

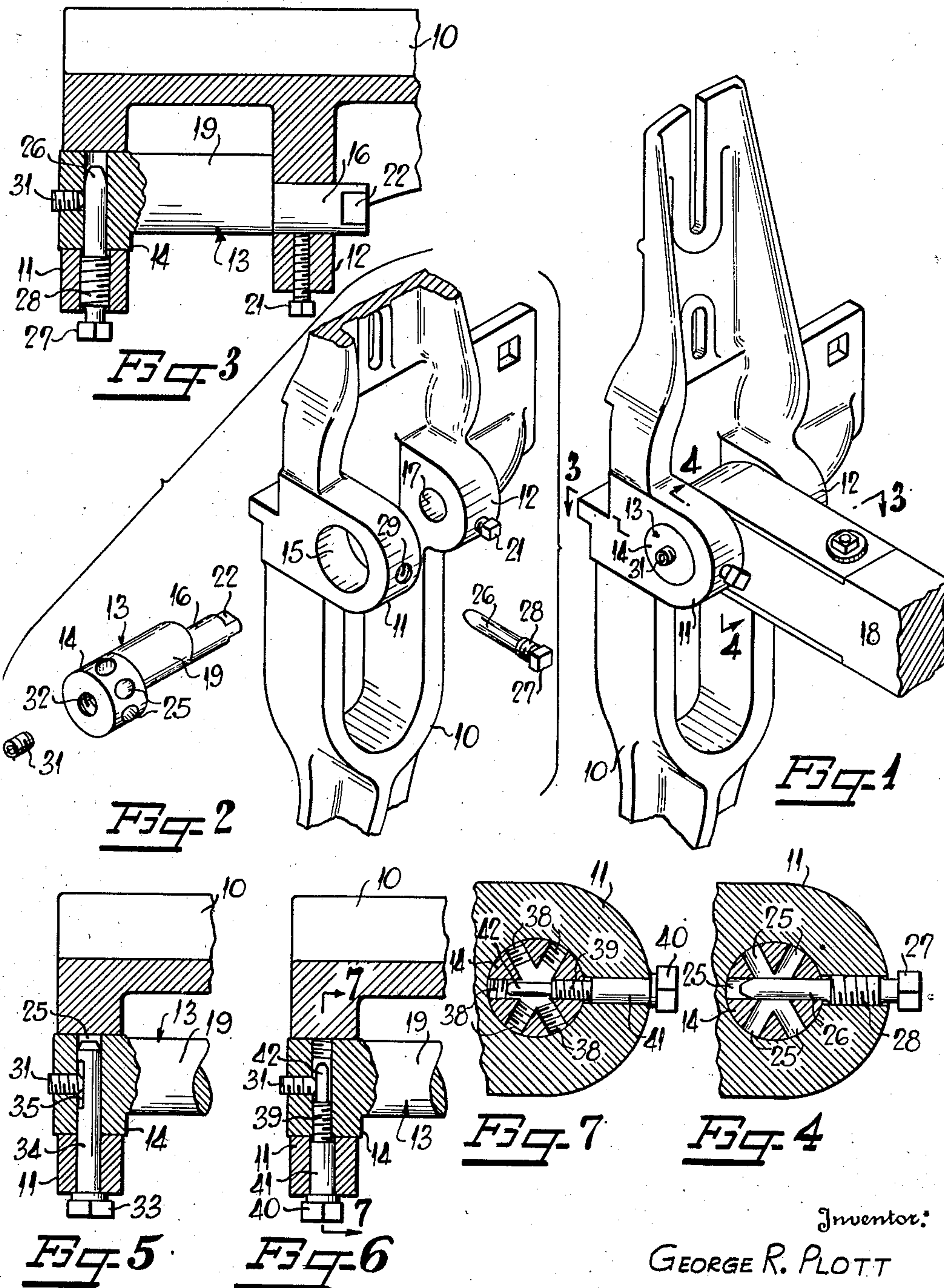
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ECCENTRIC BOLT LOCK FOR LOOM SWORDS

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## ECCENTRIC BOLT LOCK FOR LOOM SWORDS

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This invention relates to an eccentric for lay swords and more especially to an eccentric having locking means associated therewith for securing the same in various positions relative to the swords. At the junction point of the pitman and the upper end of the sword an eccentric bolt normally penetrates a pair of spaced projections extending outwardly therefrom. Heretofore, this eccentric bolt has been secured in the proper position by means of a set screw which penetrates the projection and has its end engaging the periphery of the eccentric. Since the set screw is threadably secured in the lug or projection, it is evident that whatever pressure exerted upon the periphery of the eccentric bolt in order to hold it in proper position, must be carried by the lug or projection. If the operator, inadvertently, applies too much pressure upon the screw there is great danger of breaking the projection off of the lay sword and thereby rendering the sword useless until repair is made.

The eccentric is used in conjunction with the pitman which oscillates the lay of the loom, and it is necessary to turn this eccentric at various positions relative to the sword in order to regulate the effective length of the pitman. Since the eccentric is located at a point in the loom which is not easily accessible to the operator, it very frequently happens that during an adjustment the operator applies too much pressure upon the set screw resulting in damage to the sword.

It is therefore, an object of this invention to provide an eccentric for lay swords of a loom, said eccentric having a locking means associated with the head portion thereof for locking the eccentric in adjusted positions in the sword without exerting any relative stress between the eccentric and the portion of the lay sword in which the eccentric is mounted.

It is a further object of the invention to provide an eccentric for lay swords, said eccentric having a plurality of radially disposed cavities or holes in the head portion thereof with inter-engaging means penetrating one of said holes and a portion of the lay sword to adjustably position said eccentric in said lay sword. This inter-engaging means may comprise a set screw having the base portion thereof adjacent its head, threadably secured in the projection on the sword and its projecting unthreaded portion penetrating the eccentric bolt or conversely, it may have its projecting portion threadably secured in the eccentric bolt and its base portion unthreaded and normally penetrating a portion of the lay sword.

It is still a further object of this invention to provide an eccentric for lay swords having means for locking the same in adjusted position relative to the sword, said locking means comprising an unthreaded pin normally penetrating a lug of said sword and a selected radially disposed hole in said eccentric with means disposed in the eccentric for securing the end of the pin therein.

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 drawing, in which:—

Figure 1 is an isometric view of the junction point of the upper end of a lay sword and its pitman;

Figure 2 is an exploded isometric view of the parts at the junction point of the pitman and the lay sword, omitting the pitman;

Figure 3 is a sectional plan view, omitting the pitman, taken along line 3—3 in Figure 1;

Figure 4 is a vertical, sectional, detail view taken along line 4—4 in Figure 1;

Figure 5 is a sectional view similar to the left-hand portion of Figure 3 showing a slightly modified form of locking means for the eccentric;

Figure 6 is a view similar to Figure 5 but showing still another modified form of the invention;

Figure 7 is a sectional, detail view similar to Figure 4 and taken along line 7—7 in Figure 6.

Referring more specifically to the drawing, the numeral 10 indicates the upper portion of a lay sword of a loom, there being two of such members which support the lay of a loom and have their lower ends fixed on a rocker shaft. The sword 10 has integral therewith suitable circular projections or lugs 11 and 12 in which are adapted to fit an eccentric 13. The portion 14 of eccentric 13 is adapted to fit in bore 15 of lug 11, whereas, the portion 16 is adapted to fit in bore 17 of lug 12. The pitman 18 has its end secured around the intermediate portion 19 of the eccentric during the normal operation of the loom. In order to secure the portion 16 against vibration in the hole 17, a conventional set screw 21 is threadably secured in lug 12 which screw has its end normally contacting this portion.

When it is desired to adjust the effective length of the pitman 18 a suitable wrench is used to engage the flattened portion 22 of the eccentric to turn the same to the desired position, after which, the set screw 21 is tightened and the portion 14 is locked in its proper position.

When locking the head portion 14 in the adjusted position within the lug or projection 11, it is desirable to eliminate any internal relative



stress between the two members which may cause breakage of the projection since the material out of which the lay sword is made is usually cast iron. Therefore, a plurality of radially disposed holes 25 have been provided in the head portion 14, said holes being adapted to accommodate the projecting unthreaded portion 26 of pin 27. The pin 27 has a threaded portion 28 near its base which is adapted to be threadably secured in the tapped bore 29 of lug 11.

By providing this type of locking means it is seen that there is no relative radial stress between the eccentric bolt head 14 and the lug 11, therefore, it will be impossible for the lug to be broken off due to the exertion of undue stress upon the pin 27 by the operator.

It is further seen that the threads 28 cannot engage the threads in bore 29 of lug 11 until one of the holes 25 have coincided with the tapped bore 29. In other words, in the present showing, the eccentric must be in one of the six different positions before the pin 27 can be inserted to locking position. After the pin 27 has been inserted to this position a suitable set screw 31 is threadably secured in tapped bore 32 of the eccentric 13. The leading end of set screw 31 normally engages the unthreaded portion 26 of the pin 27 to prevent the same from becoming disengaged from the lug 11.

Figure 5 shows a slightly modified form of the invention in which a pin 33 has been used, said pin having unthreaded portion 34 which penetrates both, the hole in the projection 11 and one of the radially disposed holes 25 in the head portion 14. This bolt is provided with a flattened notch 35 which is engaged by the set screw 31 to hold the same in position after it has been inserted to locking position.

Figures 6 and 7 show still another modified form of the invention in which the head portion 14 of the eccentric has a plurality of radially disposed threaded holes 38 therein which are adapted to be engaged by the threaded portion 39 of pin 40.

Pin 40 has an unthreaded portion 41 which normally penetrates the projection 11 and it also has a second unthreaded portion 42 which is engaged by the set screw 31 after the pin has been inserted to locking position.

It is therefore, seen that I have provided an eccentric for lay swords, said eccentric being adjustable to various positions relative to said sword and having inter-engaging means carried by either the eccentric or the lay sword for locking the eccentric in position relative to the sword.

In the drawing 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. In a member having a round hole therethrough, a bolt having a rounded portion rotatably mounted in said hole, the portion of said bolt fitting in said hole having a plurality of holes extending transversely therethrough and intersecting each other at the longitudinal center of the bolt, said member having a hole therein coinciding with the plane occupied by the holes in the bolt, a pin disposed in said hole in said member and projecting more than half-way through one of the holes in the bolt, means for securing the pin in position in said holes, and means on the bolt adapted to be engaged by a suitable tool for turning the bolt when said pin is removed from one of the holes in the bolt.

2. In a member having a round hole therethrough, a bolt having a rounded portion rotatably mounted in said hole, the portion of said bolt fitting in said hole having a plurality of holes extending transversely therethrough and intersecting each other at the longitudinal center of the bolt, said member having a hole therein coinciding with the plane occupied by the holes in the bolt, a pin disposed in said hole in said member and projecting more than half-way through one of the holes in the bolt, a set screw threadably secured in the longitudinal center of the bolt for engaging said pin and holding it in a selected hole in said bolt, and means on the bolt adapted to be engaged by a suitable tool for turning the bolt when said pin is removed from one of the holes in the bolt.

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