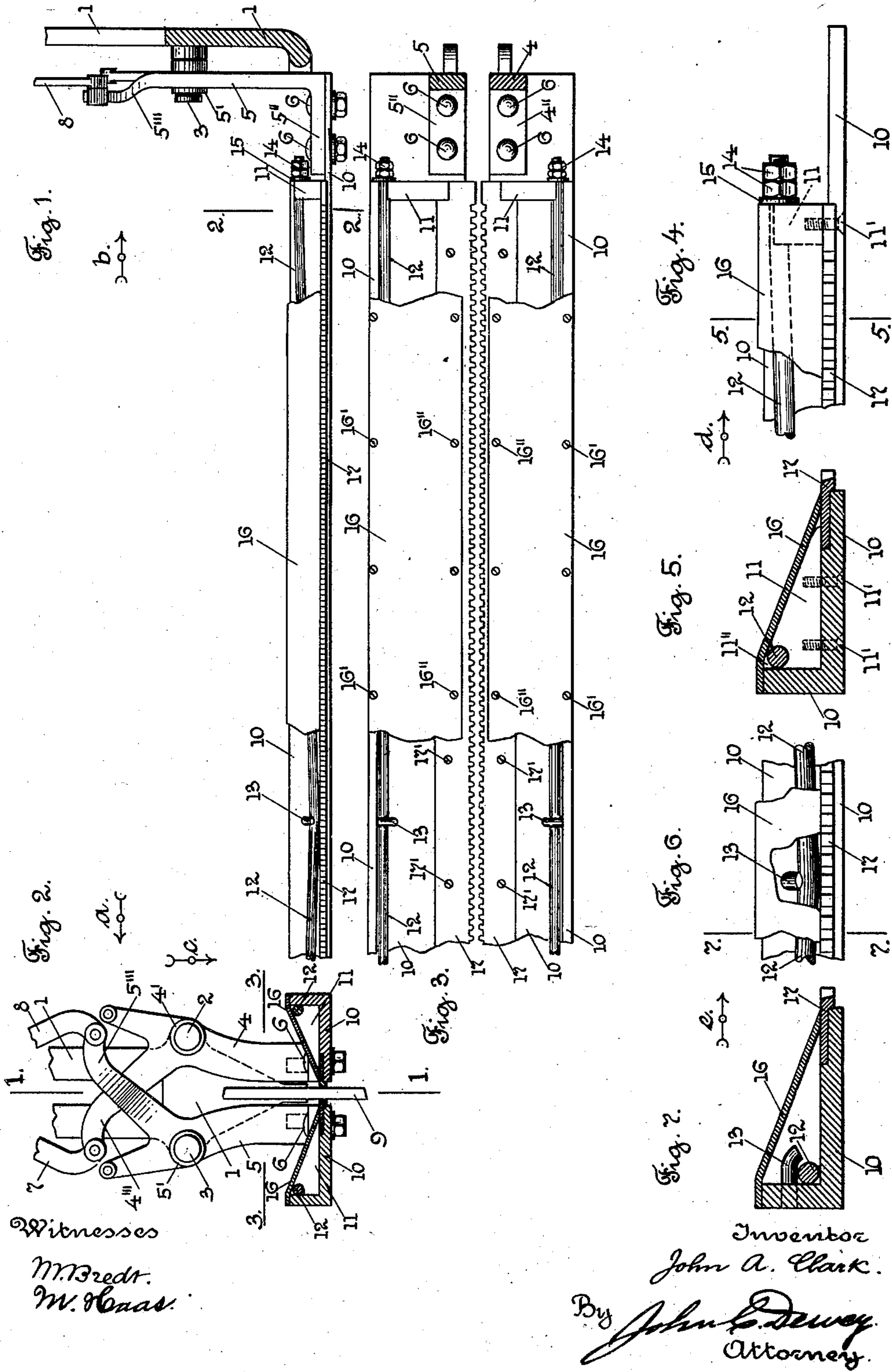


J. A. CLARK.
 EVENER FRAME FOR TUFT FABRIC LOOMS.
 APPLICATION FILED MAR. 4, 1910.

986,441.

Patented Mar. 14, 1911.



UNITED STATES PATENT OFFICE.

JOHN A. CLARK, OF WORCESTER, MASSACHUSETTS, ASSIGNOR TO CROMPTON & KNOWLES LOOM WORKS, A CORPORATION OF MASSACHUSETTS.

EVENER-FRAME FOR TUFT-FABRIC LOOMS.

986,441.

Specification of Letters Patent.

Patented Mar. 14, 1911.

Application filed March 4, 1910. Serial No. 547,221.

To all whom it may concern:

Be it known that I, JOHN A. CLARK, a citizen of the United States, residing at Worcester, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Evener-Frames for Tuft-Fabric Looms, of which the following is a specification.

My invention relates to evener bars for a tuft fabric loom, of the type shown and described in U. S. Letters Patent, No. 446,402. In said patent a series of vertical needles or tuft yarn carriers are used, which carry the tuft yarn to form the pile on the woven fabric, and there are sets of eight needles which carry the tuft yarn of different colors, and when a selected needle is dropped from each one of the sets, evener levers act to bring all of the dropped needles into a row, and to aline them preparatory to being inserted into the warp. The evener levers are provided with evener bars, which are made as flat plates to engage the dropped needles with their contiguous edges. In case of wide looms, where a great number of needles have to be alined, said evener bars must be of great stiffness and strength to avoid vibration, and to hold the needles so that they will all be properly inserted into the warps.

The object of my invention is to make evener bars for wide looms of the class referred to, of improved construction, in order to obtain greater stiffness and strength.

My invention consists in certain novel features of construction of my improvements as will be hereinafter fully described.

Referring to the drawing:—Figure 1 is a front view of an evener bar, partially broken away, and taken as a section on line 1, 1, Fig. 2, looking in the direction of arrow *a*, same figure. Fig. 2 is a cross section, through the evener bars, on line 2, 2, Fig. 1, looking in the direction of arrow *b*, same figure. Fig. 3 is a plan view of the evener bars, and a section on line 3, 3, Fig. 2, looking in the direction of arrow *c*, same figure. Fig. 4 shows, on an enlarged scale, one end of the evener bar shown in Fig. 1, detached. Fig. 5 is a section, on line 5, 5, Fig. 4, looking in the direction of arrow *d*, same figure. Fig. 6 shows, on an enlarged scale, the center portion shown in Fig. 1, detached, and partially broken away, and, Fig. 7 is a sec-

tion, on line 7, 7, Fig. 6, looking in the direction of arrow *e*, same figure.

In the accompanying drawing, 1 is a vertically extending bar, operated by a lever, not shown, to be raised and lowered. The lower end of said bar 1, which is of the shape shown in Fig. 2, has two studs 2 and 3 thereon, for the hubs 4' and 5' on the evener levers 4 and 5, respectively. The lower ends of said evener levers have inwardly extending lugs or extensions 4'' and 5'', see Fig. 3, to which are secured, by bolts 6, the ends of the evener bars to be hereinafter described.

Extending upwardly from the hubs 4' and 5', on the levers 4 and 5, are the arms 4''' and 5''', the ends of which have pivotally connected thereto the links 7 and 8, respectively. The upward motion of the links 7 and 8, through a lever, not shown, causes the evener levers 4 and 5 to operate to bring the evener bars toward each other, and aline all of the drop tuft yarn needles 9, as shown in Fig. 2.

All of the above mentioned parts may be of the usual and well known construction in evener motions for looms of the class referred to.

I will now describe my improvements.

Each of the lugs or extensions 4'' and 5'', on the evener levers 4 and 5, have secured, in this instance on the underside thereof, by bolts 6, the ends of the evener bars 10. The evener bars 10, intermediate their ends which are secured to the lugs or extensions 4'' and 5'', as above described, are made of angle iron. On each end of the angle iron portion is a block 11, secured in this instance to the horizontally extending side of the angle iron bar 10, by screws 11', see Figs. 4 and 5. The blocks 11 are preferably of wedge shape, and each is provided at its upper end with a recess 11'', see Fig. 5, adapted to receive the ends of a tension or truss rod 12; the center portion of the truss rod 12 is preferably bent toward the lower edge of the angle iron bar 10, and is held thereon by a pin 13 secured to the vertically extending side of the angle iron bar 10, see Fig. 7. On each threaded end of the truss rod 12 are nuts 14, which are screwed up in this instance against a washer 15, bearing against the outer edge of the block 11, see Fig. 4, to tighten the truss rod 12.

A guard or cover plate 16 in this instance extends upon the inner side of the evener bars 10, and is attached at its upper edge to one end of the angle bar 10 by screws 16', and at its lower edge to the other end of the angle bar 10 by screws 16'', see Fig. 3. Extending in a recess on the inner edge of each evener bar 10, is in this instance a plate 17, which is secured by screws 17' to said bar. There are in this instance notches or recesses in the inner edge of each plate 17, see Fig. 3, to receive the dropped needles. The plates 17 form the engaging surfaces of the evener bars 10, carried by the evener levers 4 and 5.

In my improved construction of my evener bars, by means of the angle metal bars 10 and the truss rod 12, great stiffness and rigidity is given to the evener bars with a minimum of weight.

It will be understood that the details of construction of my improvements may be varied if desired.

Having thus described my invention,

what I claim as new and desire to secure by Letters Patent is:

1. An evener bar for alining the drop needles in a tuft fabric loom, comprising an angle metal bar, a truss rod connected at its ends with said bar, and extending in the direction of the length of the bar to stiffen the same, and a guard plate extending upon the inner side of said bar and secured thereto.

2. An evener bar for alining the drop needles in a tuft fabric loom, comprising an angle metal bar, a truss rod connected at its ends with said bar, and extending in the direction of the length of the bar to stiffen the same, and a plate with a notched edge to engage the needles, extending upon and secured to the inner edge of said bar, and a guard plate extending upon the inner side of said bar and secured thereto.

JOHN A. CLARK.

Witnesses:

JOHN C. DEWEY,
MINNA HAAS.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
