S. G. BENNETT.

HEDDLE FRAME.

APPLICATION FILED JUNE 14, 1921.

1,434,189. Patented Oct. 31, 1922.

Fig. 3.

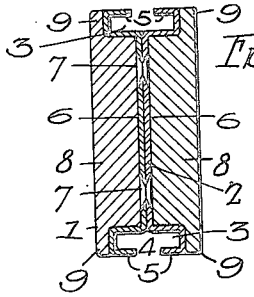


Fig. 2.

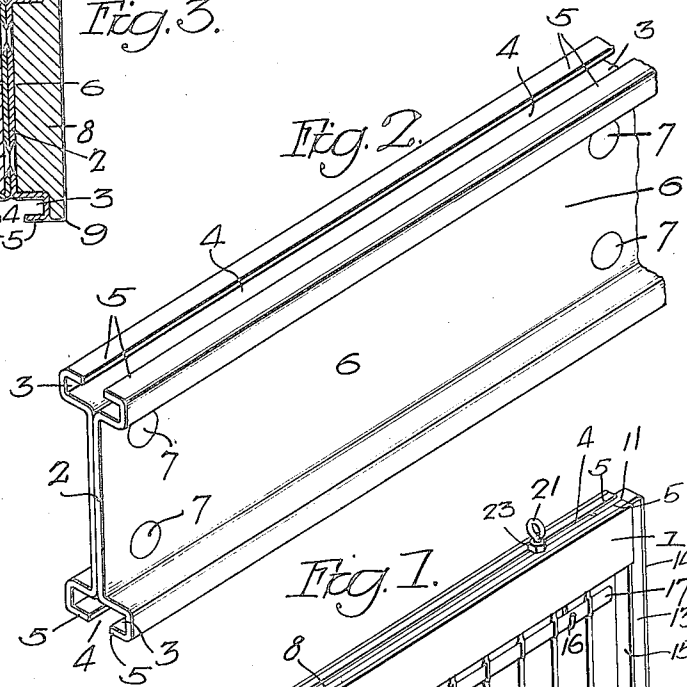


Fig. 4.

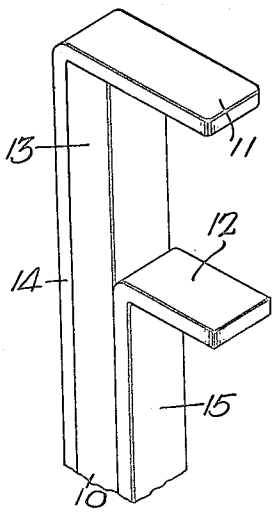


Fig. 1.

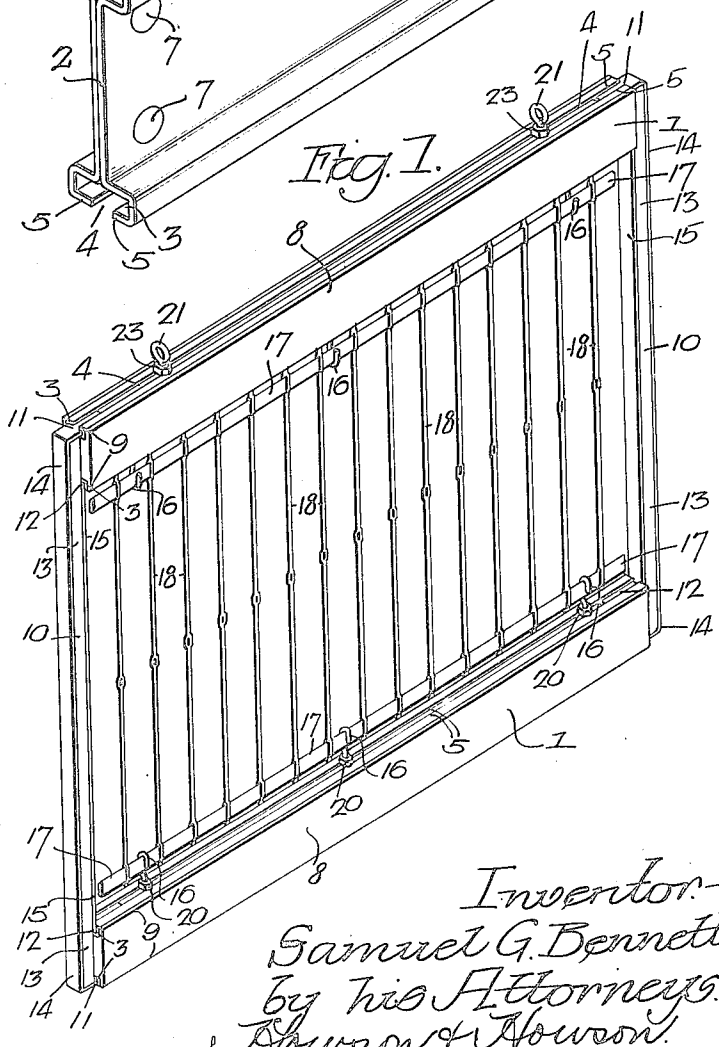


Fig. 5.

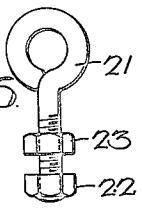
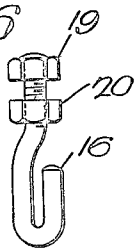


Fig. 6



Inventor-
Samuel G. Bennett.
by his Attorneys-
Howson & Howson.

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UNITED STATES PATENT OFFICE.

SAMUEL G. BENNETT, OF PHILADELPHIA, PENNSYLVANIA.

HEDDLE FRAME.

Application filed June 14, 1921. Serial No. 477,507.

To all whom it may concern:

Be it known that I, SAMUEL G. BENNETT, a citizen of the United States, residing in Philadelphia, Pennsylvania, have invented certain Improvements in Heddle Frames, of which the following is a specification.

My invention relates to improvements in heddle frame construction, one object of my invention being to provide a frame in which an even distribution of the heddles over the entire length of the rods may be assured. Another object of the invention is to provide means for an adjustment of the frames relative to their supports, while a still further object is to provide a heddle frame construction which will lend itself to an easy and simplified alteration in the size of the heddle frame both longitudinally and laterally. The invention also contemplates the provision of a heddle frame in which for a given strength the bulk is greatly reduced over frames of the usual construction.

The invention will be readily understood from the attached drawings, in which:

Figure 1, is a view in perspective of a heddle frame made in accordance with my invention:

Fig. 2, is a fragmentary view in perspective of a portion of the frame;

Fig. 3, is a vertical section of a portion of the frame taken on the line 3—3, Fig. 1;

Fig. 4, is a fragmentary perspective of the upper portion of the side pieces of the frame, and

Figs. 5 and 6, are respectively views of the frame supporting eyelets and of the hooks which support the heddle rods.

With reference to the drawings, the frame comprises top and base rods 1, 1, of identical construction, said rods comprising an inner metal beam 2 of substantially eye-shaped cross section, having at the top and bottom a longitudinal recess or slot 3, access to which is obtained through the ends and through a longitudinal slot 4 extending into the top and bottom faces of the said beam. This beam 2 in the present instance is formed by means of two special angle irons 5, 5, of identical shape and so constructed that when the central webs 6 thereof are fastened together by means of rivets 7 or the like, as shown in Fig. 3, they constitute a solid beam of the foregoing description. It will be noted that the rivet holes for the rivets 7 are countersunk so that the face of the rivet does not extend beyond the face of the web 6.

Suitably secured to the sides of the beam 2 are side pieces 8, preferably of wood or similar material, said side pieces being formed to fit the recesses between the respective heads of the eye beam 2 and having wings or extensions 9, 9, which extend along the sides of the said heads with their outer edges flush with the outer surfaces of the said beam 2, as most clearly shown in Fig. 3.

The said top and bottom beams 1 are adapted to be connected by means of end bars 10 of identical construction, said side beams comprising at each end a pair of projections 11 and 12 spaced apart and adapted respectively to enter the ends of the recesses 3 and 4 in the top and bottom beams 2. The end bars 10 in the present instance are composed of a spacing bar 13 of wood or the like, with a metal bar 14 secured to the face thereof and a similar bar 15 secured at the back, said bars 14 and 15 having their tops bent to form the said lateral projections 11 and 12, the said projections 11 extending over the ends of the rod 13, as most clearly shown in Fig. 4. When these end pieces 10 are in place connecting the top and base beams 2, as shown in Fig. 1, a rigid frame is formed, which is light of weight and exceedingly strong.

In supporting the heddles in the frame, the usual heddle bars are employed, with hooks or the like 16 for retaining the said heddle bars 17, between which the heddles 18 extend as shown in Fig. 1, to the frame. The hooks 16 have in the present instance a head 19 in the form of a nut, which is adapted to occupy the recesses 3 and 4 in the bottom and top beams respectively, and a second nut 20 is provided which may be screwed up against the outer faces of the said frames to hold the hooks firmly in place in any desired position longitudinally of the said beams.

Some difficulty has been experienced in heddle frames in securing a proper distribution of the heddles on the heddle bars due to the fact that more of the heddles will be confined between certain of the retaining hooks, which previously have been fixed in the frame, than between others. In the present instance in adjusting the heddles to the frame, the said hooks 16 are left loose in the slots and are free to move longitudinally therein so that when more than the proper number of the heddles are found between any two adjacent hooks 16, the said hooks

may be moved laterally so as to provide more room for the heddles, and in this way it will be apparent that without trouble a substantially even distribution of the heddles on the heddle bars may be obtained. When the correct distribution is obtained, the said hooks may be locked firmly in place by means of the nut 20, as hitherto explained.

Suitable bolts 21 are also provided for attaching the frames in the machines, said bolts being carried in the upper and lower recesses and slots of the top and base bars respectively, and being longitudinally movable therein in the manner of the hooks 16. Said bolts 21 are provided with nuts or heads 22, which are adapted to occupy the said recesses, and are further provided with nuts 23, by means of which the said bolts may be secured in place in any desired position longitudinally of the top and bottom frames. This lateral adjustment of the bolts in the frame permits of a true adjustment in the machine of the frames, so that there is an even pull exerted upon the frame, with no tendency to pull the frames out of the proper alignments.

The side pieces 8 take care of the rubbing of the adjacent frames together, and act as bumpers to take the brunt of the wear and to provide smooth surfaces greatly reducing the friction when the frames rub together.

In frames of this nature, it will be apparent that by changing the lengths of the side bars 10, frames of any desired width may be had, and by employing integral side pieces 8 of the desired length of the frame, a number of the smaller lengths of the metal beams 2 may be added to give top and bottom bars of the desired lengths. I have also found that with my construction it is possible to provide a frame which, while taking up in a loom but half the room of the ordinary wooden frame, still possesses the same or a greater strength.

I claim:

1. A heddle frame comprising top and base bars having at each end a pair of spaced recesses, with side bars having at each end a pair of spaced lateral projections adapted to occupy the respective recesses in said top and base bars.

2. A heddle frame comprising top, base bars and side bars, said top and base bars having at each end a pair of recesses disposed in longitudinal alignment with the side bars, and said side bars having at each end a pair of lateral projections adapted to occupy the said pairs of recesses.

3. A heddle frame comprising top, base and side bars, said top and base bars having longitudinal recesses extending inwardly from the inner edges thereof, retaining elements mounted in said recesses and free to move longitudinally thereof, means for securing said elements to the said bars to render them immovable in said recesses, and heddle rods engaged by said retaining elements.

4. A heddle frame comprising top, base and side bars, said top and base bars having longitudinal recesses extending inwardly from the inner longitudinal edges thereof, and heddle rod retaining elements comprising a head disposed and movable longitudinally in said recess and a rod-engaging member extending outwardly from the said recess.

5. A heddle frame comprising top, base and side bars, said top and base bars having a longitudinal recess extending inwardly from the outer longitudinal edges thereof, attaching elements mounted in said recesses and movable longitudinally therein, and means for securing said elements to the bars to render them immovable in said recesses.

6. A heddle frame comprising a top and a base bar, with side bars uniting said top and base bars and detachably connected therewith, said top and base bars each comprising one or more bars having a recess extending over the entire length of each longitudinal edge, with an integral facing element secured at each side to said bar or bars, substantially as and for the purposes set forth.

SAMUEL G. BENNETT.