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Freisler et al.

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[54] **ADJUSTABLE SLEY SWORD PIVOTING BEARING**

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[30] **Foreign Application Priority Data**

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[52] **U.S. Cl.** **139/190**

[51] **Int. Cl.** **D03d 49/60**

[58] **Field of Search** ..... 139/190, 191, 188 R, 26, 139/27

[56] **References Cited**

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[57] **ABSTRACT**

The present invention relates to a loom having a reed carried by sley swords, each sley sword being operatively connected to two drive arms, with each drive arm carrying a roller at its free end, the rollers traveling on the face of cam discs to impart to the sley sword pivoting movements taking place about a shaft.

5 Claims, 3 Drawing Figures

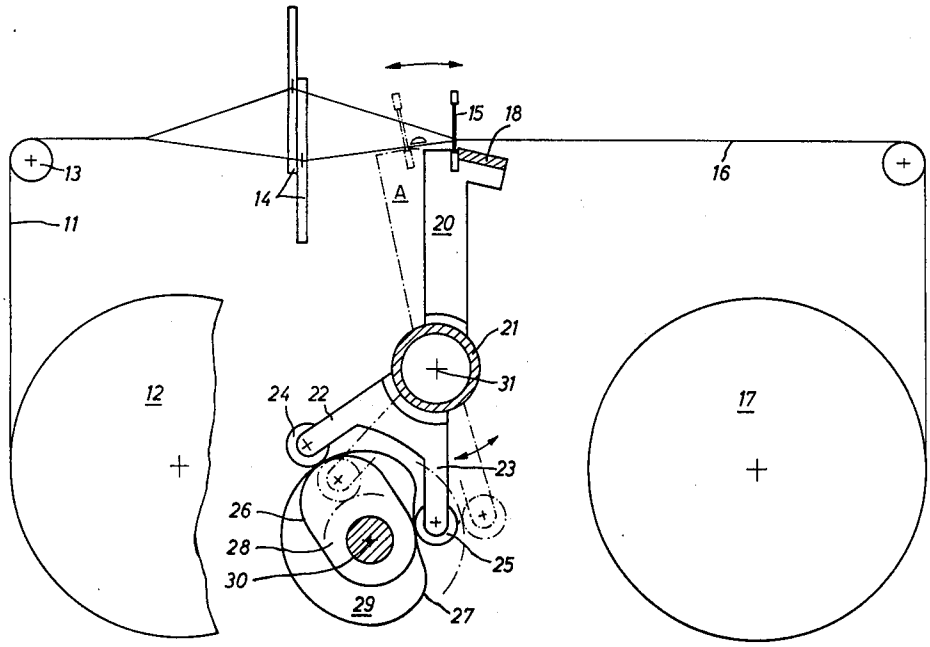


Fig. 1

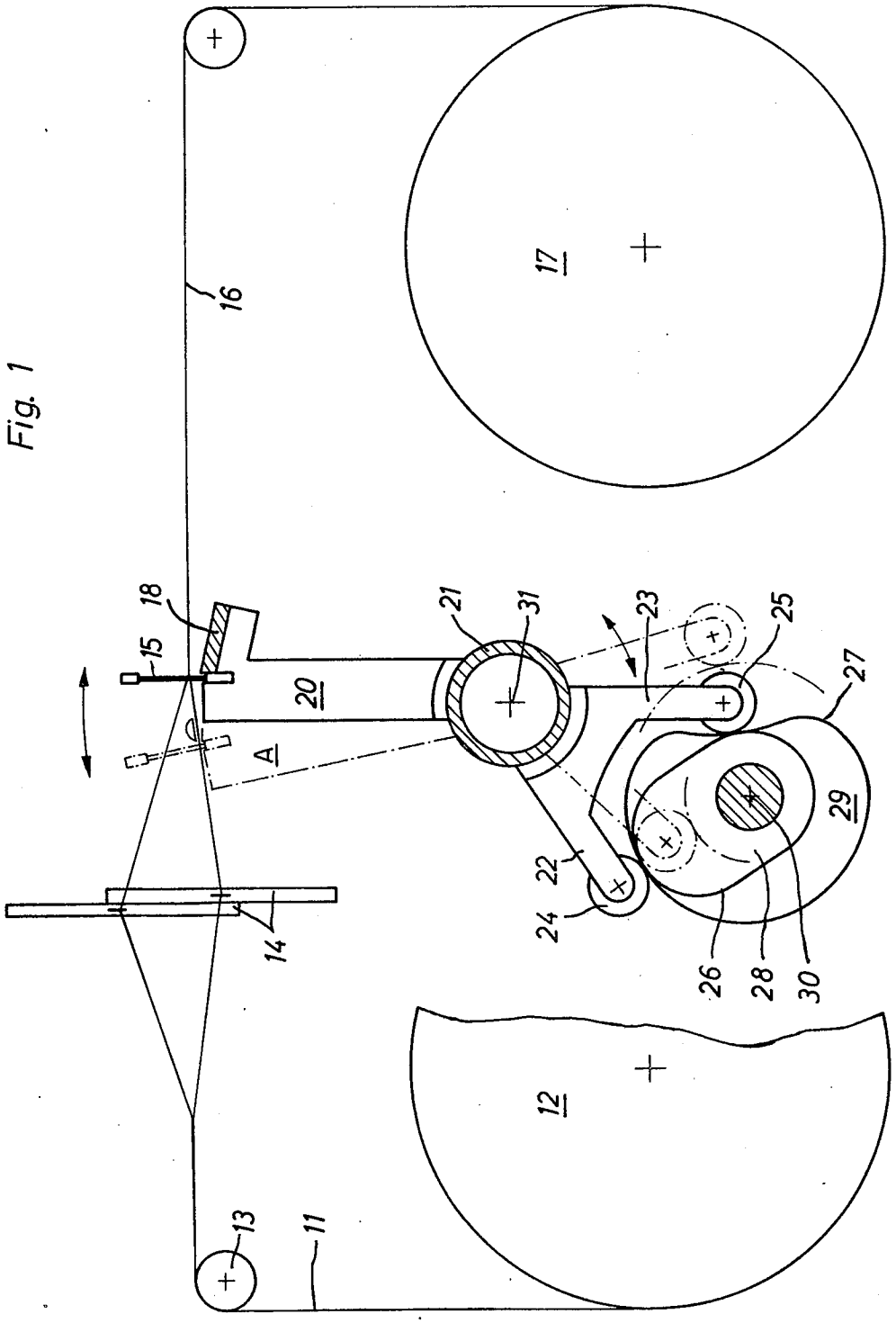


Fig. 3

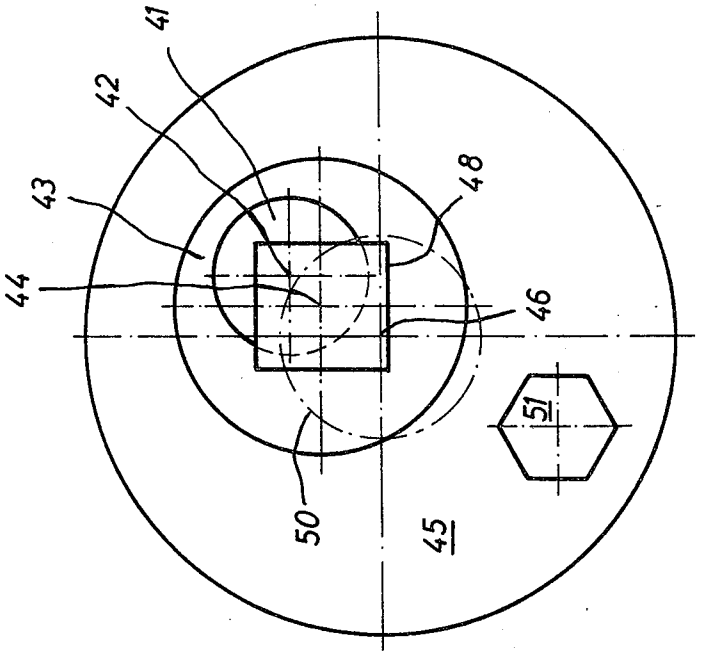
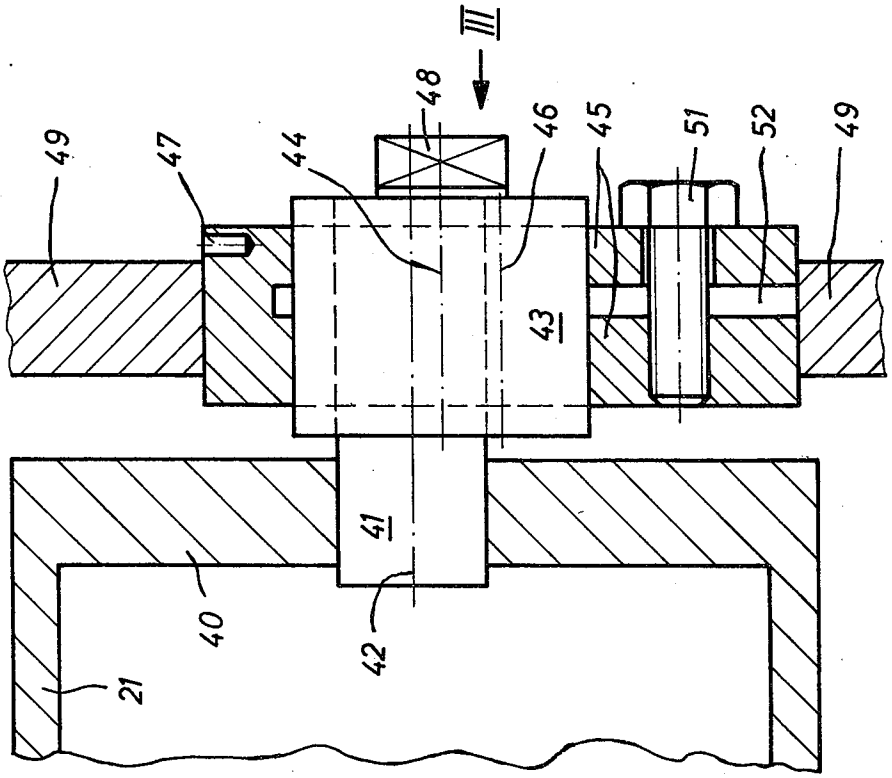


Fig. 2



ADJUSTABLE SLEY SWORD PIVOTING BEARING

BACKGROUND

In reed drives of the loom devices of this invention, the adjustment of the drive arms is of maximum importance. Each of the rollers of the two arms must, during the entire rotation of the cam discs, bear on the cam face continuously and with a high degree of accuracy, and completely uniformly, on the travel faces of the cam discs so as to ensure that the roller of one of the pivot arms does not have clearance or play whereby the roller of the other pivot arm is jammed. This is above all necessary in order that, on shutting down and restarting the loom, no "starting marks" are formed in the cloth. In practice, it has been found that precise adjustment is, in known arrangements, extremely difficult or quite impossible to make to eliminate these disadvantages.

The closest prior art known to the applicants in connection with the invention presented in this application for Letters Patent is in

U.S. Pat. No. 2,624,372
Swiss Pat. No. 4,831
Swiss Pat. No. 533,704.

SUMMARY

It is the purpose of the present invention to make possible precise adjustment of the pivot axis of the drive arms and of the sley sword, i.e., of the first shaft, on a loom. The invention is characterized in that the first shaft is carried for pivoting by a second shaft and is eccentrically arranged relative to the latter, in that the said second shaft is pivotally carried by a third shaft and is arranged eccentrically relative to the latter, and in that the third shaft is attached for rotation in stationary bearings at the loom frame.

BRIEF DESCRIPTION OF THE DRAWINGS

The invention will now be discussed in greater detail with reference to an example of an embodiment and with reference to the drawings, in which:

FIG. 1 shows a lateral view of an arrangement for producing the pivoting movement of the sley swords according to this invention;

FIG. 2 shows a longitudinal section through the bearing of the sley swords; and

FIG. 3 shows a view of the bearing as seen in the direction of the arrow III.

In all figures, like parts have been given the same reference numerals.

DESCRIPTION OF A PREFERRED EMBODIMENT

As will be seen in FIG. 1, warp threads 11 travel from a warp beam 12 over a deflecting roller 13. Subsequently, they are subjected to shed formation by means of the shafts 14. Beating-up of the inserted weft threads is effected by the reeds 15. Finally, the woven cloth 16 is wound-on onto the cloth beam 17.

The reeds 15 are secured to sley 18. The latter is supported by the sley swords 20 (only one shown in FIG. 1). The sley swords 20 are connected to a sley tube 21. Also, two arms 22, 23 are provided and are fastened to the sley tube. Each of the arms 22, 23 is provided at its free end with a travel roller 24 or 25. The roller 24 travels on the face of control cam 26 and the roller 25 on the face of control cam 27. On rotation of the eccentric discs 28, 29, having thereon the control cam faces 26, 27, about a pivot 30, the rollers 24, 25 travel continuously on the face of the control cams 26, 27, whereby the two arms 22, 23, the sley tube 21 and therewith also the sley sword 20 reciprocate continuously about the pivot 31. One extreme position of the pivoting movement is shown in dot-dash lines in FIG. 1 and designated as position A.

FIGS. 2 and 3 show the mounting of the tube 21, in detail. The said tube is, by means of its lateral wall 40, applied fixedly on the first shaft 41 having a central axis 42. The first shaft 41 is introduced into a bore formed in a second shaft 43 having central axis 44. The first shaft 41 is arranged eccentrically relative to the axis 44. Disposed in a longitudinal bore formed in a third shaft 45, having central axis 46, is the second shaft 43. The latter is arranged eccentrically relative to the axis 46. The shaft 45 is installed in rotary bearings in the machine wall 49. Each of the shafts 41, 43, and 45 is arranged for rotation and is separately rotational. For this purpose, the shaft 45 is formed with an aperture 47. For rotating or locking the shaft 45, a pin is inserted in the aperture 47 so that, by manual actuation of the pin, the required form of operation can be effected. For the appropriate purpose, there is employed the square-headed screw 48, which is fast with the shaft 43, so that by means of a spanner, the screw head 48 can be grasped and the shaft 43 adjusted at will.

In the structure of the loom, there is on each side of the latter an arrangement such as is shown in FIG. 2 of shafts 41, 43, 45. The tube 21 extends over the width of the loom and is carried at each of its ends by an arrangement of shafts 41, 43, 45.

On assembly of the loom, there is effected accurate adaptation or adjustment of the rollers 24, 25 to the travel faces 26, 27 of the cam discs 28, 29, in such manner that, after assembly has been completed, by rotating the shafts 43, 45 about their axes 44, 46, the optimal position of the axis 42 is ascertained. Rotation or locking of the shafts 43, 45 is effected, as already mentioned, by means of a spanner applied at the square head 48 or by a pin inserted into the aperture 47. It is known that, by appropriate rotation of the shafts 43, 45, the axis 42 can be brought to any optional point within the circle 50 shown in dot-dash lines in FIG. 3. In this manner, it becomes possible to achieve a degree of accuracy in the positioning of the axis 42 as could not be achieved with means known at the present day.

After the exact position of the axis 42 has been determined, the shafts 43 and 45 are fixed firmly in their position by tightening the screw 51. Tightening of the screw 51 results in bending of the component portions, separated by the slot 52 extending transversely of the pivot axis 46, of the shaft 45, whereby jamming of the said component portions, separated by the slot 52, of the shaft 45 takes place. Thereby, the shafts 43 and 45 are secured against rotation.

It will be appreciated that various changes and modifications may be made within the skill of the art without departing from the spirit and scope of the invention illustrated and described herein.

What is claimed is:

1. Loom having a sley carried by sley swords, wherein each sley sword is operatively connected to two drive arms each carrying a cam roller at its free end, each of said cam rollers traveling on the face of a cam disc so as to impart to the sley a continuous pivoting move-

ient which takes place about a first shaft, characterized in that the said first shaft is carried for rotation by second shaft and is arranged eccentrically relative to aid second shaft, in that the said second shaft is rotational and is carried by a third shaft and is arranged eccentrically relative to said third shaft, and in that said aird shaft is attached for rotation in stationary bearigs positioned in the frame of said loom.

2. Loom according to claim **1** in which said first shaft mounted in an eccentric bore formed in the second aft, and in that the second shaft is in turn mounted an eccentric bore formed in a third shaft, and in that ere is connected with the first shaft a carrier tube on hich said sley swords and said two drive arms are sered.

3. Loom according to claim **2** in which the said second and third shafts each have means accessible from the exterior and to which there can be manually applied a rotating force to said second and third shafts.

4. Loom according to claim **2** in which means is provided for jamming said second and third shafts in any desired rotational position relative to each other.

5. Loom according to claim **4** in which said third shaft is formed with a slot extending transversely of its pivot axis and the component portions, bearing against the slot, of said shaft can be varied in respect of their spacing, so as to obtain jamming of the said third shaft, with said second shaft and said frame of said loom bearing thereagainst.

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