F. S. PRATT.

Loom Heddle-Frame.

No. 162,191. Patented April 20, 1875.

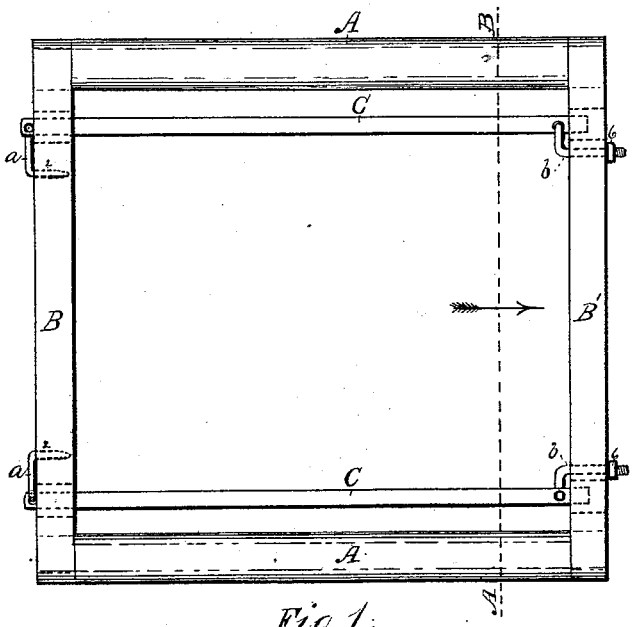

Fig. 1.

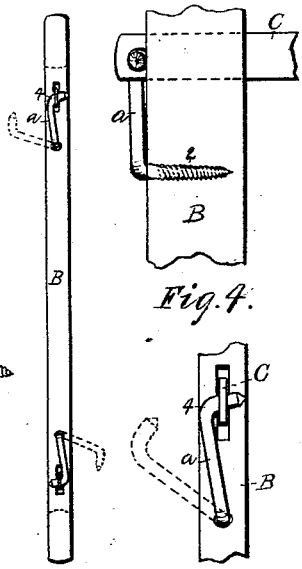

Fig. 2.

Fig. 4.

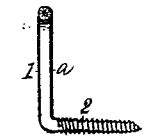

Fig. 8.

Fig. 5.

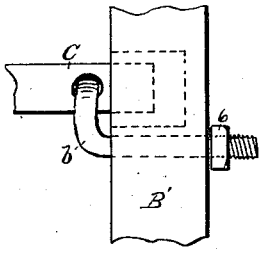

Fig. 6.

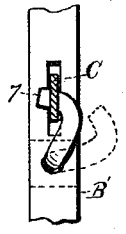

Fig. 7.

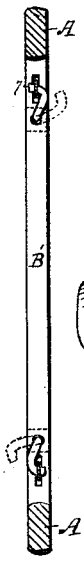

Fig. 3.

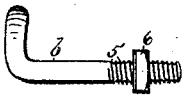

Fig. 9.

Witnesses;
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UNITED STATES PATENT OFFICE.

FREDERIC S. PRATT, OF WORCESTER, MASSACHUSETTS.

IMPROVEMENT IN LOOM HEDDLE-FRAMES.

Specification forming part of Letters Patent No. **162,191**, dated April 20, 1875; application filed February 15, 1875.

To all whom it may concern:

Be it known that I, FREDERIC S. PRATT, of the city and county of Worcester and Commonwealth of Massachusetts, have invented certain new and useful Improvements in Harness-Frames for Supporting Metallic Heddles for Weaving Purposes; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings forming a part of this specification, and in which—

Figure 1 represents a front view of a short harness-frame, having my improvements applied thereto. Fig. 2 represents a view of the left-hand end. Fig. 3 represents a section on line A B, Fig. 1; and Figs. 4, 5, 6, 7, 8, and 9 represent, upon an enlarged scale, parts and sections of parts shown in Fig. 1, with a view of illustrating the improvements or my invention more clearly.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it more in detail.

In the drawings, the parts marked A A are the top and bottom rails, and the parts marked B B′ are the side rails, of the harness-frame, said parts being united at their ends by tongues and mortises, in the usual manner. The side rails B B′ are provided with narrow mortises or slots, through which the heddle-holding bars or rods C C are passed. These rods have holes in their ends for the reception of the ends of the screw-holding hooks *a a*, and the nut-adjusting hooks *b b*. The screw-holding hooks *a a* are made from wire, having a body, 1, and a bent end, 2, with a screw-thread cut thereon, which bent end 2 is screwed into a hole formed in the edge of the rail B, until the body 1 comes nearly in contact with the edge of the rail, when it is ready for use for holding the rail by passing the other hooked end 4 through the hole in one end of the bar or rod C, as indicated in the drawings. The other end of the bar or rod C is then secured by means of the nut-adjusting hook-fastening *b*, as follows: The screw end 5 is passed through a hole in the rail B′, and nut 6 is then screwed upon its outer end, after which hooked end 7 is passed through a hole in the other end of bar C, and nut 6 screwed up until the bar or rod C is drawn in the direction of the arrow, Fig. 1, until the end 4 of the screw-fastening *a* is drawn up against the edge of rail B, and by which operation the bar or rod C is held in a firm and secure position for supporting the heddles, by means of the two fastenings *a* and *b*, while the bar or rod C is kept from twisting or turning by means of the ends entering slots in the side rails B B′.

When the fastening *a* is screwed into the edge of rail B, the upper end of the body part 1 naturally stands out a little from the rails, so that there is a spring action on the part of the fastening *a*, whereby if nut 6 should work loose a little without being observed by the operator, the slack would be taken up by the spring of body 1 of the fastening *a*, thus preventing either of the hooked ends 4 and 7 from working out of their respective holes in rod or bar C. It will also be observed that the hooked ends 4 and 7 incline toward the ends of the rod, and thus tend to prevent the withdrawal of the hooks 4 and 7 from their respective holes in the bar or rod C until after nut 6 has been turned back some distance upon the end 5.

In the application of the fastenings *a* and *b* to the rails B and B′, the latter do not have to be cut away so as to weaken them, which is one great advantage of my invention over other fastening devices which have heretofore been employed. Then, again, by the use of my improved fastenings, the necessity of the rounding and heading of one end of the bar or rod C is obviated, and both ends or either of the ends of the rod or bar C can be detached, for the purpose of stringing heddles upon both ends of the bar. This advantage is particularly important and valuable, especially in the use of harnesses on broad looms, in which case the harnesses are sometimes required to be nine feet in length, and the stringing of the heddles wholly at one end is found, in such cases, to be a very inconvenient and tedious operation, since the heddles have to be distributed over the whole length of the rods.

All of the above objections are obviated by the use of my said improvements, while the fastening devices themselves can be made quite cheaply, and are not liable to break or get out of order.

The fastening *a* is a very simple yet effectual one, and in the use of short harness-frames it may be used with good results at both ends of bar or rod C.

It will be noted that the screw-shanks 2 and 5 serve as pivots or axes upon which, as indicated by dotted lines in the drawing, the hooks proper can turn or vibrate to engage or release the heddle-bar. It will also be observed that the fastening is self-tightening—that is to say, when it is screwed up to pass its hooked end 4 through the hole in the end of the bar or rod C, it binds itself by screwing into the conical hole in the rail B, the hole being made smaller than the screw end 2; and as the rail B is made of hard wood, this self-tightening effect is not only effectual in holding the fastening in place, but is also durable and strong, and in case, after years of use, it should become to any great extent loosened, it can be made as effectual as when first used, by simply plugging, and boring a new hole in the plug. It will also be observed that only one form of fastening, *a*, and one form of fastening, *b*, is necessary for both the upper and lower rods C.

Those skilled in the art to which my invention belongs cannot fail to appreciate the practical advantages which must necessarily attend the adoption and use of my said improvements.

Having described my improvements in harness-frames for supporting metallic heddles for weaving purposes, what I claim therein as new and of my invention, and desire to secure by Letters Patent, is—

1. In combination with the heddle-bar and harness-frame, the fastening devices, consisting each of a screw-threaded shank and a hook proper standing at right angles or thereabout to said shank, the shank adapted for attachment to the harness-frame, and serving as the axis on which the hook can swing to engage with or be disengaged from the heddle-bar, substantially as shown and set forth.

2. The combination, with the heddle-bar and harness-frame, of heddle-bar fastening-hooks capable of vibratory movement upon an axis or pivot, and adjustable, one or both, laterally, or in the direction of the length of the heddle-bar, to secure the proper tension of the same, substantially as shown and set forth.

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Witnesses:
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EDWIN E. MOORE.