(No Model.)

W. H. SHOLL & J. SCHNEIDER.

WHIFFLETREE.

No. 532,251. Patented Jan. 8, 1895.

FIG_1_

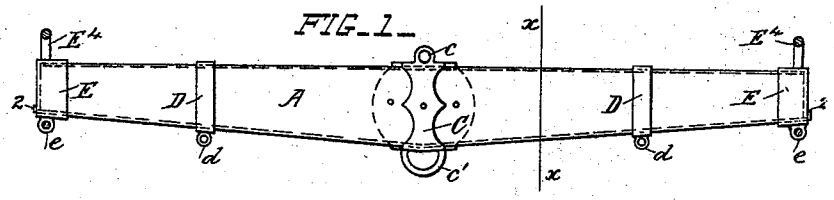


FIG_2_

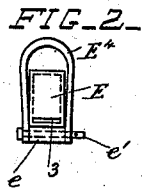


FIG_4_

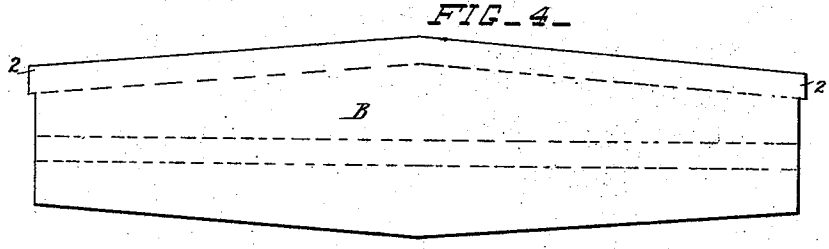


FIG_3_

FIG_5_

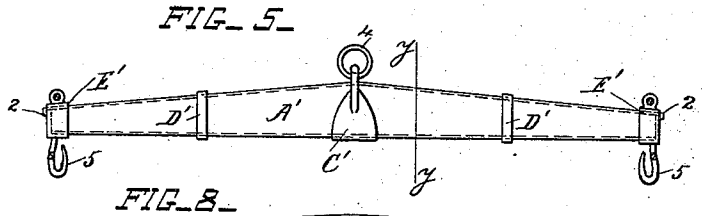


FIG_6_

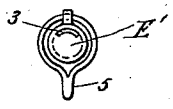


FIG_8_

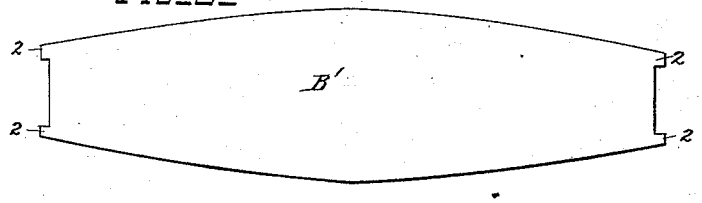


FIG_7_

FIG_9_

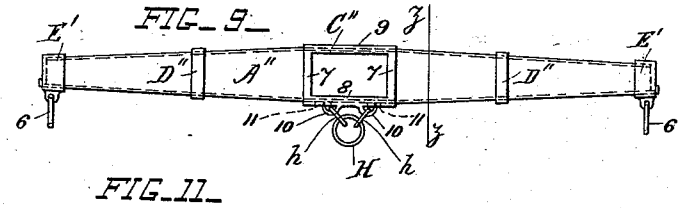
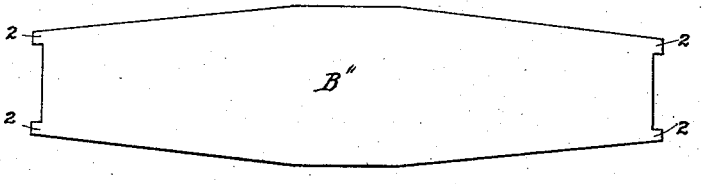


FIG_10_

FIG_11_



WITNESSES

Jno. F. Moran Jr

John Stephen

INVENTORS

William H. Sholl, and

John Schneider.

by Herbert W. Jenner.

Attorney

UNITED STATES PATENT OFFICE.

WILLIAM H. SHOLL AND JOHN SCHNEIDER, OF VALPARAISO, INDIANA.

WHIFFLETREE.

SPECIFICATION forming part of Letters Patent No. 532,251, dated January 8, 1895.

Application filed February 23, 1894. Serial No. 501,225. (No model.)

To all whom it may concern:

Be it known that we, WILLIAM H. SHOLL and JOHN SCHNEIDER, citizens of the United States, residing at Valparaiso, in the county of Porter and State of Indiana, have invented certain new and useful Improvements in Whiffletrees; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to whiffletrees; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

All the different kinds of whiffletrees, singletrees, doubletrees and neck-yokes can be constructed according to this invention.

In the drawings: Figure 1 is a plan view of a doubletree. Fig. 2 is an end view of one of its end caps. Fig. 3 is a cross-section taken on the line *x x* in Fig. 1. Fig. 4 is a detail view of the steel blank from which the doubletree is formed. Fig. 5 is a plan view of a singletree. Fig. 6 is an end view of one of its end caps. Fig. 7 is a cross-section taken on line *y y* in Fig. 5. Fig. 8 is a detail view of the steel blank from which the singletree is formed. Fig. 9 is a plan view of a neck yoke. Fig. 10 is a cross-section taken on the line *z z* in Fig. 9. Fig. 11 is a detail view of the steel blank from which the neck-yoke is formed.

In carrying out this invention a high grade of sheet steel is used, of from one-sixteenth to three thirty-seconds of an inch in thickness. This steel plate is rolled and annealed so that the required temper to give it elasticity is attained, and so that the steel plate will bear reheating to a cherry red heat without losing its elasticity. The tempered sheet steel is then cut into blanks of the size and shape adapted to be formed into singletrees, doubletrees or neck-yokes as may be required.

Fig. 4 shows the blank B for a doubletree, and the dotted lines indicate where the blank is subsequently bent. The doubletree A is preferably tapered from its center to its ends, and the blank is cut of irregular form so that the doubletree may be of the desired form. A lip 2 is formed at each end of the doubletree, for a purpose which will be more fully described hereinafter.

C is the center clip of the doubletree provided on one side with a hole *c* for the draw bolt, and a loop *c'* on the other side so that it can be attached to a plow or other implement.

D are the strengthening bands, preferably provided with eyes *d* for the attachment of stay chains.

E are the end caps provided with eyes *e* for the pins *e'* of the clevises E^4. The end caps also have holes 3 in their ends for receiving the said lips 2.

The steel blank is heated to a cherry red heat so that its elasticity is not impaired, and while hot it is bent to the form of the tubular doubletree, the longitudinal edges of the blank being brought as near together as possible.

The clip C, bands D and end caps E are then heated and shrunk onto the tubular doubletree, and are secured by rivets where necessary. The said edges are brought into close contact, and the caps cover the open ends of the doubletree. The lips 2 which project through the holes 3 in the caps are then riveted over thereby firmly securing the caps in position.

The doubletree thus formed is very light and is possessed of great strength, not only because it is formed of steel, but because the steel is of a temper which renders it elastic, and will not permit it to bend under strains or break under shocks or blows.

The singletree shown in Figs. 5 to 8 inclusive, is made from a blank B' in a similar manner to the doubletree, but the singletree A' is bent oval in cross-section instead of rectangular. The center clip C' and the bands D' are made to conform to the section of the singletree, and the center clip C' is provided with a ring 4 for engaging with the clevis E^4 of the doubletree. The end caps E' of the singletree are round to conform to the ends of the singletree, and the lips 2 and the holes 3 through which they pass are formed upon circular arcs. The end caps E' are provided with hooks 5 instead of clevises.

The neck-yoke shown in Figs. 9 to 11 inclusive, is also made from a blank B'' in a similar manner to the doubletree, but the neck-yoke A'' is bent round in cross-section throughout its length. The center portion of the neck-yoke is cylindrical, and the ends ta-

per to the end caps E′ which are exactly the same as those on the singletree A′ except for being provided with rings 6 instead of hooks 5.

The center clip C″ and the bands D″ are made to conform to the section of the neck-yoke. The center clip preferably consists of two rings 7 coupled together by longitudinal bars 8 and 9. The bar 8 is provided with two hooks 10 and holes 11 in the bar under the points of the hooks.

H is the ordinary ring which slips over the end of the vehicle pole, and *h* are two rings which engage with it. The holes 11 are made large enough to permit the rings *h* to be slipped into the hooks 10 before the clip is slid onto the neck-yoke. After the center clip has been secured on the neck-yoke, the plate of the neck-yoke retains the rings *h* in position and prevents them from becoming uncoupled from the hooks.

When the devices are made with tubular rectangular ends, the lips 2 are preferably single, and are each formed upon one edge of the blank; but when the tubular ends are round, the lips 2 are preferably made in halves, one half on each edge of the blank, as clearly shown in the drawings.

Whiffletrees constructed according to this invention are lighter than solid tubular whiffletrees, because solid tubular whiffletrees cannot be made of such thin material either by casting or welding. The cast whiffletree necessarily is thick, and a welded whiffletree cannot be formed of any thin tempered steel because its elasticity would be impaired by heating it to a welding heat. Whiffletrees constructed according to this inventon have their meeting edges tightly pressed together, thus giving them substantially the full strength due to their tubular form.

What we claim is—

1. A whiffletree, formed of thin sheet steel, tubular in form, and provided with lips at its ends; in combination with clamping devices operating to press the meeting edges of the said sheet tightly together, and end caps provided with holes engaging with the said lips and closing the ends of the whiffletree, the ends of said lips being riveted over to secure the said caps in position, substantially as set forth.

2. The combination, with a tubular whiffletree formed of thin sheet steel and provided with clamping rings and end caps; of a center clip consisting of two rings 7 coupled together by longitudinal bars 8 and 9 on opposite sides of the whiffletree, the bar 8 being provided with rigid hooks 10 and holes 11 under the points of the hooks; the ring H, and the rings *h* coupling the ring H to the hooks 10 and retained in the said hooks by the whiffletree, substantially as set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

WILLIAM H. SHOLL.
JOHN SCHNEIDER.

Witnesses:
D. E. KELLY,
C. J. KERN.