

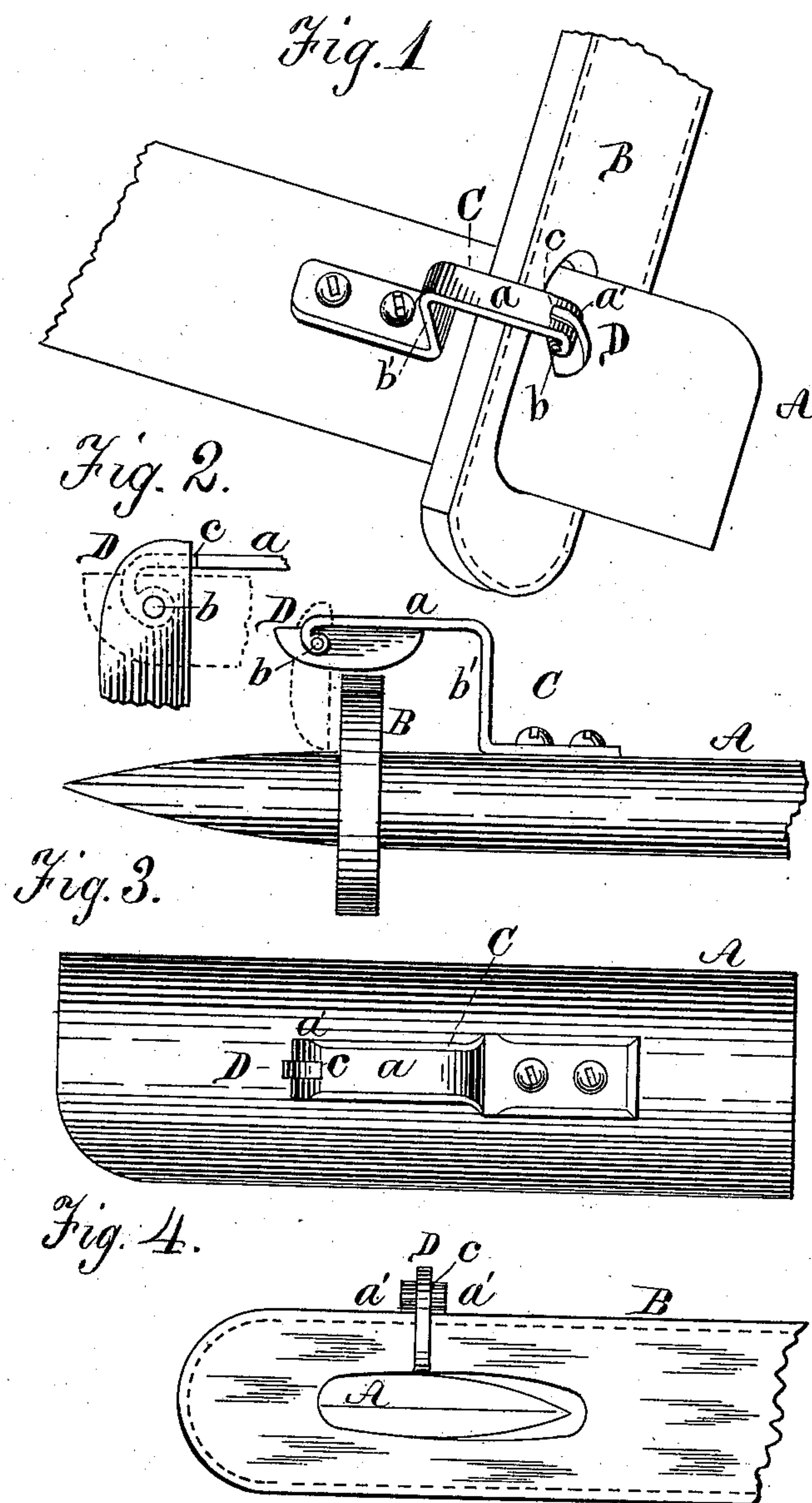
(No Model.)

F. P. CIRCLE.

TUG FASTENER.

No. 381,906.

Patented May 1, 1888.



Attest.
Albert K. Boehm.
C. C. Converse.

Inventor.
Franklin P. Circle.
B. C. Converse,
Atty.

UNITED STATES PATENT OFFICE.

FRANKLIN P. CIRCLE, OF SPRINGFIELD, OHIO, ASSIGNOR OF ONE-HALF TO
ALBERT K. HAHN, OF SAME PLACE.

TUG-FASTENER.

SPECIFICATION forming part of Letters Patent No. 381,906, dated May 1, 1888.

Application filed September 12, 1887. Serial No. 249,413. (No model.)

To all whom it may concern:

Be it known that I, FRANKLIN P. CIRCLE, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Tug-Fasteners; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to improvements in tug-fasteners.

My invention relates to that class of tug-fasteners in which a leather tug is slipped over the end of the singletree, and the fastener serves to retain it in place on the latter.

The object of my invention is to produce a tug-fastener which is automatic in its operation, which is simple, cheap, and durable, and which can be applied without cutting away any portion of the singletree, and which may be used with any of the ordinary carriage or buggy singletrees.

My invention consists in a fastener secured to the top of the singletree, made of a thin narrow piece of strap-steel bent at opposite right-angles having an upright and an arm extending therefrom in longitudinal line toward the end of the singletree. A drop-latch is pivoted in the end of this arm, which is raised up in the operation of slipping on the end of the tug, and falls by its own gravity, thus securing the latter in its place on the singletree.

Figure 1 is a perspective view of my improved tug-fastener as applied to a singletree, a portion of the latter and the attached tug being shown in this figure. Fig. 2 is an elevation of the same, as seen from the rear side of the singletree. Fig. 3 is a top view of the singletree and fastener. Fig. 4 is an end view of the singletree and fastener with the tug attached.

A is the singletree, which is of the kind commonly in use on buggies and carriages, and is without irons, the tug B being attached by slipping it on over the end. The fastener C is formed of a long thin narrow plate of metal

bent with two right angles, and its ends extending in opposite directions in parallel planes. The lower arm is fastened to the top of the singletree in the central longitudinal line of the latter near its end. The end of the top arm, *a*, is bent downward and inward to form a scroll or turn for bearings for a pin, *b*, which extends transversely through it. In the case of a cast or malleable iron fastener-plate, a hole is drilled through the depending outer end of *a* transversely, for the reception of the pin *b*. The end of the arm *a* has a vertical longitudinal slot, *c*, cut through the bearings into the horizontal part, and within this slot is suspended the drop-latch D upon the pin *b*. The pin may be fastened in the drop-latch and turn in the bearings *a' a'*; but by preference it is fastened in the latter, and a hole in the upper part of drop-latch D (extending transversely through it) allows of the passage of the pin *b*. This hole is slightly larger than the latter to allow the drop-latch to hang loosely thereon and to swing freely inward from a perpendicular to a horizontal position, as seen in Fig. 2.

The drop-latch D is preferably of segment shape, and is pivoted near its top end, so as to allow the latter to extend slightly above the top of the arm *a*, in order to manipulate it from the upper end with the finger to throw it upward to release the tug B. The latch is suspended with its straight edge inward, and that part of it above the pivot engages the rear or inner end of the slot *c*, which forms a stop to arrest the movement of the latch at the point when the latter swings downward and outward to a perpendicular, as seen in the dotted lines of the main figure, 2, and in the enlarged detail of same. In this figure the operation of slipping on the tug B and securing it by the fastener is shown. The latch D hangs as seen in dotted lines when in its normal position, and as the tug B is pushed on under arm *a* it elevates the drop-latch D until the tug gets near the upright *b'*, when the released latch drops down automatically to a vertical position, from which it can only be moved inwardly toward upright *b'*, as before stated, and the tug cannot be removed without throwing up the latch, as before stated. The drop-latch can be of any

- desired form below or above the slot *c*; but the pendent portion should be long enough to reach from the arm nearly to the top surface of the singletree, only space enough being left 5 between them to give the proper clearance. As the drop-latch operates solely by gravity it is certain and effective in its operation, and forms an effectual and positive stop for the tug to abut against.
- 10 The advantage of the fastener described is apparent, not only from its simplicity, but from the fact that the singletree remains intact and is not weakened by boring or cutting any portion of it away.
- 15 I claim as my invention—
1. The combination, with a whiffletree, A, a trace, B, slotted and slipped on the end thereof, a bent arm attached to said whiffle- 20 tree, and a latch pivoted to said arm and allowing the trace to be slipped on the whiffle-tree, but preventing its removal therefrom, substantially as set forth.
 2. The bent arm *a*, having its end bent down and slotted, as shown, in combination with the latch D, pivoted in said slot, the 25 whiffletree to which said arm is attached and the trace slipped on the body of said whiffletree, substantially as set forth.
- In testimony whereof I affix my signature in presence of two witnesses.
- FRANKLIN P. CIRCLE.
- Witnesses:
B. C. CONVERSE,
ALBERT K. HAHN.