



# UNITED STATES PATENT OFFICE.

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## WHIFFLETREE.

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*To all whom it may concern:*

Be it known that I, SAMUEL HENRY HAAS, a citizen of the United States, residing at the city of Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Whiffletrees, of which the following is a specification.

My invention relates in general to whiffletrees, and more particularly to the construction, arrangement, and operation of the parts of the couplings or irons for connecting singletrees to a draft-bar and of hooks for connecting traces to singletrees.

The principal objects of my invention are, first, to provide a neat, compact, durable, and strong double or single whiffletree; second, to provide a comparatively-inexpensive coupling for detachably connecting the singletrees to the draft-bar, so that adjacent ends of traces may swing above and clear of the draft-bar and in such manner that the singletrees cannot become accidentally detached from the draft-bar, and, third, to simplify the construction of the singletree-hooks, so that the same are rendered less expensive to manufacture and far more durable and reliable in use.

My invention, stated in general terms, consists of a detachable coupling for connecting a draft-bar and singletree, which comprises a cap adapted to be fitted over the end of the draft-bar and having a transversely-ranging socket located at the rear and provided with a longitudinal recess or slot and a bushing provided at the rear with an eye and with a pintle having a lug on the rear side adapted to slide through said slot and engage the under side of the socket and having an inclined bore adapted for the reception of the center of the singletree, whereby the ends of the traces that are attached to the inner ends of the singletrees are caused to swing above and clear of the draft-bar.

My invention further consists of a singletree-hook having a solid shank provided with a stop-pin and with a gravity-pawl pivoted to one side thereof, the construction being such that when the pawl engages the stop-pin the hook is closed; and my invention further consists of the improvements hereinafter described and claimed.

The nature and objects of my invention

will be more fully understood from the following description, taken in connection with the accompanying drawings, forming part 55 hereof, and in which—

Figure 1 is a front elevation of a doubletree embodying features of my invention and showing the inner or adjacent ends of the singletrees adapted to swing above and clear of the doubletree. Fig. 2 is a top or plan view of the same. Fig. 3 is a perspective view of the outer end of the draft-bar, showing a singletree detachably connected therewith by means of a coupling or iron embodying features of my invention. Fig. 4 is a detached view of the coupling or iron illustrated in Fig. 3, showing the slotted or recessed socket adapted for the reception of a pintle provided with a lug. Fig. 5 is a perspective view of a singletree-hook embodying features of my invention and provided with a ring adapted to be fitted onto the singletree. Fig. 6 is a similar view of the same, showing a screw adapted to be inserted into the end of a singletree, and Fig. 7 is a sectional view showing a singletree detachably connected with a draft-bar by means of the hook illustrated in Fig. 5.

In the drawings, *a* is a draft-bar provided at or near the center thereof with a ring *a'*, 80 adapted to be connected with a cart, carriage, plow, or other vehicle in the usual or in any other preferred manner.

*b* are singletrees centrally pivoted to the respective extremities of the draft-bar *a* and adapted to be connected with traces forming part of the harness of animals constituting a team. Each of the singletrees *b* is detachably connected with the draft-bar *a* by means of an iron or coupling *C*. This coupling *C* 90 comprises a cap *c'*, fitted over the end of the draft-bar *a* and having a transversely-ranging socket *c<sup>2</sup>* located at the rear thereof and provided with a longitudinal slot *c<sup>3</sup>*, and a bushing *d*, provided at the rear with a pintle 95 *d'*, having a lug *d<sup>2</sup>* projecting radially from the rear side of the pintle. The two members *C* and *d* of this coupling may be connected together by turning the singletree in such manner that the lug *d<sup>2</sup>* and slot *c<sup>3</sup>* are brought into alignment, as shown in Fig. 4, and then fitting the pintle *d'* into its socket *c<sup>2</sup>*. The singletree *b* is then turned into position for use, as shown in Fig. 3, whereby the lug *d<sup>2</sup>* is 100

caused to engage with the under side of the socket  $c^2$ . Thus it will be seen that the singletree  $b$  is afforded the required freedom of swinging motion for accommodating the alternating motion of the shoulders of a horse or other animal, and is also prevented from becoming accidentally detached when in use from the draft-bar  $a$ . However, the singletrees  $b$  may be readily detached from the draft-bar  $a$ , whenever it becomes necessary or desirable so to do, by the simple operation of turning them into the position shown in Fig. 4 and then lifting them up and off from the draft-bar  $a$ .

It is important that the ends of the traces that are attached to the adjacent or the inner ends of the respective singletrees should swing above and clear of the draft-bar  $a$ ; otherwise the traces would by abrasion injure the draft-bar  $a$ . The avoidance of such serious and objectionable results is accomplished according to my invention by providing the bushing  $d$  with an inclined bore  $d^3$  for the reception of the central portion of the singletree, so that the latter is inclined to the draft-bar, as shown in Fig. 1, thus affording an ample space, as at  $a^3$ , between the adjacent traces and the draft-bar. In the present instance the required inclination of the bore  $d^3$  is attained by making the bottom plate  $d^4$  of bushing  $d$  wedge-shaped—that is, thicker at  $d^5$  than at  $d^6$ , as shown by the dotted lines in Fig. 4. However, if preferred, the bottom plate may be of a uniform thickness and the top plate may be made wedge-shaped.

$d^7$  is an eye projecting from the rear portion of the bushing  $d$  and adapted for attachment to a cart, plow, or other vehicle when the singletree  $b$  is employed for a single team. When the singletree  $b$  is attached to a draft-bar  $a$ , the eye  $d^7$  may be connected with a chain or strap  $e$  for limiting the swing of the draft-bar  $a$ . Of course the eye  $d^7$  and chain  $e$  may be connected together by means of a variety of well-known appliances; but, however, in the present instance a hook  $f$ , embodying features of my invention, is employed. This hook  $f$ , Figs. 3, 5, 6, and 7, has a solid integral shank  $f'$  and is provided with a stop-pin  $f^2$ .

$f^3$  is a pawl pivoted to the side of the shank  $f$  and provided with a latch  $f^4$  for opening the hook and with a weighted handle  $f^5$  for normally causing the latch  $f^4$  to close the hook and for permitting of the manual opening of the same.

The shank  $f'$  of the hook  $f$  may be provided with a ring  $f^6$ , adapted to be fitted over or onto the end of a singletree, as shown in Figs. 1, 2, and 3, or the shank  $f'$  of the hook  $f$  may be provided with a screw  $f^7$ , as shown in Fig. 6, adapted to be screwed into the end of a singletree. In either case the bill of the hook may be inserted into an eye or aperture in the end of the trace in the usual manner, it being understood that the gravity-pawl  $f^3$  is turned during the operation

and returns again automatically into contact with the stop-pin  $f^2$  after the hook  $f$  has been inserted into the trace, and thus causes the latch  $f^4$  to close the hook and prevent the trace from becoming accidentally detached. The hook  $f$  may, however, be opened by shifting the latch  $f^4$  in the direction indicated by the arrow in Figs. 5 and 6, so that the trace may be readily removed.

Although the hereinabove-described hook is especially adapted for use in attaching the traces, still it is adapted for other uses in connection with single and double trees. For example, it may be connected with the center of a singletree  $b$ , as shown in Fig. 7, and used as a coupling to connect the singletree with an eye  $x$  at the end of a draft-bar  $a$ .

I desire it to be understood that no claim alone is made to a gravity-pawl, because it has been proposed to provide a device with a hook having a slotted shank adapted for the reception of a gravity-pawl; but the cost of such a device has been found to be excessive and the shank weakened and subject to accidental breakage by the cutting away or removal of the metal therefrom. A device embodying the features of my invention and arranged as hereinbefore described is simpler, and the shank of the hook, being solid, is much stronger, far less expensive, and much more durable. Moreover, a hook of the character hereinabove mentioned is a receptacle for mud, snow, ice, and other extraneous matter, which impairs and materially interferes with the free working of the gravity-pawl thereof, while, on the contrary, the hook, with its gravity-pawl, of my invention is afforded a perfect freedom of motion at all times and under all conditions.

Having thus described the nature and objects of my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with whiffletrees and a draft-bar, of a detachable coupling comprising a rectangular cap fitted over the end of the draft-bar and having a transversely-ranging slotted socket, a rectangular bushing having an inclined bore for the reception of the singletree and adapted to play on the cap, a draft-chain eye projecting from the rear of the bushing, and a pintle connected with the shank of said eye and provided with a lug, substantially as and for the purposes set forth.

2. The combination, with whiffletrees and a draft-bar, of a detachable coupling comprising a cap fitted over the end of the draft-bar and having a transversely-ranging slotted socket, a bushing for the reception of the singletree and adapted to play on the cap, a draft-chain eye projecting from the rear of the bushing, and a pintle connected with the shank of said eye and provided with a lug, substantially as and for the purposes set forth.

3. The combination, in whiffletrees and a draft-bar, of a detachable coupling comprising a cap fitted over the end of the draft-bar and having a transversely-ranging slotted

socket, a bushing for the reception of a single-  
tree and adapted to play on the cap, a draft-  
chain eye projecting from the rear of the  
bushing, a pintle connected with the shank  
5 of the eye and provided with a lug, a hook  
attached to the respective extremities of the  
whiffletrees and formed with a shank and bill,  
a weighted pawl pivotally connected with the  
side of the shank beneath the point of the  
10 bill, a latch integral with the pawl and adapt-  
ed in a vertical position to stand to one side  
of the bill and across the open end of the  
hook and also to be turned away from the

point of the bill and into alignment with the  
shank, and a stop on the side of the shank for 15  
limiting the range of motion of the weighted  
pawl, substantially as and for the purposes  
set forth.

In witness whereof I have hereunto set my  
signature in the presence of two subscribing 20  
witnesses.

SAMUEL H. HAAS.

Witnesses:

THOMAS M. SMITH,  
RICHARD C. MAXWELL.