

[54] **LOOM**

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[51] Int. Cl. .... **D03d 29/00**

[58] Field of Search .... **139/29, 33**

[56] **References Cited**

**UNITED STATES PATENTS**

2,350,167	5/1944	Jones et al. ....	139/29
2,582,008	1/1952	Clack .....	139/29
3,774,649	11/1973	Glessner .....	139/33

**FOREIGN PATENTS OR APPLICATIONS**

592,085	9/1947	Great Britain .....	139/29
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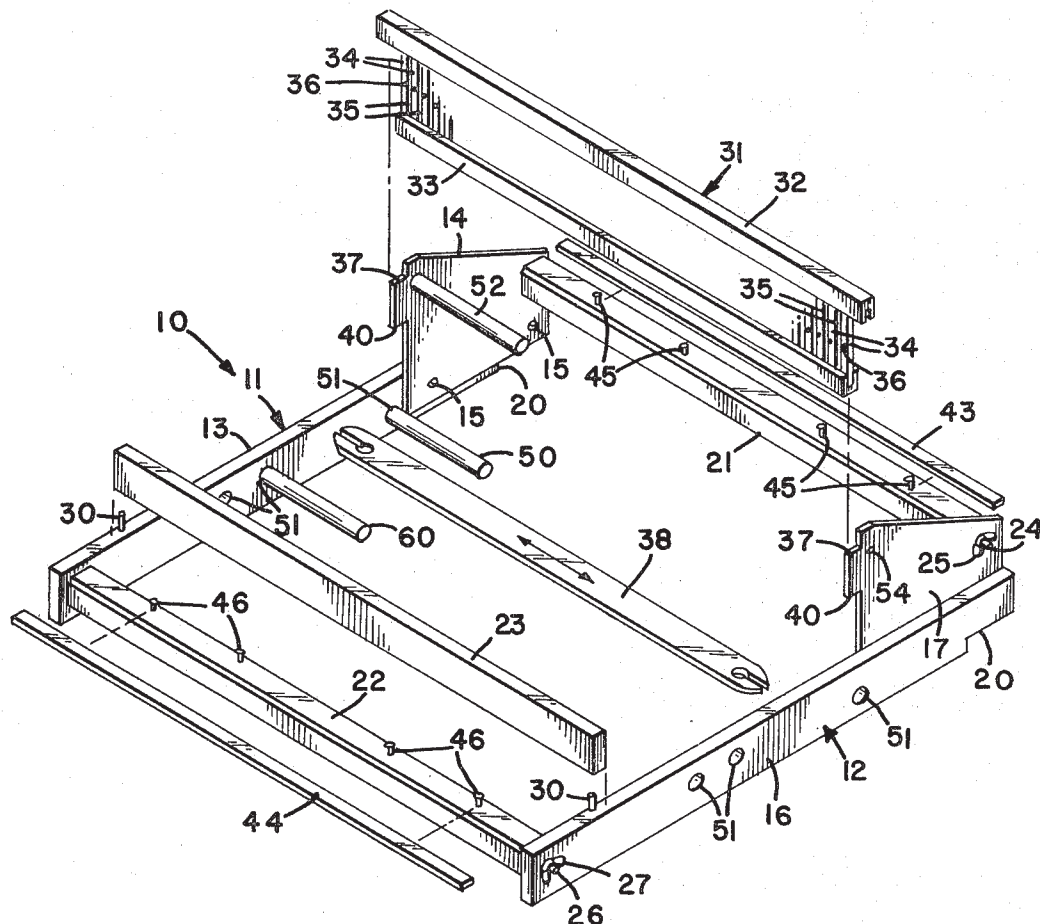
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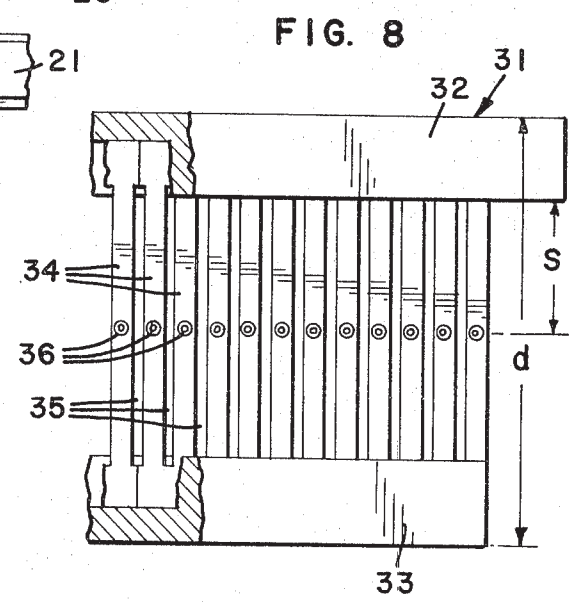
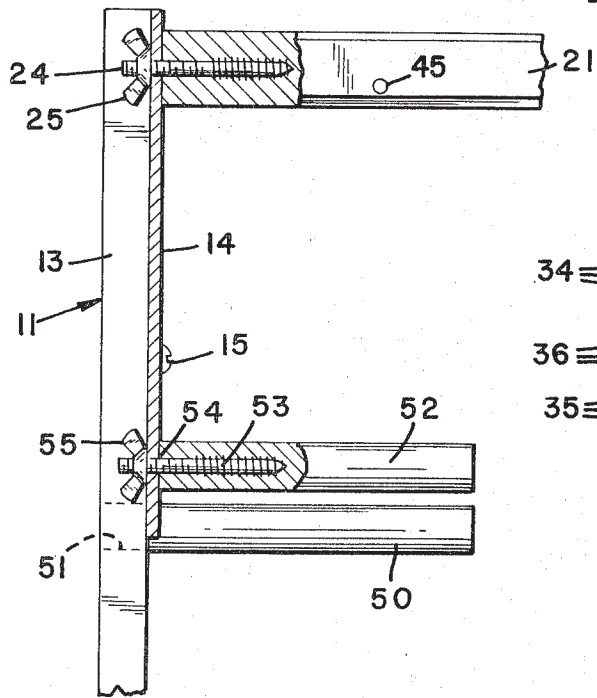
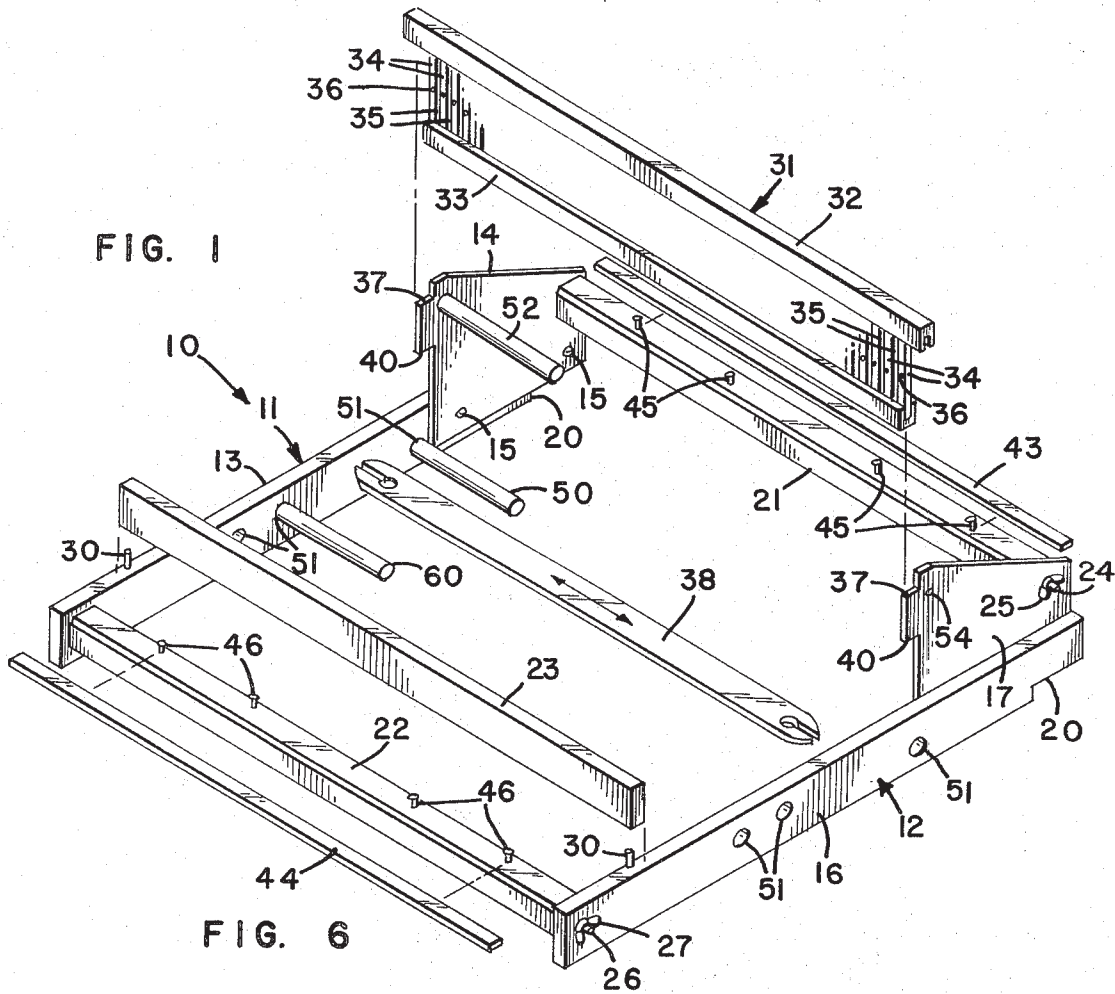
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[57] **ABSTRACT**

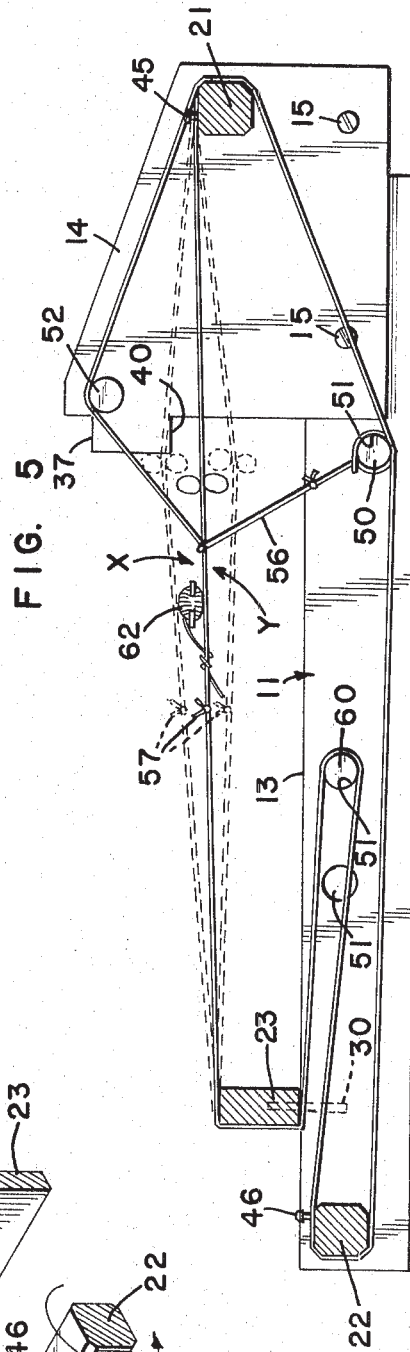
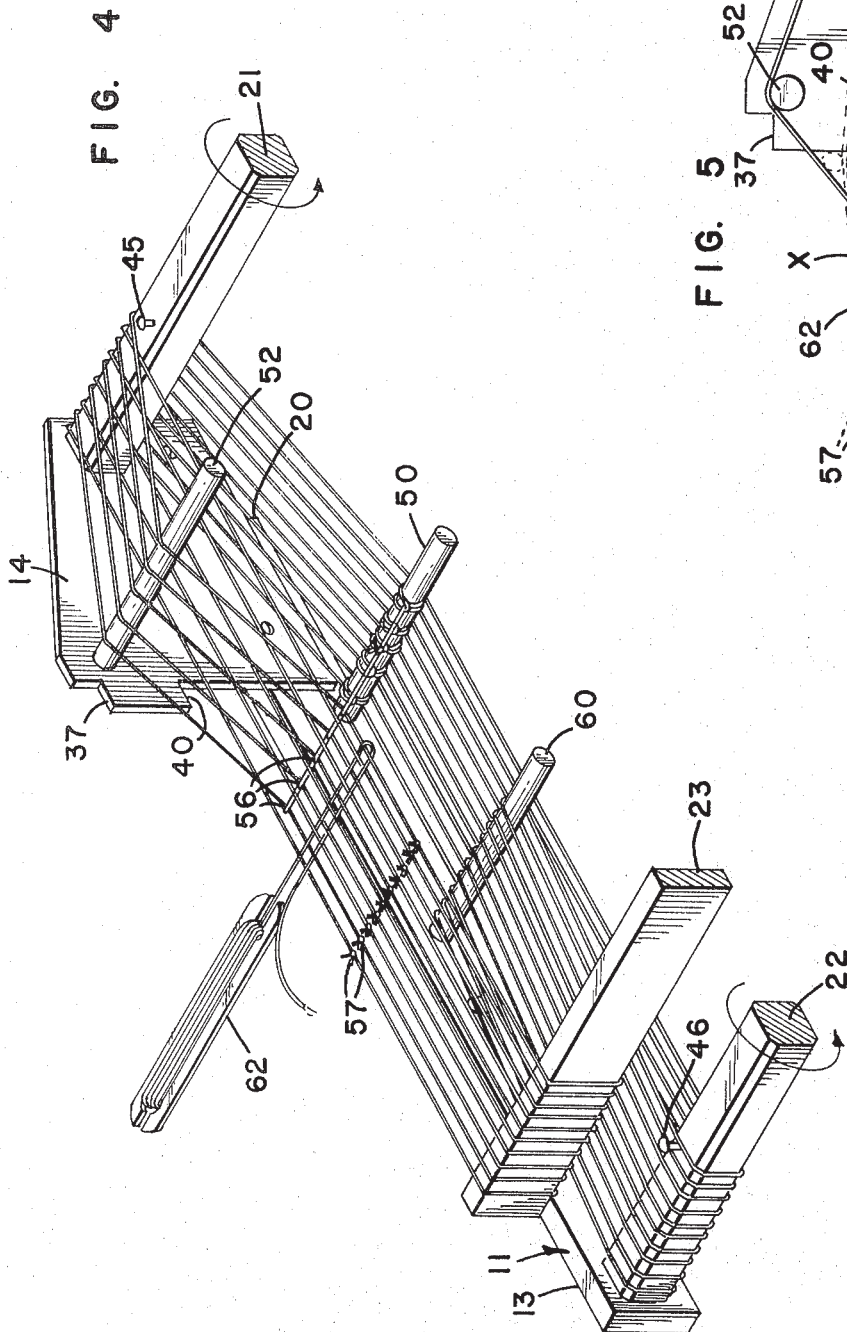
A hobby loom, for use when resting on a table or the like or supported in part by the lap of the user, and especially adapted to use either a rigid heddle, for tabby weaving, or string heddles, for inkle weaving. The loom includes side assemblies pivotally supporting a warp beam and a cloth beam and fixedly supporting a cross beam, the neutral shed defined by the cross beam and the warp beam being higher above the base of the loom than the bottom of a rigid heddle in the down shed position. The side assemblies further include means for supporting string heddles, and for maintaining a rigid heddle in both up shed and down shed positions.

**4 Claims, 8 Drawing Figures**











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LOOM

BACKGROUND OF THE INVENTION

This invention relates to the field of weaving, and more particularly to relatively small and inexpensive hand looms for use by hobby weavers. Home weaving is a craft that is of growing popularity, and looms for this purpose are being particularly designed for compactness and modest cost. As customarily used they are supported on a table top or the like, the front or cloth end of the loom often resting in the weaver's lap.

Inkle looms and tabby looms are both known, the former having string heddles, with sheds being formed by the weaver's fingers, and the later having a rigid heddle which the weaver raises or lowers to create the sheds and also use as a beater. The shed has heretofore been maintained by the rigid heddle in one hand of the user, while the other hand is used to pass the shuttle through. This coordinated performance of two different functions by the weaver's two hands simultaneously calls for considerable skill, particularly if even tension in the weft is to be maintained. Aside from the differences in heddling and shed formation, tabby and inkle looms are much alike, to the point where the owner of both looms has a considerable portion of its investment tied up in redundancy.

SUMMARY OF THE INVENTION

The object of the present invention is to provide an improved single loom readily adapted to either tabby or inkle weaving, and particularly arranged for simplified heddle manipulation in tabby weaving. This is accomplished by a special design of side assembly, in three cooperative aspect. In the first place, the cloth, warp, and cross beams are mounted at different heights to define a neutral shed which is substantially horizontal. In the second place, means are provided to receive string heddle support means and warp thread guide means so located that the neutral shed of the inkle loom is the same as that of the tabby loom. In the third place, means are incorporated for retaining the rigid heddle in both an up shed and a down shed position, in cooperation with the warp thread tension, so that both the weaver's hands are free to manage the shuttle and the warp tension.

It is accordingly a principal object of the invention to provide a new and useful loom. Another object is to provide a craft type loom useful both in tabby weaving and inkle weaving. A more specific object of the invention is to provide such a loom in which management of a rigid heddle is facilitated. Yet another object of the invention is to provide such a loom having a side assemblies specifically designed to accomplish the desired object of increased versatility and increased convenience.

Various other objects, advantages, and features of novelty which characterize the invention are pointed out with particularity in the claims annexed hereto and forming a part hereof. However, for a better understanding of the invention, its advantages, and objects attained by its use, reference should be had to the drawing which forms a further part hereof, and to the accompanying descriptive matter, in which there is illustrated and described a preferred embodiment of the invention.

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BRIEF DESCRIPTION OF THE DRAWING

In the drawing FIG. 1 is an exploded view of the loom;

FIGS. 2 and 3 show the loom in use for tabby weaving;

FIGS. 4 and 5 show it for use in inkle weaving; and FIGS. 6, 7, and 8 show details.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to FIG. 1, a loom 10 embodying the invention is shown to comprise a left side assembly 11 and a right side assembly 12. Assembly 11 is made up of a side beam 13 and a side plate 14 secured thereto by suitable means such as screws 15. Assembly 12 is made up of a side beam 16 and a side plate 17, which may be similarly assembled. Adjacent the side plates the lower edges of the side beams are notched at their ends, as suggested at 20.

Associated with assemblies 11 and 12 are a warp beam 21 a cloth beam 22, and a cross beam 23. Warp beam 21 comprises a beveled square wooden bar having central pivots 24, inserted into its ends for passing through appropriate holes in side plates 14, 17, and threaded outwardly to receive wing nuts 25 clamping the beam between the plates. Cloth beam 22 is similarly centered on pivots 26 and is clamped between the ends of side beams 13 and 16 by wing nuts 27. Cross beam 23 is mounted on the tops of side beams 13 and 16 by means such as dowel pins 30 received in suitable holes in the cross beam.

The relative locations of beams 21, 22, and 23 is such that a line from the top of beam 23 passing over beam 21 defines the neutral shed of the loom for both tabby and inkle weaving. For tabby weaving a rigid heddle 31 is used, comprising upper and lower bars 32 and 33 in which are fixed dents 34. The dents are separated by small spaces 35 (see FIG. 8) and are conveniently supplied in assemblies of 5 inches unit length, for example. Each dent has a aperture 36 and the apertures are aligned along the heddle centrally between the two bars. The positions of beams 21 and 23 are such that the height of the neutral shed above a surface on which the loom may be placed is greater than  $d/2 = s$ , where  $d$  is the width of the heddle and  $s$  is the size of the shed. The distance  $s$  of course is no greater than the distance  $S$  in FIG. 8.

Each of plates 14 and 17 is provided at its front edge with an upper notch 37 and a lower notch 40. Referring now to FIG. 3, the stationary warp threads are shown at 41, and the movable threads at 42, 42'. When the upper bar 32 of heddle 31 rests on the bottom of notches 37, the moving threads are at 42 to create up shed X through which the warp thread is passed. A shuttle for that purpose is shown at 38 in FIG. 1. When the upper bar rests under the tops of notches 40, the moving threads are at 42' to create the down shed Y. It is customary for the sheds to be approximately equal, although this of course varies slightly with the amount of thread wound on beam 21.

Initial warping of the loom is facilitated by the provision of tie bars 43, 44. After the desired number of warp threads are tied onto a bar, it is positioned against pins 45, 46 in warp beam 21 or cloth beam 23 and the threads are easily wound onto the beam.

For inkle weaving a string heddle support 50 is inserted in a suitable aperture 51 formed in side beam 13 to receive it. And a thread guide 52 is secured to the side plate 14 by a stud 53 passing through an aperture 54 in the side plate and held by a wing nut 55. The desired number of string heddles 56 are placed on support 50, and the loom is warped, alternate threads following two different paths. One set of threads passes over cross beam 23 and warp beam 21, under support 50, and around cloth beam 22 to cross beam 23, the ends of these threads being tied together as at 57. If the length of the threads so warped is not sufficient, the thread may be looped around a further pin 60 received in a selected socket 51 inside beam 13; any desired plurality of sockets may be provided. The other set of threads passes over cross beam 23, through string heddles 56, over guide 52, around warp beam 21, under support 50, and around cloth beam 22 to cross beam 23, including a loop around pin 60 if desired, the ends of these threads are also being tied together as at 57. At this time all the threads lie in a neutral shed between the cross beam and the location of the string heddles. The weaver creates the up shed X and the down shed Y by raising or lowering with his fingers the threads which do not pass through the string heddles, and passes the weft thread through the shed so formed with his other hand, or if desired with a small shuttle 62. The relatively small number of warp threads used in inkle weaving makes a shuttle a dispensable adjunct.

In either tabby weaving or inkle weaving beams 21 and 22 are occasionally rotated in the same direction, to give the weaver proper working space. Tension of the warp is adjusted by manipulating the beams separately.

Numerous objects and advantages of the invention have been set forth in the foregoing description, together with details of the structure and function of the invention, and the novel features thereof are pointed out in the appended claims. The disclosure, however, is illustrative only, and changes may be made in detail especially in matters of shape, size, and arrangement of parts, within the principle of the invention, to the full extent indicated by the broad general meaning of the terms in which the appended claims are expressed.

What is claimed is:

1. In a loom:

a side assembly;  
 means in said side assembly for pivotally mounting a warp beam and a cloth beam;  
 means in said assembly for receiving a cross beam so that a line between said cross beam and said warp beam defines a neutral shed for the loom;  
 means in said assembly for receiving a string heddle support;  
 means in said assembly for maintaining a rigid heddle in both an up shed position and a down shed position, the neutral shed of said loom being the same for string heddles and for the rigid heddles;  
 and means in said assembly for receiving a guide for warp threads passing out of said neutral shed between the string heddles and the warp beam.

2. In a loom:

a warp beam;  
 a cloth beam;  
 a cross beam;  
 a pair of side assemblies for mounting the loom on a flat surface;  
 means in said side assemblies for pivotally mounting said warp beam and said cloth beam, and for securing said cross beam so that a line between said cross beam and said warp beam defines a neutral shed for the loom;  
 means in said side assembly for maintaining a rigid heddle in both an up shed position and a down shed position;  
 and means in at least one of said assemblies for receiving a string heddle support and a guide for warp threads passing out of said neutral shed between the string heddles and the warp beam.

3. Apparatus according to claim 2 in which the bottoms of said assemblies at the ends of adjacent said warp beam are notched to engage the edge of a table or the like when the loom is held in the weaver's lap.

4. Apparatus according to claim 2 together with a rigid heddle having an array of dents and an upper bar with ends projecting beyond said dents for cooperating with the second named means, said second named means comprising means for receiving the projecting ends of said rigid heddle to maintain the heddle in both an up shed position and a down shed position under the tension of warp threads in the dents in the said heddle.

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