Sept. 22, 1931. J. B. YACOVONE 1,824,522

LEASE ROD FOR WARPING MACHINES

Filed Dec. 4, 1930 2 Sheets-Sheet 1

FIG. 1

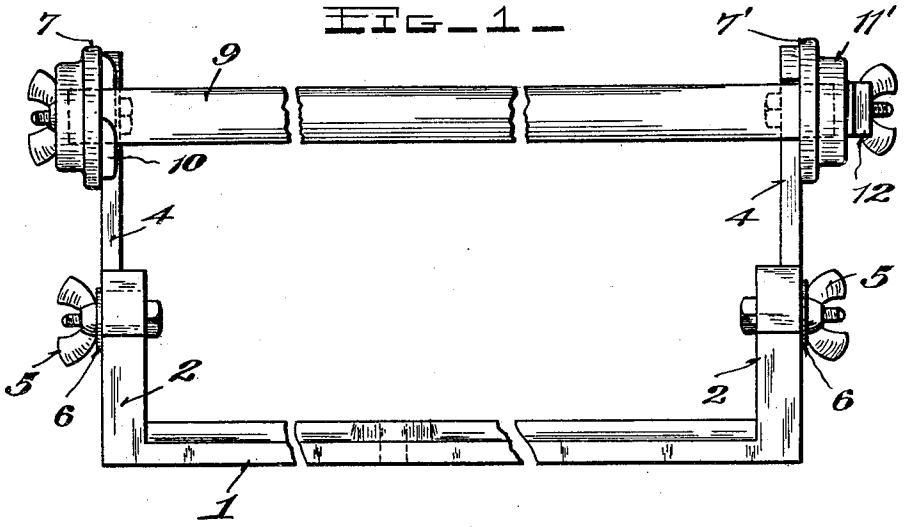
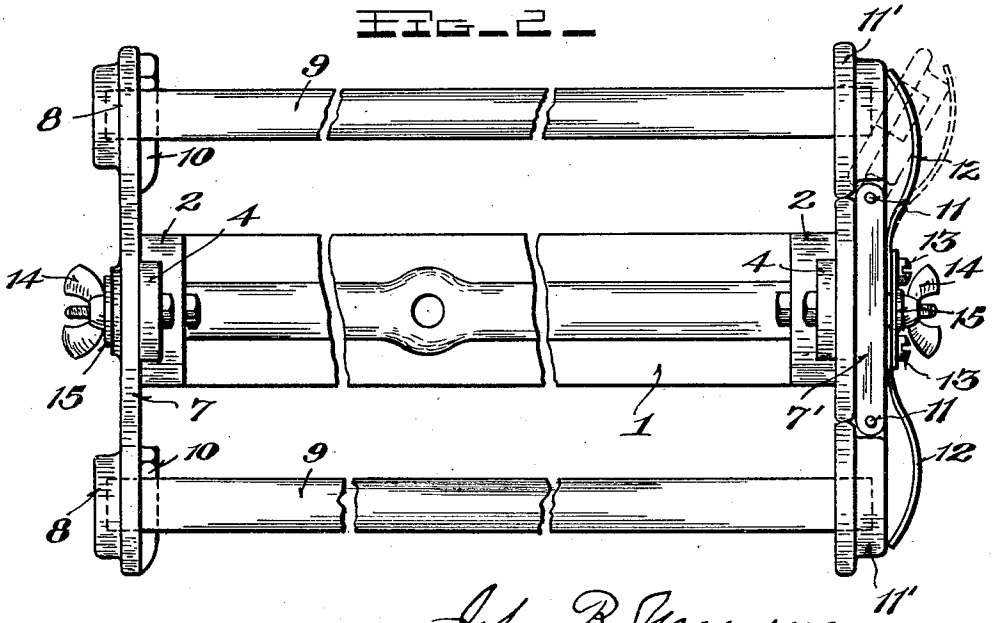


FIG. 2



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Filed Dec. 4, 1930 2 Sheets-Sheet 2

FIG. 3.

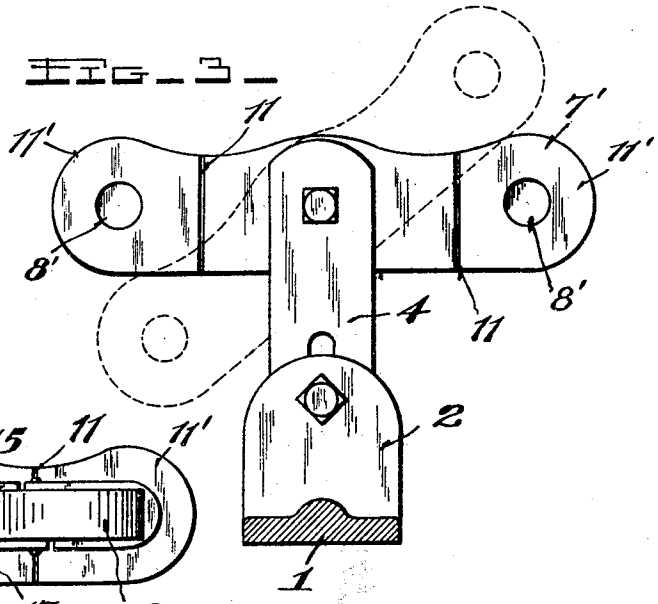


FIG. 4.

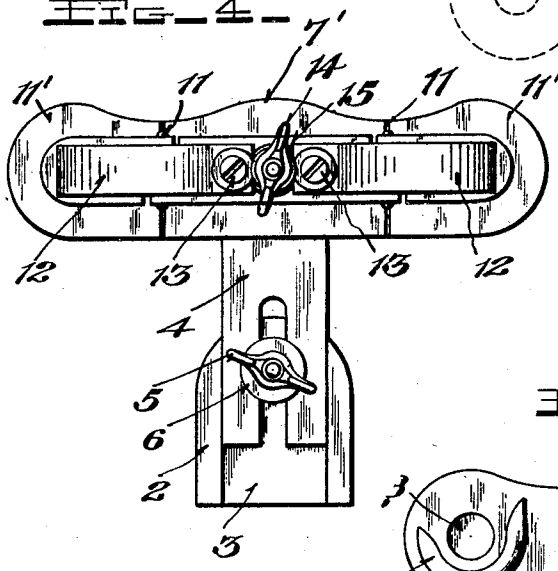


FIG. 5.

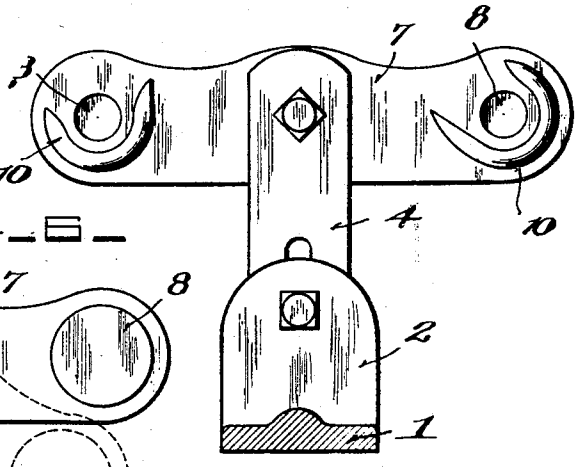
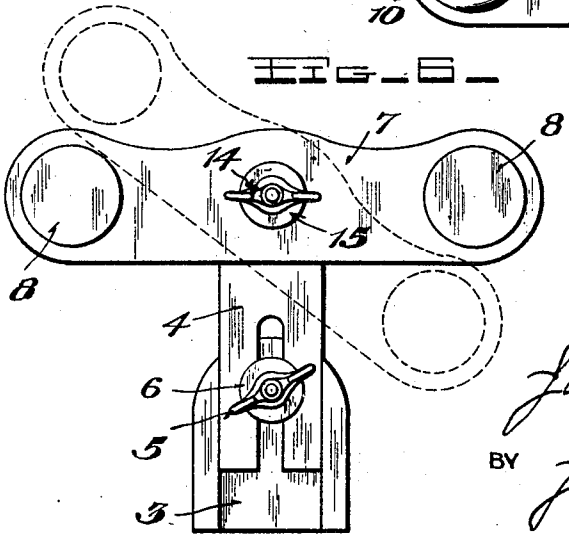


FIG. 6.



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UNITED STATES PATENT OFFICE

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LEASE ROD FOR WARPING MACHINES

Application filed December 4, 1930. Serial No. 499,915.

This invention relates to lease rods for warping machines and has for its primary object to provide unitary means whereby the frictional pull imparted to yarn or thread may be adjusted.

A further object of the invention is to provide means whereby either of the lease rods may be removed and easily replaced.

A still further object of the invention is to provide a structure which is simple in its construction, positive in its operation and which may be inexpensively produced.

Further objects and advantages will become apparent as the description proceeds reference being had to the accompanying drawings in which;

Figure 1 is a side view of the invention;

Figure 2 is a plan view;

Figure 3 is an elevation partly in section of the inside of the spring bearing end of Figure 2;

Figure 4 is an outside elevation of the same end as in Figure 3;

Figure 5 is an inside elevation partly in section of the end opposite the spring-bearing end showing the socket guides; and

Figure 6 is an outside elevation of the same end showing the adjusting nuts and showing a dotted line view of one adjustment.

In proceeding in accordance with the present invention, a base or frame plate 1 is provided having upturned portions 2 at its ends. The upturned portions have their outer sides grooved to form guideways 3 in which the bifurcated shanks or supports 4 are movable. When the proper elevation of the shanks is obtained, clamping nuts 5 bearing on washers 6 are provided to hold same in adjusted position. Heads 7 and 7′ are carried by the shanks 4 and are provided with sockets 8 and 8′ to receive rods 9 therein as shown. The head 7 on one end of the structure has its sockets 8 fixed and has U-shaped socket guides 10 to assure proper positioning of the rods 9 in the sockets 8. The opposite head 7′ is of tri-part construction, being composed of a central portion carried by the support or shank 4 and two outer portions 11′ connected thereto by hinges 11 which hinged portions have the sockets 8′ formed therein. For the purpose of holding the hinged outer portions 11 in position, bowed springs 12 are provided, the latter being fixed to the rigid central portion as at 13 while their outer ends are free and bear against the hinged portions 11′.

For the purpose of affording angular or tilting adjustment of the heads 7 and 7′ about the central axis of the supporting arms or shanks 4, wing nuts 14 are provided bearing against washers 15.

In operation, the rods 9 are first inserted in the hinged socket portions or ends of the head 7′ and are then moved into position in the head 7 by the guides 10, the hinged portions 11′ yielding to allow the rods to be properly positioned. When the rods are in position the springs 12 act thereon to maintain a constant pressure and thereby prevent their accidental displacement.

In narrow fabric weaving and particularly in silk weaving of narrow fabrics it is desirable to be able to adjust the rods to impart various degrees of frictional resistance to yarn or thread passing over them. In order that this may be accomplished, the heads 7 and 7′ are tiltable about an axis through their centers. The resistance to motion is therefore optional with the operator. Further it is desirable to allow the thread or yarn to pass off the rods in a plane whose elevation with reference to the reed of the loom may be adjusted; for this reason wing nuts 5 are provided which allow any elevation the operator desires within the confines of the supports 4.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. In a device of the class described, a base having upturned end portions formed with guides, bifurcated shanks slidable in said guides, locking means carried by said upturned portions and engaging between the furcations of said shanks, a head pivotally carried by one of said shanks, and having spaced sockets near its ends, U-shaped socket guides carried by said head adjacent its sockets, a second head pivotally carried by the other of said shanks, hinged end por-

tions carried by said second head and having sockets, bowed springs carried by said second head and exerting pressure on said hinged portions, means carried by said supports whereby the tiltable adjustment of said heads about their pivots may be fixed, and rods carried in the sockets of said heads and maintained in position by the pressure of said springs.

2. In combination with a base having upturned end portions, shanks having heads, means to mount said shanks on the end portions of the base for vertical adjustment, means carried by said shanks for pivotal adjustment of said heads, one of the heads having spaced sockets near its ends, the other head having hinged end portions with sockets therein, bowed springs carried by said second head and exerting pressure on said hinged supports, rods carried in the sockets of said heads and maintained in position the pressure of said springs and means carried by said first named head to guide the rods into position.

3. In combination with a base and a pair of rods, a pair of spaced rod supporting members one of which has yieldable socket bearing end portions, means to hingedly connect said yieldable end portions to the said member, spring means to tension said yieldable end portions to hold said rods in position and means to adjustably mount said rod supporting members with relation to the base.

4. In a warping machine, a frame, a pair of lease rods, a pair of spaced lease rod supporting parts carried by the frame and having sockets to receive the ends of the rods therein, means to hingedly connect one of the socket bearing parts for each of the rods to the frame, and spring means to tension said hinged parts.

5. In a warping machine, a pair of lease rods, a pair of spaced lease rod supporting parts carried by the frame and having sockets to receive the ends of the rods therein, means to hingedly connect each of the socket bearing parts of one of the members to the latter, and spring means carried by said member to tension each of the socket bearing parts thereof.

6. In a warping machine, a frame having spaced lease rod supporting parts provided with sockets to receive the ends of the rods therein, means to mount one of the socket bearing parts for each of the rods for movement toward and away from the rods, and spring means independent of the mounting means to yieldably urge said ones of the socket bearing parts, toward the rods.

7. In a warping machine, a frame having spaced lease rod socket members to receive the ends of the rods therein, means to mount one of the members for each of the rods for movement toward and away from the rods, and independent means to yieldingly urge said ones of the socket bearing members toward the rods.

In testimony whereof I have signed my name to this specification.

JOHN B. YACOVONE.