(No Model.)

A. T. HATCH.

WHIFFLETREE AND HOOK.

No. 403,664. Patented May 21, 1889.

Fig. 1.

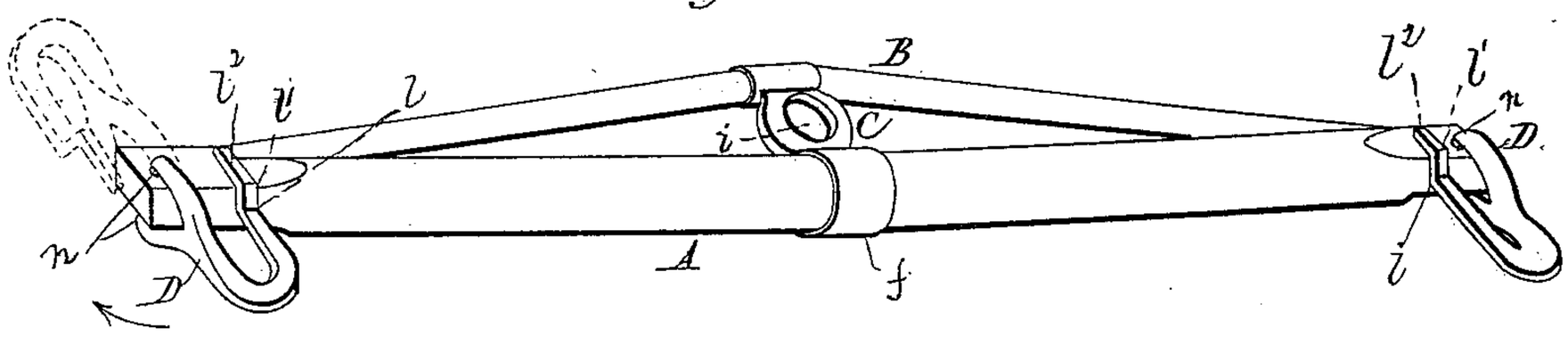


Fig. 2.

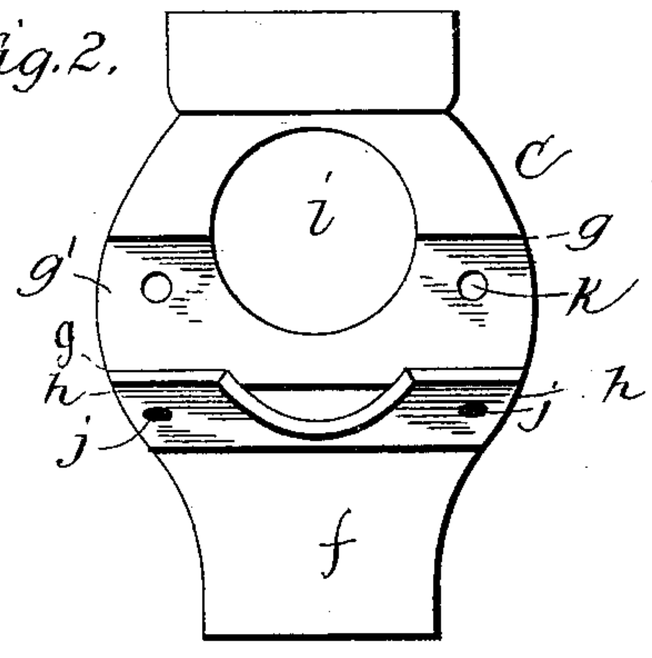
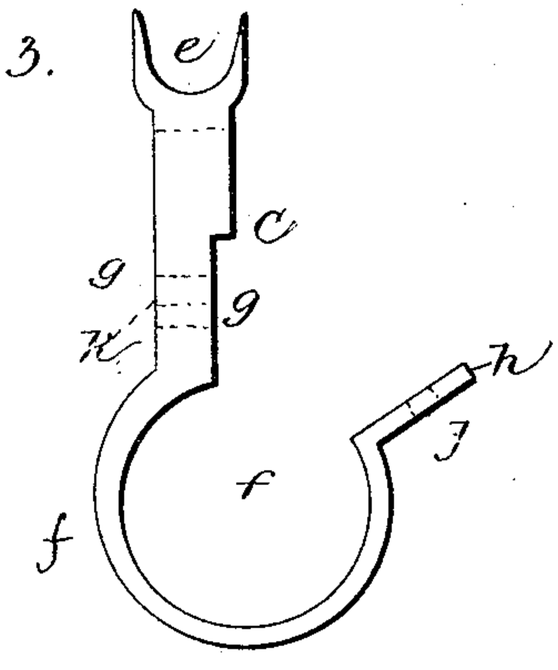


Fig. 3.



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WHIFFLETREE AND HOOK.

SPECIFICATION forming part of Letters Patent No. 403,664, dated May 21, 1889.

Application filed March 1, 1889. Serial No. 301,671. (No model.)

To all whom it may concern:

Be it known that I, ALBERT T. HATCH, of South Elgin, in the county of Kane and State of Illinois, have invented certain new and useful Improvements in Whiffletrees and Hooks; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My present invention is a further improvement on that patented to myself and Hyman Hatch, February 6, 1883, No. 271,632; and it relates more especially to the construction of the tree, and also to the construction and action of the pivoted hook, whereby the loop or eye of the trace cannot become accidentally unhooked.

In the drawings, Figure 1 shows in perpsective my improved whiffletree; Fig. 2, a plan, and Fig. 3 an edge view of the central brace.

A is the main body or whiffletree proper; B, a truss; C, a central brace or tie-piece for connecting and strengthening both; and D, the pivoted hooks at each end of the whiffletree, each having a double bend between its tip and the curve of the hook.

The parts A and B may be made of wrought-iron, malleable iron, or mild steel, and may be either wholly or partly of solid metal; or they may be one or both made, if preferred, of tubing, such as gas-pipe. Usually I make them, or the part A especially, of gas-pipe, and make the ends to which the hooks are attached solid by welding into them solid metal plugs. The ends of the part A are flattened to a vertical plane, or substantially so. The truss B is welded at its ends to the part A, and these parts are then both braced centrally and the whole made extremely strong and capable of meeting any kind of heavy work, and resisting unusual strain by means of the tie-piece C, which is made to fit in and to be placed between these parts A and B, and there secured, as will now be described. This piece C is preferably made of malleable iron, though it may be of wrought-iron or mild steel and drop-forged. When ready to be applied to the tree and truss, and after these have been first welded together, as above stated, this piece C will appear as shown in Figs. 2 and 3. That end of it which is to bear against the truss is made with a semicircular groove, *e*, and the other end, *f*, which is to encircle the tree A, is, as shown, bent partially toward its ultimate circular form ready to be wrapped around the center of the tree, rabbets *g* being made in the main part or body *g'* of the brace, and adapted to receive the ends *h h* of the part *f*, and these ends *h h* are each, as also the rabbets *g*, provided with a hole, *j*, which may be drilled therein, to receive rivets for uniting these parts permanently together, rivet-holes *k* being also made for this purpose in the parts *g*. The tree A has an outward bend at its center in a direction opposite that of the truss B. To apply this brace C between the tree and truss, the grooved part *e* is applied to bear against the center of the truss, and the part *f* is bent and wrapped around the whiffletree and the parts *h g* closely united by rivets inserted in holes *j k*. In some cases, if desired, the grooved part *e* may be welded to the truss. When not so welded, the brace C may be more readily removed and another one substituted, if desired. The central opening, *i*, in the broad strong body or web part of the brace, it will be understood, is to receive the center bolt of the whiffletree. The brace C, being in a single piece, greatly simplifies, lightens, and cheapens as well as strengthens it, as compared with any central bracing devices made of several pieces, and at the same time avoids any liability of any part getting loose, detached, or mislaid, and the thrust or strain comes against the middle and strongest part, *g g'*.

The pivoted hooks D are made and applied as follows: They are constructed with two right-angled bends, *i i'*, and a long extension, l^2, beyond the bend *l'*, such extension, when the hook is closed, reaching across the top surface of the plugged ends of the tree A, and when the traces are attached and a pull given to the hooks the vertical portion of these bent parts abuts directly against the front face of the whiffletree, preventing any further inward swing or movement of the hook. These bends *l l'* also serve another and more important purpose—namely, the bend being up-

ward any eye, *m*, of any trace always tending to drop downward by gravity cannot escape from the hook until lifted up and over this bend. The ends of the whiffletree are preferably rectangular in cross-section, as shown, or made at least with the top front edge sufficiently squared or angular to receive the bend *l l'* and arrest the further inward swing of the hook. The pivotal point of the hooks is nearer to the end than it is to the front of the tree, and the distance between the extension l^2 and such pivotal point is such that in order to attach the trace the hook must be turned back about half a circle.

I prefer to center or pivot the hook in a hole made through the solid ends of the whiffletree, as shown at *n*, and there are no other holes, recesses, or rabbets in such ends to lessen or diminish their inherent great strength; and when the tree is of metal no ferrules or sleeves are required.

The bend *l l'* interposes a positive check to the accidental slipping off of the trace from its hook under any circumstances. The bend, however, offers no impediment to the slipping on of the trace-eye when harnessing the horse to the vehicle, and when harnessing or unharnessing the hooks, as above stated, swing back far enough to give the required space between their tips and the extreme end of the whiffletree to admit or to remove the eye of the trace.

I claim—

1. In combination with a whiffletree, trace-hooks as made with two angular bends, *l l'*, therein, and with an extension, l^2, beyond the same and pivoted directly on the whiffletree, all as and for the purposes set forth.

2. In combination with the whiffletree and its truss-rod, the center brace made in a single piece, having its central portion provided with the rabbets *g* and bolt-hole *i*, and having the arched end *e* and the curved part *f*, provided with the parts *h*, all as shown and described.

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