(No Model.)

R. J. WELLES.

HARNESS PAD TREE.

No. 348,253. Patented Aug. 31, 1886.

Fig. 1.

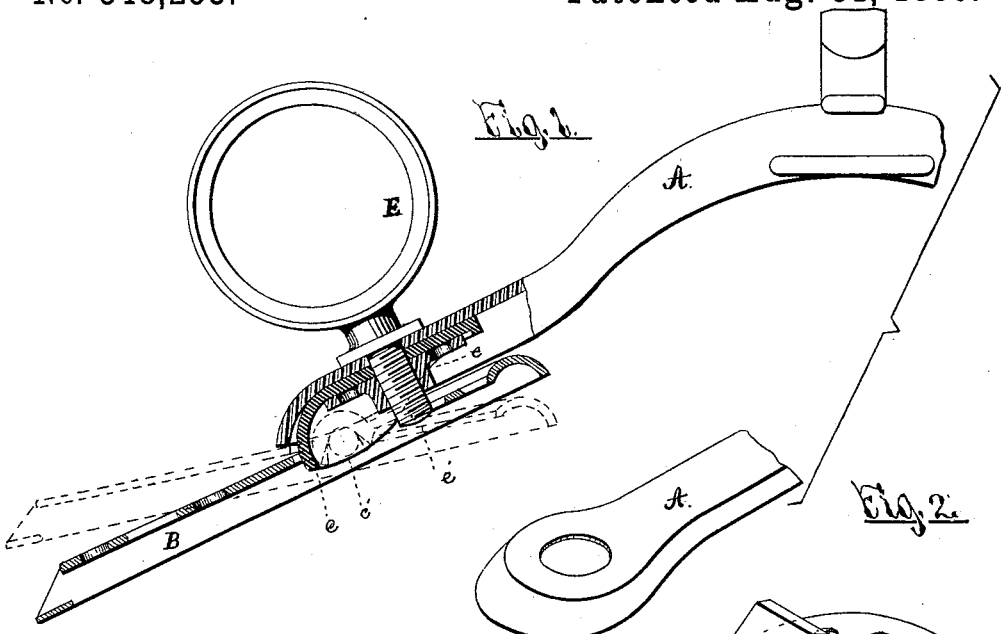
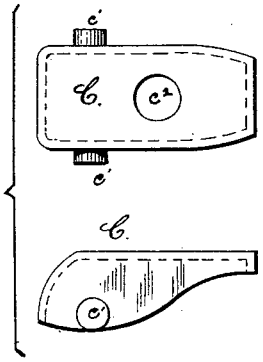


Fig. 2.

Fig. 4.



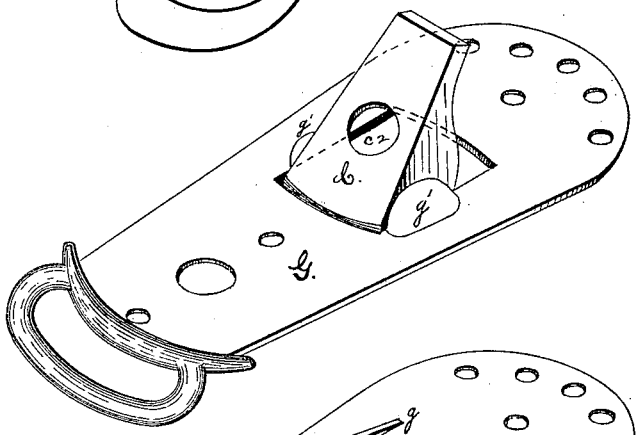
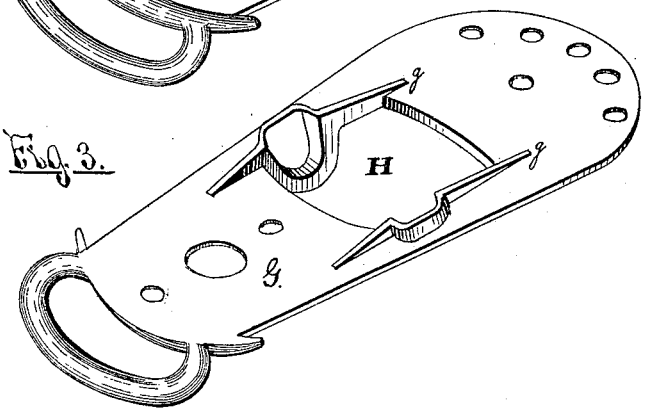


Fig. 3.



Witnesses.

W. A. Smith.

H. Widdaugh

Inventor.

R. J. Welles

N. PETERS. Photo-Lithographer, Washington, D. C.

UNITED STATES PATENT OFFICE.

RICHARD J. WELLES, OF ATHENS, PENNSYLVANIA.

HARNESS-PAD TREE.

SPECIFICATION forming part of Letters Patent No. 348,253, dated August 31, 1886.

Application filed February 27, 1886. Serial No. 193,518. (No model.)

To all whom it may concern:

Be it known that I, RICHARD J. WELLES, a citizen of the United States, residing at Athens, in the county of Bradford, State of Pennsylvania, have invented a new and useful Harness-Pad Tree, of which the following is a specification.

My invention relates to improvements in that class of harness-pad trees or plates generally known in the trade as "self-adjusting" trees, or those that are hinged on each side to a "yoke," so as to allow the plates to adjust themselves to the back of the horse, and are usually put on the top of the harness-pad, or sewed under the top layer of the pad, and connected by an arched yoke which is hinged at each end to the plates near where the terret passes through. Heretofore these have been made with the terret shank or screw end fitted into a nut which forms part of the tree or one of its pieces, the nut-piece being threaded to fit the screw on the shank of the terret made to go with it. When made in this manner, no other terret than the one sold with the tree will fit the part used as a nut, and in case of breakage it is impossible to use any other make of terret than those that will fit the screw-threads in the nut which forms part of the tree. As different sizes are used by different makers of such goods, no changes can be made from one sort to another. In the old way the nut part must be made with a core when casting the same, and the hole and grooves for the yoke afterward cleaned and filed to fit, and a thread or screw cut in the hole, which adds to the cost of manufacture. Another serious defect is that the nut parts which serve as a hinge to the plates do not have a proper bearing-surface to prevent a side motion, unless screwed so tightly as to prevent proper adjustment of the plates. In my invention I overcome all these defects, making it less costly to manufacture, enabling the user to change or use any sort of terret he may have at hand, in case of breakage, and, by the shape I make the nut-carrier sides give such bearing at the joint or hinge as to prevent any motion sidewise without screwing so tightly, all of which is set forth in the accompanying drawings, as illustrated by them, in which—

Figure 1 shows a side view of part of the arched yoke A, with the end of the yoke hinged to the plate B, as shown by the sectional view of same, the end of the yoke A and the plate B showing a vertical section of each, together with the nut-carrier C, through which the shank *i* of the terret E passes to the common nut *e*, generally used on such devices. Fig. 2 shows the form of plate G used when the plate is sewed in under the top layer of leather, with the nut-carrier C in position, with loose end raised. Fig. 3 shows the same plate bottom side upward, to show the socket-bearings in which the trunnions *c′ c′* of the nut-carrier C, Fig. 4, turn in, and the raised beadings *g g*, Fig. 3, on each side of the large central opening, to strengthen the plate where it is cut away for the reception of the nut-carrier C. Fig. 4 shows the nut-carrier C, with its trunnions *c′ c′*, and also the same turned edgewise to show the form at the sides which form a broad wearing-surface or bearing about the trunnions.

Similar letters refer to similar parts throughout the several views.

The yoke A, Fig. 1, is cast in one piece of the usual form, having concave bearings upon the under sides at each end, (not shown in drawings,) in which fit the raised convex bearings *g′ g′* of the plate G, Fig. 2, and the ends of the yoke, on its under side, are made of such shape as will conform to the shape of the upper side of the nut-carrier C, Fig. 4, which fits under the ends of the yoke, as shown in Fig. 1.

The nut-carrier C, Fig. 4, is cast of the shape shown, having at its sides the round pins or trunnions *c′ c′* at right angles with its length and near one end. The carrier has narrow deep edges, which form an open chamber on its under side to receive a terret-nut of any ordinary size or shape, and a hole, c^2, for the screw end of the terret.

The trunnions *c′ c′*, Fig. 4, are placed at the lower edges of the sides of the nut-carrier and fit into the raised bearings *g′ g′* of the plate G, Fig. 2, upon their under sides, and the nut-carrier passes up through the central opening in the plate, as shown in Fig. 2. When in place, the deep sides of the nut-carrier present a large wearing-surface against the edges of the plate and prevent any motion but a hinge transversely with its length.

To put together, the terret-shank is put through the hole in the end of the yoke A and

the hole c^2 of the nut-carrier, after the latter is put in place from the under side of the plate, as shown in Fig. 2; the terret-nut is placed in the chamber of the carrier by raising the end of the same above the plate, the screw end of the terret inserted in the nut and screwed fast. The sides of the nut-carrier C prevent the nut from turning as the terret is screwed down, and the trunnions c' c' of the carrier are drawn up into the sockets or bearings in the plate, pressing the raised convex bearings g' g' of the plate into the concave bearings in the under side of the yoke, and drawing the upper side or top of the nut-carrier C up under and against the ends of the yoke A, which is formed to fit the top of the nut-carrier projecting above the plate G. This makes a strong hinged joint, and there is no side-motion. In using this form of plate, (shown in Fig. 2.) a small piece of metal or leather is riveted or tacked on the under side of the plate, after the carrier C is in place, to prevent the hair or other material with which the pad is filled from working up about the nut-carrier.

To remove or change the nuts, it is only necessary to unscrew the terret E, Fig. 1, raise the yoke A from the plate and remove the nut by raising the loose end of the carrier, as shown in Fig. 2, when any other may be put in and the terret belonging to the new nut inserted and screwed up tight again.

Having thus fully described my invention, what I desire to claim and secure by Letters Patent is—

1. In a self-adjusting harness-tree, the nut-carrier C, having an open recessed chamber on its under side of such size and shape as to receive the nuts of harness-terrets, for the purpose set forth and described.

2. In a self-adjusting harness-tree, the nut-carrier C, having an open recessed chamber on its under side, and the trunnions c' c', projecting from each side at right angles with its length, as shown and described.

3. In a self-adjusting harness-tree, the nut-carrier C, having an open recessed chamber on its under side, the trunnions c' c', projecting from each side at right angles with its length, and the edges of the chamber deepest at one end, for the purpose set forth and described.

4. In a self-adjusting harness-tree, the nut-carrier C, with an open recessed chamber on its under side, and the trunnions c' c', the edges of the recessed chamber deepest at one end, in combination with the plate G, having the central opening, H, with the raised beadings g g at the sides of the opening, for the purpose set forth.

5. The combination, in a self-adjusting harness-tree, of the nut-carrier C, having the recessed chamber on its under side, and its depending edges deepest at one end, and hinged by the trunnions c' c' to the plate G, to permit the nut to be inserted in the recessed chamber without disconnecting the carrier from the plate G, for the purpose set forth.

6. The combination, in a self-adjusting harness-tree, of the yoke A, terret E, and nut e, with the nut-carrier C, having a recessed chamber on its under side, deepest depending edges at one end, and hinged to the plate G by the trunnions c' c', so as to permit of raising one end of the carrier C above the plate G on removal of the terret E, all for the purposes set forth and described.

RICHARD J. WELLES.

Witnesses:
H. MIDDAUGH,
H. C. HAYES.