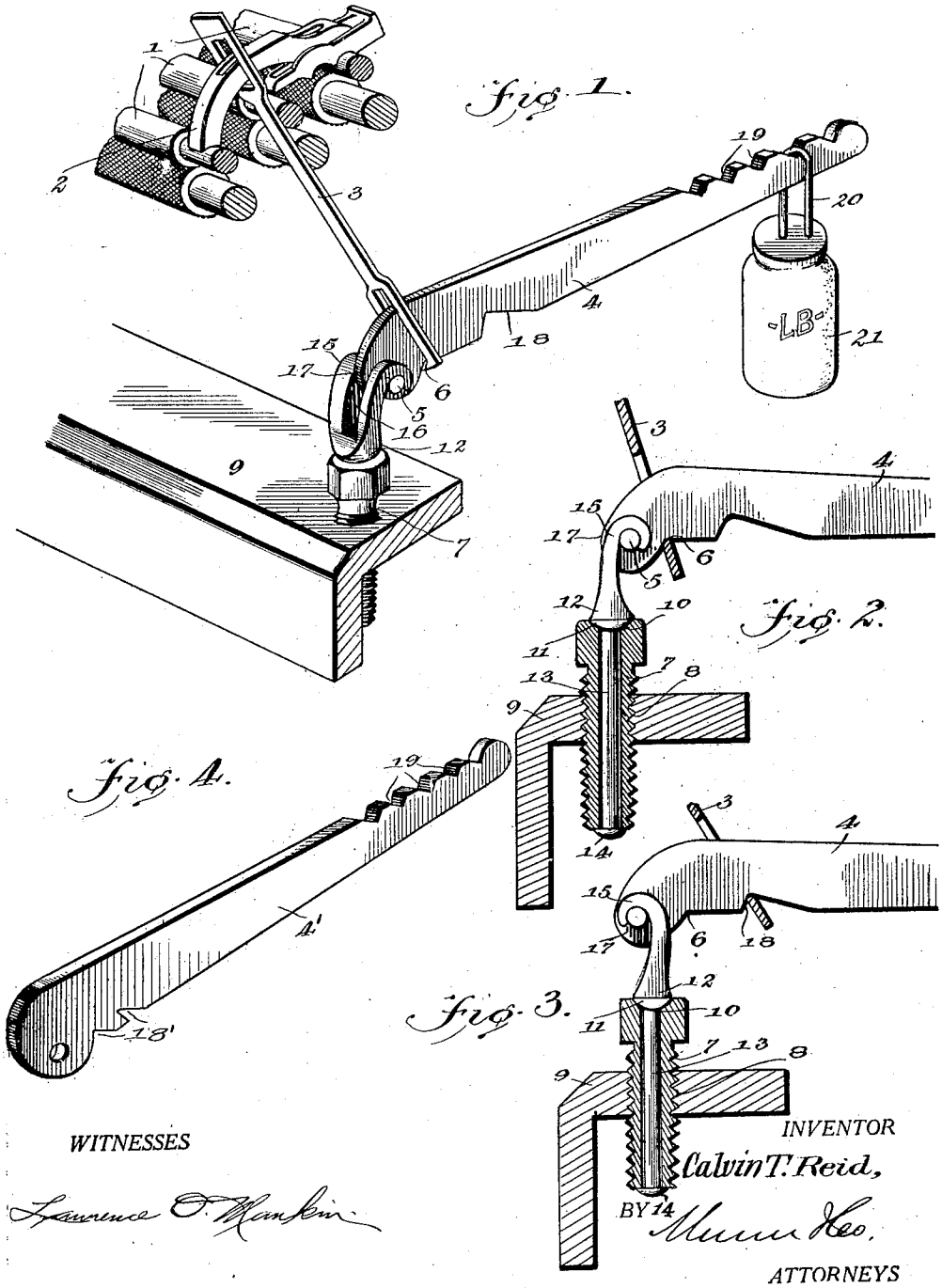
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WEIGHT CHANGING DEVICE FOR TOP ROLL SADDLE MECHANISM

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WEIGHT-CHANGING DEVICE FOR TOP-ROLL SADDLE MECHANISM.

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To all whom it may concern:

Be it known that I, CALVIN THOMAS REID, a citizen of the United States, and resident of Greenville, in the county of Greenville and State of South Carolina, have invented certain new and useful Improvements in Weight-Changing Devices for Top-Roll Saddle Mechanism, of which the following is a specification.

My invention relates to improvements in weight changing devices for top roll saddle mechanisms for spinning frames, and it consists in the combinations, constructions, and arrangements herein described and claimed.

An object of the invention is to provide a device of the character described which is of simplified construction and is constructed in such manner that the effective force of a given weight on the top rolls can be varied quickly and easily, as desired.

A further object of the invention is to provide a mechanism of the character described which serves to dissipate to a relatively great extent the stresses resulting from the vibration of the spinning frame without transmitting such stresses to the saddle and thence to the rolls.

A further object of the invention is to provide a mechanism of the character described which embodies means for distributing the load resulting from the provision of a lever carrying a given weight so that the load on the middle and back rolls will be relatively slight.

A still further object of the invention is to provide a mechanism of the character described which will be strong and durable, not likely to wear out readily in service and thoroughly practical commercially.

Other objects and advantages will be apparent from the following description, considered in conjunction with the accompanying drawings, in which—

Figure 1 is a fragmentary perspective view, showing a top roll mechanism embodying the invention.

Figure 2 is a transverse vertical section through a portion of the mechanism exhibited in Figure 1,

Figure 3 is a view similar to Figure 2, showing the fulcrum for the lever turned 180° from the position shown in the preceding views and the stirrup engaged with the lever at a point different from that at which it engages the lever when in the position illustrated in the preceding views, and

Figure 4 is a perspective view showing a modified form of lever.

Referring now to the drawings and particularly to Figure 1 thereof, the top rolls are designated at 1, 2 denotes the saddle for the top rolls and 3 is the stirrup which connects the saddle with a lever 4.

The lever 4 has the form of a flat bar intersected adjacent to one of its ends by a pin 5 which extends equal distances beyond the opposite flat faces of the lever and is secured to the lever in any suitable known manner, as by having a force fit with an opening through the lever, whereby the extending ends of the pin provide journals or trunnions which are circular in cross sectional contour and extend at right angles to the general plane of the lever. The pin 5 may be made of hardened steel or like material so that the wear thereon will be slight. The end portion of the lever 4 carrying the pin 5 may extend obliquely to the longitudinal axis of the major portion of the lever, as in the form of the device illustrated in Figures 1 to 3 inclusive, thereby defining a notch or indentation 6 in the lower edge of the lever at the juncture of the said end portion and the major portion of the lever.

The fulcrum for the lever 4 includes a vertically disposed bushing 7 having external screw threads for engaging the threaded vertical opening 8 in the horizontal portion of the roller beam 9. The bushing 7 is relatively enlarged adjacent to its upper end and is fashioned for engagement with the jaws of a wrench or like tool so that the bushing may be conveniently manipulated to vary as desired the length of the portion thereof extending vertically above the roller beam. The bore of the bushing 7 is enlarged at its upper end as indicated at 10 to provide a seat for an annular shoulder 11 which merges the head portion 12 of a standard which also is included in the fulcrum into the shank 13 of the standard. The shank 13 depends through the bore of the bushing beyond the lower end of the latter so that the shoulder 11 rests upon the seat 10 and the standard then is held against axial movement relatively to the seat in any suitable known manner as by having the lower end of the shank 13 upset, as indicated at 14, by being pro-

vided with threads engaging the threads of a nut or by being provided with a cotter pin. The arrangement is such that the standard is mounted to rotate about a vertical axis independently of the bushing 7, the annular shoulder 11 being beveled or convexly curved in cross sectional contour and the seat 10 being complementarily beveled or curved in cross sectional contour so that the rotation of the standard independently of the bushing will result in but relatively little wear on the relatively moving surfaces of the standard and bushing.

The head 12 of the standard is elongated vertically and is fashioned into hook-shape as indicated at 15, the hook-shaped portion thereof being bifurcated by a vertical slot 16 which extends from the upper end of the hook-shaped portion midway between the side walls of the latter for the greater part of the length of the head. The hook-shaped portion of the head being split in the manner just described, each of the furcations thereof is provided with a bill which forms a bearing for one of the end portions of the pin 5 when the end portion of the lever 4 provided with the pin 5 is inserted in the slot 6. The end portion of the lever provided with the pin 5 has the corners thereof rounded off as indicated at 17 to afford clearance for the bottom wall of the slot when the lever 4 is swung about the axis of the pin 5 and the ends of the latter are engaged with the bill portion of the furcations of the standard head.

The lever 4 is provided with a notch 18 in its lower edge adjacent to the end of the lever which is provided with the pin 5 and in spaced relation to the notch or indentation 6 and a load on the top roll may be varied by arranging the stirrup 3 in engagement with the notch 6 and the notch 18 selectively. For example, the stirrup 3 may be engaged with the notch 6 when the hook-shaped portion of the standard head is turned toward the adjacent end of the lever, as illustrated in Figures 1 and 2 and the stirrup 3 may be engaged with the notch 18 when the hook-shaped head of the standard is turned away from the adjacent end of the lever, as illustrated in Figure 3. The lever 4 also is provided with a plurality of notches 19 in its upper edge extending in spaced relation to each other and to the free end of the lever and adapted to be engaged by a loop 20 or the like, whereby a weight 21 may be suspended from the lever at various points along the length of the latter.

The lever illustrated in Figure 4 is designated 4′ and differs from the lever 4 in that the end portion of the lever 4′ that has the transverse opening therethrough for the reception of the pin 5 (not shown in Fig. 4) extends substantially in alignment with the remaining portion thereof.

Also, when the form of lever illustrated in Figure 4 is employed, two notches 18′ are provided in the lower edge of the lever, one of the notches 18 being located in the position corresponding to that of the notch or indentation 6 and the other notch 18′ being located in the position corresponding to that of the notch 18 of the form of the lever illustrated in the preceding views. The lever illustrated in Figure 4 will be of greater length than that illustrated in Figures 1 to 3 inclusive but will be identical with the latter in all essential respects other than those pointed out in the foregoing.

From the foregoing description of the various parts of the device, the operation thereof may be readily understood. It will be manifest that a top roll saddle mechanism embodying my invention will be strong and durable, since the only part thereof on which any appreciable wear may occur is the pin 5 which may be made of hardened steel and which can be replaced when required at slight cost. The lever 4 or 4′ will be held against any appreciable lateral movement or oscillatory movement about its longitudinal axis because of the position of the side walls of the slot 16 in respect to the side walls of the portion of the lever inserted in the slot. The load on the top roll can be varied by adjusting the relation of the stirrup 3 to the lever 4 or 4′, by adjusting the position of the weight 21 along the lever or by adjusting the positions of both the stirrup 3 and the weight 21 along the lever.

Obviously, my invention is susceptible of embodiment in forms other than that illustrated in the accompanying drawing and I therefore consider as my own all modifications and adaptations of the form of the device disclosed herein which fairly fall within the scope of the appended claims.

Having thus described the invention, what is claimed is:—

1. In a top roll saddle mechanism, a fulcrum including a rotatable vertical standard having a laterally and downwardly turned hook shaped head portion, and a weighted lever engaged with the hook shaped head portion of the fulcrum.

2. In a top roll saddle mechanism, a fulcrum including a standard having a laterally and downwardly turned hook shaped head portion mounted to rotate about a vertical axis, said hook shaped head portion being bifurcated vertically from its outer end, and a weighted lever having an end portion insertable between the furcations of the hook shaped head portion and having laterally extending journals engaging with the bill portions of the furcations.

3. In a top roll saddle mechanism, a fulcrum including a standard having a hook shaped head portion, said hook shaped head portion being bifurcated vertically from its

outer end, a weighted lever having an end portion insertable between the furcations of the hook shaped head portion and having laterally extending journals engaging with the bill portions of the furcations, and means for supporting the standard for rotation about a vertical axis, said lever having a plurality of spaced apart notches in its lower edge adjacent to the end thereof provided with the journals.

4. In a top roll saddle mechanism, a fulcrum including a standard having a laterally and downwardly turned hook shaped head portion, said hook shaped head portion being bifurcated vertically from its outer end, a weighted lever having an end portion insertable between the furcations of the hook shaped head portion and having laterally extending journals engaging with the bill portions of the furcations, and means for supporting the standard for rotation about a vertical axis, said lever having a plurality of spaced apart notches in its lower edge adjacent to the end thereof provided with the journals.

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