Dec. 5, 1939. I. GASTON 2,181,971

PALLET AND ROLLER JEWEL SETTER

Filed Oct. 14, 1938

Fig. 1.

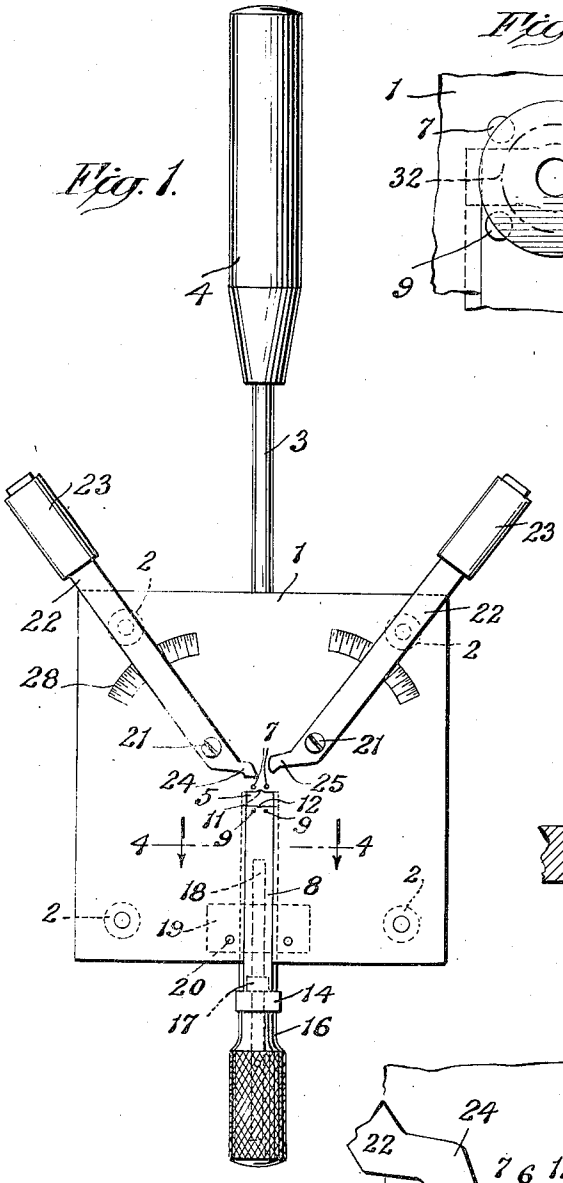


Fig. 5.

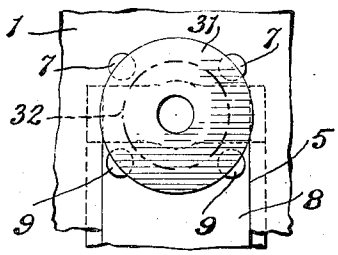
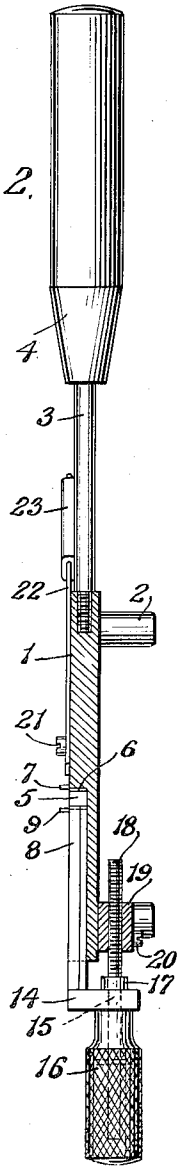


Fig. 2.



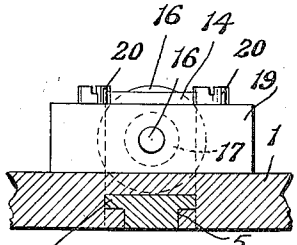


Fig. 4.

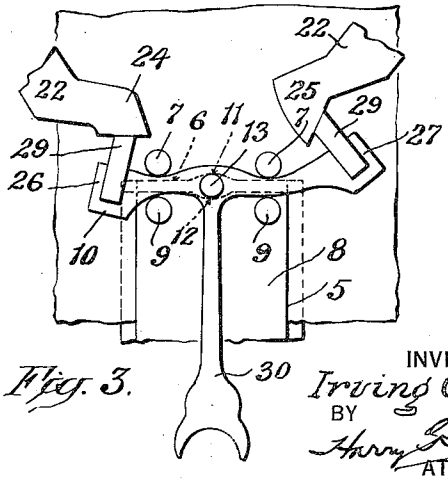


Fig. 3.

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PALLET AND ROLLER JEWEL SETTER

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Application October 14, 1938, Serial No. 234,905

3 Claims. (Cl. 81—6)

This invention relates to pallet and roller jewel setters especially adapted for use by watch makers and repairers, an example of the type of tool to which the invention relates being shown in the patent to Garnett, No. 956,956 dated May 3, 1910.

The object of the present invention is to provide an improved tool by means of which pallet stones, roller jewels, and possibly other elements used in watch movements may be easily and quickly adjusted into position. One of the objections found in tools of this general character in use at the present time consists in the tendency of the pallet to shift or move while the jewels are being positioned in it; another objection consists in the tendency of the pallet to swing out of place in the recesses usually provided in the holder for its reception; another objection resides in the difficulty with which the pallet is placed in position in the holder, and the inconvenience and difficulty in regulating the device to accommodate pallets of various sizes. These objections are overcome by the present structure, since the pallet may be easily placed in position and when so placed will be firmly held and prevented from shifting during placement or replacement of the jewels; the device is designed to accommodate pallets of various sizes without requiring shifting or changing of parts; roller jewel mountings commonly known as "rollers" may be securely held for the placement or replacement of jewels therein and various other objects, readily apparent to those skilled in this art, will be noted from the description appearing hereinafter.

In the accompanying drawing, wherein an embodiment of the invention is shown, Fig. 1 is a plan view of the improved pallet and roller jewel setter made in accordance with the invention; Fig. 2 is a longitudinal sectional view through the device; Fig. 3 is an enlarged plan view of a portion of the device showing how a pallet is held in position and the jewels thereof set in place or adjusted; Fig. 4 is a sectional view on the line 4—4 of Fig. 1, looking in the direction of the arrows; and Fig. 5 is a plan view of a portion of the device showing how the roller jewel mounting is held by the tool.

In the drawing, 1 indicates the base plate of the device, the same consisting of a flat, substantially square section of metal provided with four downwardly extending feet 2 upon which it may be rested on any suitable support. Threaded into and extending from one edge of the plate is a rod 3 upon which is fastened a handle 4 by which the device may be held over an alcohol lamp or other source of heat to soften the cement used to set the pallet stones, as will hereinafter be described.

Formed in the base plate 1 is an elongated slot 5 which has its inner closed end 6 located near or substantially at the center of the plate, said slot extending to and opening at one edge of the plate. Secured in the plate and projecting upwardly from its upper face is a pair of fixed, spaced pins or studs 7, the same being located close to the inner end 6 of the slot 5. Mounted for movement in the slot is a slide 8, said slide being of T-shaped cross section, as seen in Fig. 4 to closely fit the conformation of the slot 5, and to be guided smoothly therein. The upper exposed face of the slide 8 extends flush with the upper face of the plate 1, as will be seen in Fig. 2, and near its inner end the slide 8 is provided with a pair of spaced, upstanding pins or studs 9 which, when the slide is moved in the slot 5, are brought to or from the fixed studs 7, according to the movement of the slide, and co-operate with the said fixed studs to clamp the pallet 10 between the two pairs of studs as seen in Fig. 3.

The inner end 6 of the slot 5 is notched slightly as at 11 between the studs 7 and the end of the slide 8 is similarly notched at 12 so that when the pallet 10 is clamped between the two pairs of studs 7 and 9, the projecting pivot 13 on the pallet may extend downwardly into the space between the end of the slide 8 and the end 6 of the slot, and fit between the notched portions 11 and 12. The slide 8 is provided at its outer end with a downwardly extending head 14 in which a shaft 15 is rotatably mounted. Secured on the outer end of shaft 15 is a handle 16 by which the shaft may be manually rotated, and the shaft is confined in the head 14 by means of a bushing or washer 17 secured upon it. Thus, the head 14 is confined between the washer or bushing 17 and the handle 16, and the shaft is free to rotate within the head 14 but is held against longitudinal movement therein.

Shaft 15 is threaded as indicated at 18, the threaded portion of the shaft extending through a complementarily-threaded guide member or block 19, attached to the under face of the plate 1 by means of the screws 20. Pivotally secured to the upper face of the plate 1 by means of the screws 21 are levers 22, terminating in the covered handle portions 23. These levers 22 are formed with differently shaped heads or ends 24 and 25 to suit the angles of the pallet sockets

26, 27, so that when the pallet stones have been placed in position within the sockets, they can by manipulation of the levers be forced properly into place at the required angle. It is of course understood that heads 24 and 25 have been heated so as to soften the cement used for holding the pallet stones in position before the levers are operated.

The upper face of the plate 1 is etched or otherwise provided with the arcuately extending graduations 28, by means of which the levers 22 may be set at the required angle to properly position the stones 29 in the pallet sockets 26, 27.

In using the device, it is merely necessary to rotate the handle 16 to the required extent to cause the slide 8 to have its inner end moved away from the end wall 6 of slot 5 for the amount required to enable the pallet to be dropped into position between the pair of fixed studs 7 and the pair of studs 9 carried by the slide. When the pallet is placed in position, its central leg portion 30 will extend between studs 9 and will rest upon the top face of the slide 8 so that the pallet cannot descend or assume an inclined or misaligned position. The handle 16 is then rotated to cause the slide to move toward the pins 7, until the pins 9 carried by the slide, co-operate with the fixed pins 7 in firmly holding the pallet in the position shown in Fig. 3. The pallet is now securely held against displacement, and heat is applied to soften the cement, whereupon the levers 22 may be manipulated to properly position the pallet stones 29 in the pallet sockets 26 and 27 in a manner clearly understood in this art. As soon as the stones 29 have been properly positioned, the pallet may be released from its engagement by the pins 7 and 9 by rotation of the handle 16 to move the slide 8 in a direction away from the end 6 of the slot 5.

In Fig. 5, the manner in which a roller jewel mounting is placed to be held in place between the pairs of pins 7 and 9 is shown. The disc portion 31 of the roller jewel mounting rests over the upper ends of the studs and then the studs are brought together by movement of the slide 8, until the same firmly engage against the sides of the cylindrical part 32 of the roller jewel to hold it firmly while a broken jewel is removed and replaced. In Fig. 5 the roller jewel mounting is shown in position with the studs in readiness to be brought together to hold the mounting as just explained.

While I have shown and described one embodiment of the invention, it is obvious that the same is not to be restricted thereto, but that it is broad enough to cover all structures coming within the scope of the annexed claims.

What I claim is:

1. A tool of the character described comprising a base plate having a flat upper face on which a pallet is held, a pair of spaced fixed studs on said plate against which the pallet is held, a movable member mounted on the plate for movement to and from the studs, said member having its upper face flush with the flat upper face of the base plate and carrying studs for co-operation with those on the plate for clamping the pallet, and levers pivotally mounted on the plate for operating on the stones of the pallet clamped between the studs.

2. A pallet setting and adjusting tool comprising a base plate having a flat top, said plate being slotted inwardly from one of its edges to a point adjacent its center, a pair of spaced upstanding studs on top of the plate at the inner closed end of the slot adjacent the center of the plate, a slide located in the slot and bodily movable therein to bring its inner end toward or away from the closed inner end of the slot and the upstanding studs located thereat, a pair of spaced upstanding studs on the top of the slide adjacent the inner end of the same for co-operation with the studs on the plate in holding a pallet clamped between the two pairs of studs, the spacing of the studs being such that a pallet clamped between them will have its stone-holding ends extending beyond the studs and resting and supported on the surface of the plate beyond the opposite side edges of the slide, means for moving the slide to and from the closed end of the slot, and levers pivotally mounted on the flat top of the plate for operation upon the stones in the ends of the pallet.

3. A pallet setting and adjusting tool comprising a base plate slotted inwardly from one of its edges to a point substantially near its center, a pair of spaced upstanding studs on top of the plate adjacent the inner closed end of the slot, a slide located in the slot and bodily movable therein to bring its inner end toward or away from the closed inner end of the slot and the upstanding studs located thereat, a pair of spaced upstanding studs on the top of the slide adjacent the inner end of the same for co-operation with the studs on the plate in holding a pallet clamped between the two pairs of studs, the spacing of the studs being such that a pallet clamped between them will have its stone-holding ends extended beyond the studs and resting and supported on the surface of the plate on opposite sides of the slide, the inner end of the slide and the closed end of the slot being recessed to accommodate the spindle of a pallet clamped between the studs, means for moving the slide to or from the closed end of the slot, and levers pivotally mounted on the top of the plate for operation upon the stones held in the ends of the pallet.

IRVING GASTON.