Jan. 14, 1941. J. C. BROOKS 2,228,438

HAND LOOM

Filed Oct. 11, 1939

Fig.1.

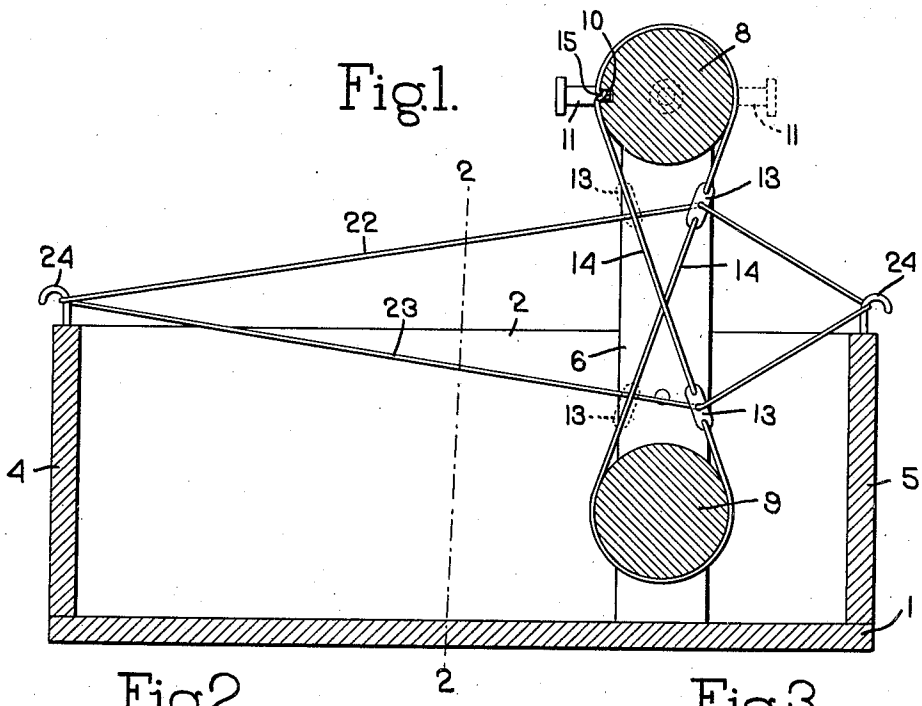


Fig.2.

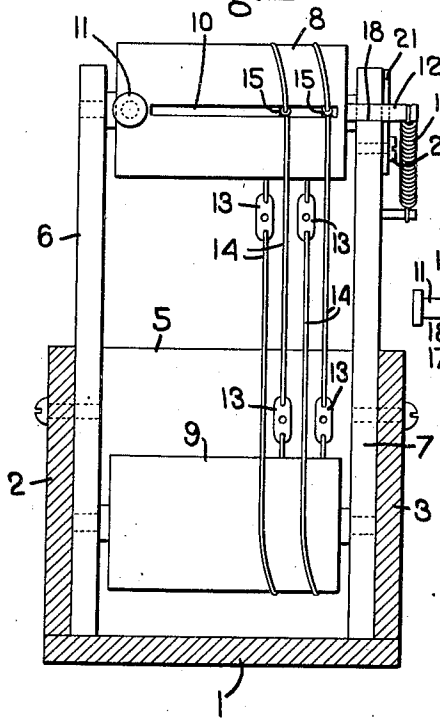


Fig.4.

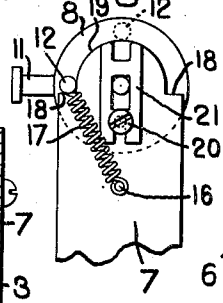
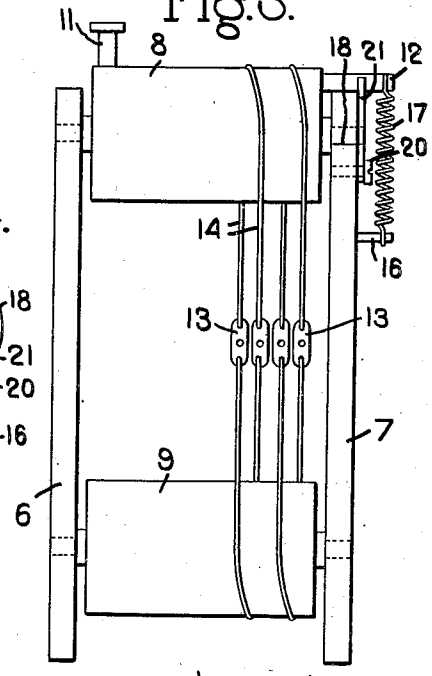


Fig.3.



Inventor.
John C. Brooks
by Heard Smith & Tennant.
Attys.

Patented Jan. 14, 1941 2,228,438

UNITED STATES PATENT OFFICE

2,228,438

HAND LOOM

John C. Brooks, Paterson, N. J.

Application October 11, 1939, Serial No. 298,960

2 Claims. (Cl. 139—33)

This invention relates to hand operated looms and more particularly to toy looms for use as a pastime to weave plain, and decorative, fabrics from various colored yarns, twines, and kindred supplies.

The principal object of my invention is to provide a loom of above class, inexpensive to build, of sturdy nature and appealing to and capable of being operated by comparatively young children to weave useful familiar objects, and be of interest to grown people.

A further object of my invention is to provide a loom of this type with means to relieve the friction at contact part of warp threads and heddle eyes, to avoid undue breakage of the warp threads, also to automatically assemble the heddle eyes to a position for easy rethreading.

The above objects are attained by the construction and operation as herein explained and shown.

In the drawing:

Fig. 1 is a cross section side view lengthway of the loom.

Fig. 2 is a cross section front view widthway of the loom, looking from left to right.

Fig. 3 is a front view of the heddles and their operating mechanism detached from the loom.

Fig. 4 is a detail view of heddle movement control.

The loom framing, in the shape of an open-box, comprises a base part, 1, side pieces, 2, 3, and end pieces, 4, 5, suitably secured together. This form of frame construction serves the double purpose of supplying a frame for the loom and a box in which can be contained odds and ends a child would acquire during operation of the loom.

Secured to side pieces 2, 3 are vertical side pieces, 6, 7, supporting rollers 8, 9. Roller 8 is provided with a groove, 10, pin, 11, and pin 12 hereafter referred to. Engaging rollers 8, 9 in an oblique manner, hereinafter referred to, are heddles, having metal warp eyes, 13, coupled in pairs by twine loops, 14, the knots, 15, of the loops engaging roller 8 engaging in groove 10 of said roller 8.

Fast in side piece 7 is a pin, 16, engaging a spring, 17, in contact with pin 12. Provided at the top end of side piece 7 are shoulders, 18, and the end, 19, of piece 7, is curved to allow movement of pin 12 from one shoulder to the other during the turning of roller 8. Loosely secured on piece 7 by screw, 20, is a slotted plate, 21, which, when it is desired, or necessary, to re-thread the heddles with warp threads the roller 8 is turned to position the pin 12 and slotted plate 21 pushed upwards in engagement with said pin 12.

Lengths of warp threads, 22, 23, are threaded through mail eyes 13 and their ends secured to hooks 24 fast in the top edges of end pieces 5, 6, and roller 8 is then turned backwards and forwards thus forming alternating warp sheds in which picks of weft are inserted and pushed forward, in the absence of a usual reed, by the edge of the flat shuttle used or by the aid of a comb.

The pin 11 offers a convenient means to turn roller 8 and pin 12 and spring 17 serve to hold roller 8 in its turned position and keep the warp shed open while picks of weft are inserted. The above explained procedure weaves what is known as "plain cloth" or a "tabby weave." To form designs, stripes of various colored-warp threads with stripes of colored weft picks can be used to weave differing designs. Another form of decorative cloth can be made by, after the regular weft pick has been inserted, and while the warp shed is open, inserting short lengths of weft picks of a different color or kind. It will be seen that the mail eyes 13 are positioned, Figs. 1, 2, to the rear of the heddle rollers 8, 9, to form one warp shed and change to the front of the rollers upon forming the opposite warp shed. This action gives the mail eye 13 a sliding motion, forwards and backwards, on its respective warp thread thus distributing the frictional contact over a length of the warp thread and reducing the thread breakage.

As shown in Fig. 3 the roller 8 is set at half turn and mails, 13, brought together to simplify the rethreading of the warp threads in their mails.

The thickness of the warp threads, their size and the number of heddles employed would determine the kind and quality of cloth woven. This knowledge would be acquired by the experience of the child operating the loom.

While I have described in detail one embodiment of the invention it is understood that changes can be made in the shape, size, and constructive details without departing from the spirit of my invention or the scope of the following claims.

I claim:

1. A toy loom having a frame provideed with two uprights, two rollers, one above the other, rotatably mounted in said uprights, heddles of flexible material passing around both rollers and secured to the upper roller, each heddle having a figure eight formation, turning movement of

the upper roller in one direction or the other causing a shifting of the heddles to produce sheds, a pin extending from one end of said upper roller eccentrically thereof, the corresponding upright having two stop shoulders cooperating with said pin to limit the turning movement of the upper roller in either direction, and a spring connected to said pin and adapted to hold the latter yieldingly against either shoulder.

2. A toy loom comprising a frame, two rollers rotatably mounted therein, heddles of flexible material passing around both rollers and secured to one of them, each heddle having a metal eye for the warp thread, turning movement in one direction or the other of the roller to which the heddles are secured causing a shifting of the heddles to produce warp sheds, a pin extending from the end of said roller eccentrically thereof, stop shoulders cooperating with said pin to limit the turning movement of the roller in either direction, a spring connected to said pin and adapted to hold the latter yieldingly against either shoulder, and a slotted plate slidably carried by the frame and adapted to engage said pin when the roller is in mid-position, thereby holding the heddles with all the metal eyes in alinement.

JOHN C. BROOKS.