Jan. 23, 1934. L. Y. RANDALL 1,944,369

DOBBY DRIVE

Filed May 25, 1931 2 Sheets-Sheet 1

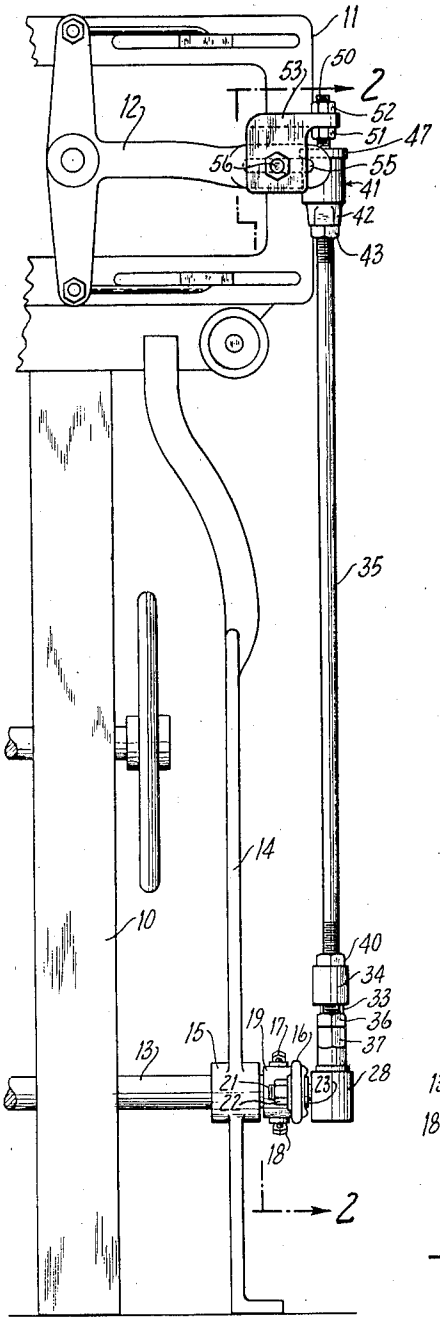


Fig. 1

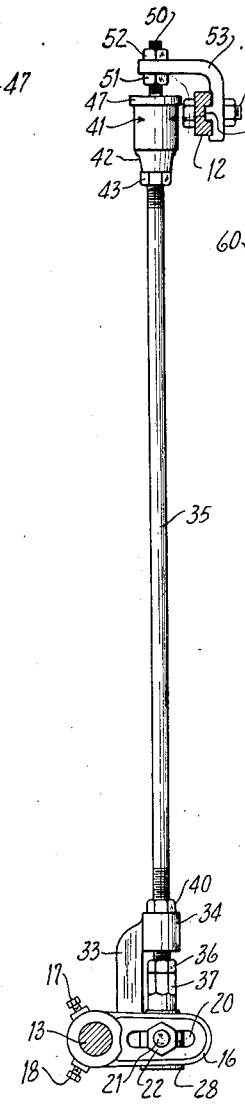


Fig. 2

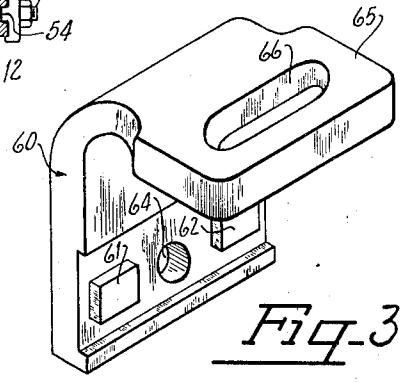


Fig. 3

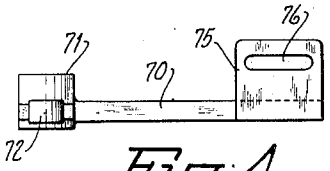


Fig. 4

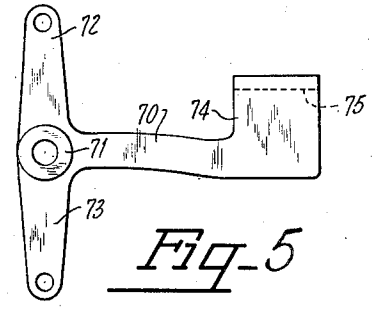


Fig. 5

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Jan. 23, 1934. L. Y. RANDALL 1,944,369

DOBBY DRIVE

Filed May 25, 1931 2 Sheets-Sheet 2

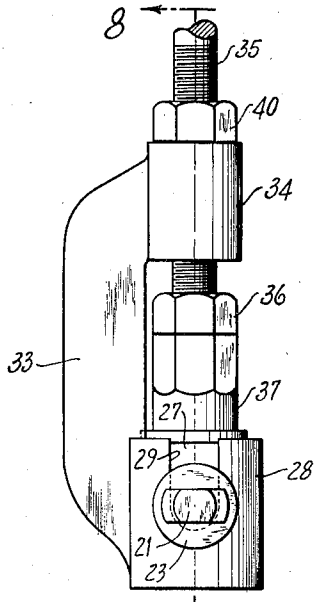


Fig. 7

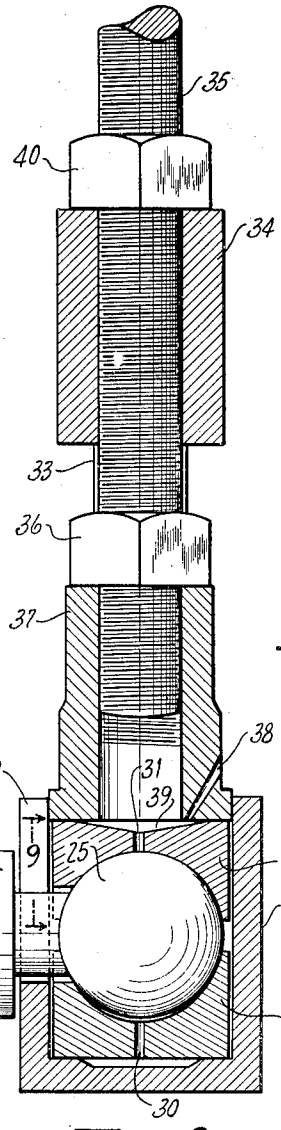


Fig. 8

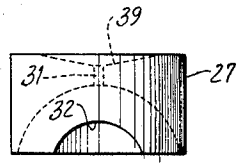


Fig. 9

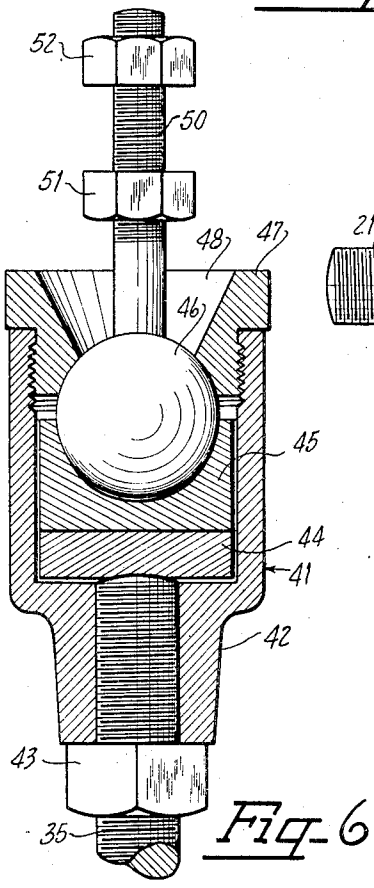


Fig. 6

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UNITED STATES PATENT OFFICE

1,944,369

DOBBY DRIVE

Lucius Y. Randall, Gaffney, S. C.

Application May 25, 1931. Serial No. 539,811

9 Claims. (Cl. 139—59)

This invention relates to a dobby drive mechanism and more especially to means for driving the rocker arm of a dobby head from the crank shaft of the loom wherein means are provided whereby the links of the connecting rod between the crank shaft and the rocker arm can be adjusted without dismantling any of the connecting parts.

An object of this invention is to provide a dobby drive having a connecting apparatus which is straight and is not curved or off-set as has heretofore been the practice in connecting rods for driving the rocker arm of the dobby head. I accomplish this by providing a peculiarly shaped bracket adapted to be attached to a rocker arm or by casting the bracket integral with the rocker arm so as to provide a means for connection to the rocker arm permitting the connecting rod to be connected thereto and to the crankshaft of the loom for driving the rocker arm so that the position of the connecting rod is such that it does not have to have any bends therein to cause it to miss certain parts of the machine. It is a well known fact that when a connecting rod has to be bent out of a straight line that its driving power is weakened and there is a certain amount of resiliency in the connecting rod which renders it less efficient than a straight connecting rod. By providing the apparatus as shown in the drawings, I attain as one of the objects the driving of the rocker arm by a straight connecting rod.

Another object of this invention is to provide a dobby drive for the rocker arm of a loom having a connecting rod and universal joints for connecting said connecting rod at both of its ends to the crank shaft of the loom and the rocker arm of the loom in such a manner as to permit adjustment of the length of the connecting rod and the bearings associated therewith without dismantling any of the parts or removing any of the connections either from the rocker arm or the crank shaft.

Some of the objects of the invention having been stated other objects will appear as the description proceeds when taken in connection with the accompanying drawings, in which—

Figure 1 is a side elevation of an end portion of a loom having a dobby head and showing my invention applied thereto;

Figure 2 is a view taken along the line 2—2 in Figure 1;

Figure 3 is a perspective view of a form of bracket adapted to be secured to the rocker arm;

Figure 4 is a top plan view of a rocker arm having the brackets made integral therewith;

Figure 5 is a side elevation looking from the lower side of Figure 4;

Figure 6 is a vertical sectional view taken thru the top universal joint of the driving mechanism;

Figure 7 is a side elevation of the lower joint associated with the connecting rod;

Figure 8 is a vertical sectional view taken along the line 8—8 in Figure 7;

Figure 9 is a side elevation taken along the line 9—9 in Figure 8.

Referring more specifically to the drawings the numeral 10 indicates the framework of a loom having a dobby head 11 and a rocker arm 12 and a crank shaft 13 and in some instances bracket 14 having a bearing portion 15 for partial support of the crank shaft 13. To this crank shaft 13 I secure an arm 16 by means of set screws 17 and 18 which arm has a hub portion 19 in which the set screws 17 and 18 appear. This arm 16 has a slot 20 therein in which threaded member 21 is secured by means of a nut 22 being threadably mounted on the end thereof and this threaded member 21 has an enlargement 23 thereon against which the arm 16 is held by means of nut 22. The threaded member 21 is flattened on the upper and lower sides thereof to prevent its turning in slot 20. This member 21 has on the other end thereof a ball 25 which is engaged by bearing members 26 and 27 mounted in a well 28 which well 28 has a slot 29 therein in which member 21 is adapted to fit. Members 26 and 27 have oil holes 30 and 31 therein thru which the ball 25 may be lubricated. Members 26 and 27 have circular cut away portions 32 as indicated in Figure 9.

Well member 28 has integral therewith an arm 33 which projects upwardly and has a bearing portion 34 having a hole vertically disposed therethrough, in which connecting rod 35 is threadably engaged. Threadably engaging connecting rod 35 between portions 28 and 34 is a nut 36 and immediately below nut 36 is threadably secured on rod 35 a member 37 which projects into well 28 and has an oil hole 38 therein by means of which lubricant can be led to concave portion 39 on the upper side of member 28. Nut 36 serves as a lock nut to lock member 37 in position when it is adjusted downwardly to a point to form a proper pressure against ball 25. A lock nut 40 is provided above portion 34 so that when rod 35 is moved with relation to member 34 to adjust the relative position between these two members, the lock nut 40 can be driven home to hold the members in adjusted position.

Member 34 is threaded on the interior thereof and is threadably engaged by rod 35. Rod 35 extends upwardly in a straight direction and has secured to the upper end thereof a universal joint 41 which joint comprises a housing 42 having a vertically disposed interior threaded hole in the bottom thereof in which is threadably secured the upper end of connecting rod 35 and a lock nut 43 is threadably secured on rod 35 for locking the

casing 42 in position with relation to connecting rod 35.

This casing 42 has therein a block 44 on which rests a bearing member 45 having a semi-circular cavity in the upper face thereof in which a ball 46 is adapted to rest and a nut 47 is threadably secured in the upper end of housing 42 and has a bearing surface cut to fit ball 46 which fits against the ball 46 for forming a bearing surface between members 47 and 45. The cavity in blocks 26 and 45 is cut on the same radius with the center moved downwardly to form a surface in the lower part of the cavities which will not touch the ball, and therefore provides room for a lubricant.

This member 47 is driven home and if desired a coating of shellac or other sealing fluid can be placed between members 47 and 42. Member 47 has a funnel-shaped portion 48 in the upper end thereof communicating with ball 46 by means of which lubricant can be fed to ball 46 and bearing portions 47 and 45.

Projecting from ball 46 is a rod 50 threaded at its upper end having nuts 51 and 52 thereon which are adapted to be secured to a bracket 53 which bracket projects laterally and rearwardly and downwardly and has a tongue 54 thereon adapted to fit into a groove in rocker arm 12 and said rocker arm 12 has a slot 55 therein thru which a bolt 56 passes and said bolt also passes thru bracket 53 to adjust the position of bracket 53 longitudinally along the rocker 12 to impart the proper throw to the rocker arm and the jack-knives carried thereby.

Also if desired, instead of the bracket shaped as shown in Figures 1 and 2, I can provide a bracket 60 having the projections 61 and 62 adapted to fit into the groove in the rocker arm which has a hole 64 adapted to be penetrated by bolt 56 to secure the bracket in position, and this bracket 60 has a laterally projecting portion 65 with an elongated slot 66 therein thru which member 50 may be inserted and secured in position by means of nuts 51 and 52 if desired.

Also instead of having the brackets separated from the rocker arm, I have shown whereby a rocker arm 70 can have a hub portion 71 adapted to be secured on the dobby head of the loom with the arms 72 and 73 projecting upwardly and downwardly therefrom, and on the portion 70 of the rocker arm the bracket 74 can project upwardly and then have the laterally projecting portion 75 with elongated slot 76 therein for securing the bolt 50.

It is thus seen that the driving connections can be adjusted as to length between the two balls 25 and 46 while the parts are in assembled position, as when it is desired to shorten the distance between the balls 25 and 46 that nuts 36 and 40 may be loosened and run upwardly on the connecting rod 35 and then the rod 35 can be turned and will move downwardly in the portions 34 and 37 and when the proper adjustment is secured the parts will be tightened on position, and when the rod is to be lengthened as to the distance between the balls 25 and 46 the reverse operation will be effected, and in this way the throw imparted to the rocker arm can be adjusted without disconnecting any of the parts from the crank or the rocker arm. Also, as the ball 46 becomes worn, nut 43 can be loosened and housing 42 turned to force members 44 and 45 upwardly to form a proper bearing for ball 46.

In the drawings and specification there has been set forth a preferred embodiment of the invention and although specific terms are employed they are used in a generic and descriptive sense only and not for purposes of limitation, the scope of the invention being set forth in the appended claims.

I claim:

1. A drive for the rocker arm of a dobby loom having a crank shaft with an arm thereon, a connecting rod, means for securing the rod to the crank, means for securing the rod to the rocker arm, said means for connecting the rod to the rocker arm comprising a bracket having means for securing the same to the rocker arm, said bracket extending laterally and radially outward from the pivot point of the rocker arm to increase the leverage of the rocker arm to permit the use of a straight line connecting rod.

2. In a drive for the rocker arm of a dobby loom, said loom having a crank shaft, said drive comprising a connecting rod, means for connecting one end of the rod to the rocker arm, means for connecting the other end of the rod to the crank shaft comprising a housing threadably secured in the lower end of the rod, a ball and socket joint in said housing and means for connecting the ball to the crank.

3. In a drive for the rocker arm of a dobby loom, said loom having a driving shaft and a crank thereon, means for securing a connecting rod to the crank, a bracket adjustably secured on the rocker arm and extending laterally and radially outward with respect to the pivot point of the rocker arm and to which the other end of the connecting rod is secured.

4. In a drive for the rocker arm of a dobby loom, said loom having a driving shaft and a crank thereon, means for securing a connecting rod to the crank, a bracket adjustably secured on the rocker arm and extending laterally and radially outward with respect to the pivot point of the rocker arm and to which the other end of the connecting rod is mounted, the means for securing the connecting rod to the crank being adjustable along the connecting rod while the drive is in assembled position.

5. In a drive for dobby looms, with said loom being provided with a rocker arm and a crank shaft with a crank thereon, said crank having a radially disposed slot therein and said rocker arm having a bracket secured thereto, said bracket projecting laterally from said rocker arm and also projecting radially outward with respect to the pivot point of the rocker arm, a connecting rod, a ball and socket joint at the upper end of the connecting rod, an extension from said ball secured in said bracket, a ball and socket joint in the lower end of the connecting rod, an extension from said lower ball projecting into said slot and means for adjustably mounting said extension in said slot.

6. In a dobby drive for looms, provided with a crank shaft having a crank thereon, and being provided with a rocker arm having a laterally extending bracket secured thereto, a connecting rod, a ball and socket connection between the upper end of the connecting rod and said bracket, a ball and socket connection between the lower end of said connecting rod and said crank, said ball and socket connection on the lower end of the connecting rod comprising a member having laterally projecting vertically alined portions, the upper projection having a vertically disposed threaded hole therein, lower end of said rod being threadably mounted in said threaded hole, the lower projection having a well therein, upper and lower bearing members in said well, a ball

mounted between said bearing members and having an extension projecting to the exterior of said well and being adjustably secured to said crank and a member threadably secured on said connecting rod and projecting into said well to hold the bearing members and said ball in adjusted position.

7. In a loom having a crank shaft and a rocker arm and a connecting rod disposed therebetween, a crank secured to said crank shaft and having a radially disposed slot therein, a member having upper and lower laterally projecting portions, the upper portion being threadably secured to the connecting rod and the lower portion having a well therein, a ball and socket disposed in said well, said well having a slot in its sidewall portion, an extension from said ball projecting thru the slot in said sidewall portion and being adjustably secured in said radially disposed slot and adjustable means on the lower end of said connecting rod for holding said ball and socket joint in position.

8. In a dobby loom having a rocker arm and a crank shaft provided with a crank having a radially disposed slot therein, a connecting rod, ball and socket connections between the ends of the connecting rod and said rocker arm and said crank, the ball and socket connection between the lower end of said connecting rod and said crank comprising a member having laterally projecting portions spaced apart from each other and disposed one above the other, means threadably receiving the connecting rod in said upper projection, the lower projection having a well therein, a ball mounted in said well, bearing members partially surrounding said ball, a member threadably secured on the lower end of said connecting rod for pressing said bearing members against said ball, said well having a vertically disposed slot in its sidewall, an extension on said lower ball projecting thru said slot in said well and also thru said slot in said crank and means for adjustably securing said extension in said slot in said crank.

9. In a loom having a crank shaft and a rocker arm and a connecting rod disposed therebetween, a crank secured to said crank shaft and having a radially disposed slot therein, a member having upper and lower laterally projecting portions, the upper portion being threadably secured to the connecting rod and the lower portion having a well therein, a ball and socket disposed in said well, said well having a slot in its sidewall portion, an extension from said ball projecting through the slot in said sidewall portion and being adjustably secured in said radially disposed slot and adjustable means for holding said ball and socket joint in position.

LUCIUS Y. RANDALL.