning in one direction, the leaf spring being pivoted to the supporting frame and adapted to bear against either selected end of the pawl, as and for the purpose specified.

11. A main spring winder comprising a supporting frame, a winding shaft journaled therein for both longitudinal movement and rotation, a disk carried by the winding shaft, a barrel carried by the supporting frame and within which the disk is normally accommodated, a ratchet wheel rotatable with the winding shaft, and a pawl engaging with the ratchet wheel, the ratchet wheel being slidable on the shaft so as not to interfere with the longitudinal movement thereof.

12. A main spring winder comprising a support, a winding shaft journaled in the support for both longitudinal movement and rotation, a disk carried by the winding shaft, a barrel secured to the support and within which the disk is received, a ratchet wheel rotatable with the winding shaft, and a pawl mounted on the support and engaging with the ratchet wheel, the ratchet wheel being held against longitudinal movement with the shaft, whereby to be retained at all times in operative relation to the pawl.

13. A main spring winder comprising a support, a winding shaft journaled in the support for both longitudinal movement and rotation, a disk mounted on the winding shaft, a barrel carried by the support and within which the disk is movable, a ratchet wheel rotatable with the winding shaft and having a limited sliding movement relative thereto, a pawl mounted on the support and engaging with the ratchet wheel, and a spring mounted on the shaft and yieldingly maintaining the same against longitudinal movement and also yieldably holding the ratchet wheel against sliding movement.

In testimony whereof we affix our signatures in presence of two witnesses.

THOMAS W. Hobb. [L. S.]
WILLIAM A. GWINN. [L. S.]

Witnesses:

C. T. CLELAND,
B. I. SPARKS.