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LOOM HARNESS STRAP CONNECTER

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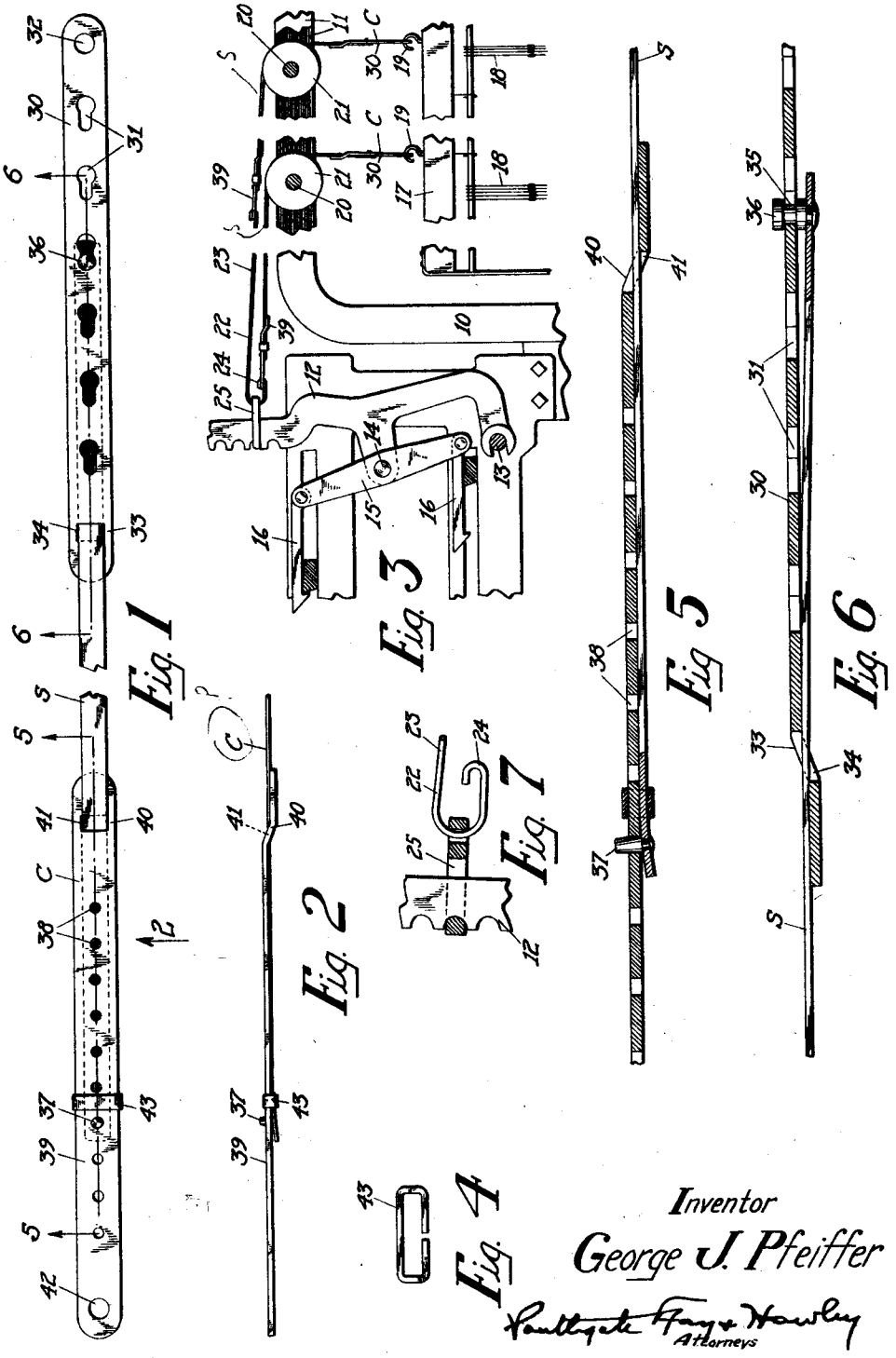


Fig. 1

Fig. 2

Fig. 3

Fig. 4

Fig. 5

Fig. 6

Fig. 7

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LOOM HARNESS-STRAP CONNECTER.

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This invention relates to harness connecters for looms and it is the principal object of the invention to provide an all-metal extensible connection quickly adjustable as to length.

Looms usually employ harness frames by means of which a group of warp threads may be raised or depressed, and these frames are controlled by a so-called harness mechanism having a notched jack or lever. The motion of the jack is communicated to the harness frame by means of a connection which has heretofore usually been made either of leather or cord which are subject to stretching, the connection usually passing around a sheave or pulley when leading from the jack to the frame. It is a further object of my invention to improve upon these connections by making the same out of flat metallic strips which are adjustably connected together to vary the distance between the harness frame and the point of attachment with the harness jack, the metallic construction preventing stretching.

It is a more particular object of my invention to provide a harness connecter of a plurality of metallic strips one of which is provided with a plurality of perforations to receive a projection extending from the other strip, one of said members being flexible to extend around a sheave or pulley.

A more detailed object of my invention is to provide a harness connecter formed of a pair of relatively inflexible metal end members which are connected to the ends of a flexible metallic strap, said metallic strap being adjustably connected to each of the end members, the interval between adjacent points of attachment between one end of the flexible strap and the corresponding inflexible end members being different from the interval between adjacent points of connection between the other end of the strap and the other end member.

A further object of my invention is to provide a metallic strip formed of a resilient member held to two end members in such a way that when bent around a harness sheave the natural tendency of the ends of the flexible strap will be to remain in contact with the end members.

With these and other objects in view which will appear as the description proceeds, my invention resides in the combination and arrangement of parts hereinafter described and set forth in the claim.

In the accompanying drawings wherein I have shown a convenient embodiment of my invention,

Fig. 1 is a top plan view of the connecter, parts being broken away,

Fig. 2 is a partial front elevation looking in the direction of arrow 2, Fig. 1,

Fig. 3 is a reduced diagrammatic front elevation of certain portions of the loom indicating the manner of using my invention,

Fig. 4 is an end elevation of the clip employed to hold adjacent parts together,

Figs. 5 and 6 are enlarged vertical sections on lines 5—5 and 6—6, respectively, of Fig. 1, and

Fig. 7 is an enlarged front elevation, parts being in section, of the harness jack or lever and jack eye connected to the harness wire.

Referring to Fig. 3 it will be seen that I have provided a loom frame 10 having arches 11 and harness jacks or levers 12 pivoted on fixed rod 13. The harness jack is of the form used on dobby harness mechanisms and may be connected as at 14 to a dobby back lever 15 actuated by one or another of the dobby hooks 16. The harness frame 17 is but one of a number of such frames ordinarily employed in a fancy loom and may be provided with heddles 18 and have projecting upwardly therefrom a connecter eye 19. The arches 11 have extending between the same shafts 20 on each of which is rotatably mounted a plurality of harness sheaves 21. A harness wire 22 having hooked long and short ends 23 and 24, respectively, is connected to a jack eye 25 held in one of the notches of the associated harness jack. The matter thus far described is of common construction and forms no part of my present invention.

In carrying out my improvements I provide a pair of connecters C for each frame, one of said connecters being indicated more particularly in Figs. 1 and 2 and having the right end thereof formed of a relatively inflexible preferably metallic end member 30 provided with a plurality of key-hole slots 31 so disposed that the narrow parts of the slots point toward the center of the connecter. The right hand end of said member 30 has a hole 32 extending therethrough while the left hand end is offset as indicated

at 33 in Fig. 6 and has stamped through the offset portion a slot 34.

A flexible member or strap S, preferably of spring steel, has riveted in the right hand end thereof a stud 35 having a head 36 which is larger than the shank of the stud, said head being able to pass through the larger part of the key-hole slots 31 but too large to pass through the narrow portions of said slots. The other end of the flexible member S has riveted therein a stud 37 which may be conical as indicated in Fig. 5, if desired.

The stud 37 extends through any one of a plurality of substantially circular holes 38 punched through the second inflexible and preferably metallic end member 39. Said member 39 has the inner end thereof provided with an offset 40 similar to the offset 33 having therein a slot 41 and the outer end of the member 39 is provided with a hole 42. A clip 43 indicated in Fig. 4, is slidably mounted on the member 39 and surrounds the latter and also the flexible strap S, being held in place by friction. The intermediate flexible strap portion of the connecter passes through the slots 34 and 41 and is held in fixed position relatively to the end members by the aforesaid studs. It is to be understood that if the desired both ends of the connecter may be made as indicated in the right hand end of Fig. 1 or both ends may be constructed as indicated in the left hand end of Fig. 1.

As indicated in Figs. 3 and 7 there are two connecters for each harness frame, the members 39 being connected to the harness lever 12 by means of the wire 22 and jack eye 25. The other members 30 are secured to the harness frame hooks 19 by having the latter passed through the holes 32.

The length of the connecter may be varied by giving either end member a new setting with respect to the central portion. If it is desired to make a relatively large adjustment the member 30 may be moved along the member S until the head 36 will pass through the large part of the key-hole slot after which the stud 35 may be passed through the next slot. Should it be desired to make a relatively smaller adjustment clip 43 can be moved inwardly along member 39 and the end of the member S sprung away from member 39 to remove the conical stud 37 after which the latter may be moved to the next or any other of the openings 38. The distance between the key-hole slots is greater than the distance between the holes 38, this distance preferably not being a multiple of the distance between the holes 38 so that a greater variety of lengths can be obtained than is represented by the sum of the slots 31 and the holes 38.

From the foregoing it will be apparent that I have provided a very simple and durable harness connecter to be interposed between the harness lever and the harness frame, said connecter being made of metal so as not to stretch and having a flexible portion to extend around a harness sheave 21. Provision is also made for rendering adjustments, the number of adjustments being greater than the sum of the slots and the holes by reason of the fact that the interval between the slots is different from but not a multiple of the distance between the holes. It will also be seen that the clip 43 is held against loss beyond the end of the member by means of the stud 37. Also as shown in Fig. 3 is will be seen that the ends of the flexible member S lie on the inside of the curve of the connecter so that said ends are held naturally against the end members by the resilience of the strap S. It is to be understood as previously stated that the connecter may have each end provided with a member 30 or both ends may be formed as member 39.

Having thus described my invention it will be apparent that changes and modifications may be made therein by those skilled in the art without departing from the spirit and scope of the invention, and I do not wish to be limited to the details herein disclosed but what I claim is:

A harness connecter for a loom having a harness jack, a harness sheave, and a harness frame, said connecter comprising a pair of end members, one for the harness jack and one for the harness frame, a flexible member between the end members, means defining a plurality of points at which connection may be had between one of said end members and the adjacent end of the flexible member, and means defining a plurality of points of attachment between the other end member and the other end of the flexible member, the interval between the points of connection on one member being other than a multiple of the distance between adjacent points of connection on the other member.

In testimony whereof I have hereunto affixed my signature.

GEORGE J. PFEIFFER.