

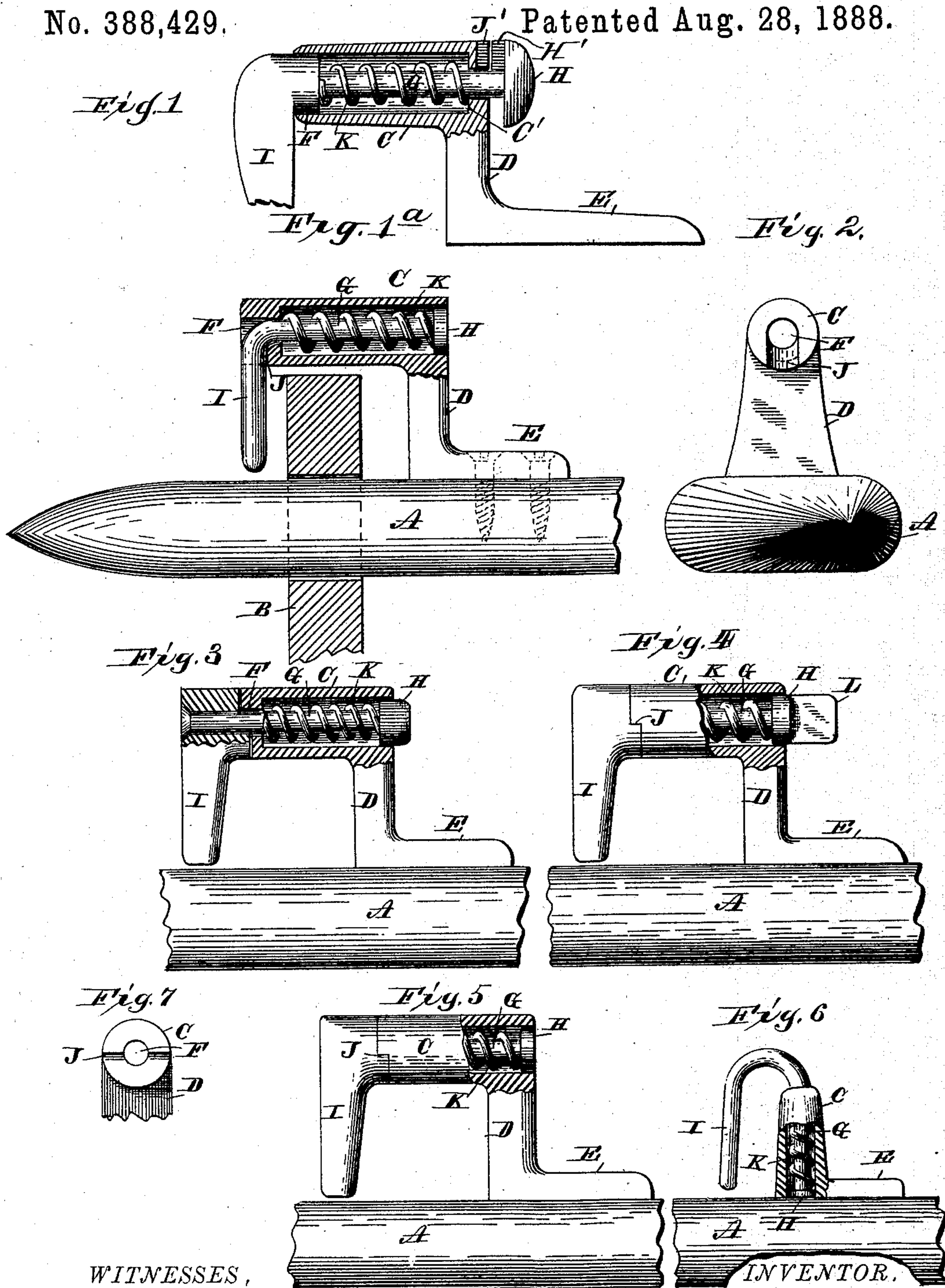
(No Model.)

C. H. McDONALD.

TRACE FASTENER.

No. 388,429.

Patented Aug. 28, 1888.



WITNESSES,

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UNITED STATES PATENT OFFICE.

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TRACE-FASTENER.

SPECIFICATION forming part of Letters Patent No. 388,429, dated August 28, 1888.

Application filed April 25, 1888. Serial No. 271,798. (No model.)

To all whom it may concern:

Be it known that I, CHARLES HENRY McDONALD, 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 Trace-Fasteners, of which the following is a specification, reference being had therein to the accompanying drawings.

10 This invention relates to certain new and useful improvements in trace-fasteners for use in connection with single or whiffle trees.

15 The invention consists, essentially, of a barrel having a portion by which it is connected to a single or other tree, and of a slidingly and rotatably mounted bolt having an arm which extends to or nearly to the singletree, there being a portion of the barrel and a portion of the bolt or arm which engage each other to
20 hold the arm in the proper position relatively to the singletree and a spring which maintains this locked engagement of parts.

25 In the accompanying drawings, forming a part of this specification, and on which like reference-letters indicate corresponding parts, Figures 1 and 1^a represent a partial side and sectional view of my improved fastener mounted on a single or other tree; Fig. 2, an end view of the same with the bolt removed; Figs.
30 3, 4, and 5, similar views to Fig. 1, showing modifications in the construction of the other parts, and Fig. 6 also a similar view to Fig. 1, showing still another modification; and Fig. 7 an end view of the barrel.

35 The letter A designates the outer end of a single or other tree, upon which is placed the trace B, which is slotted for this purpose.

40 The letter C designates a metallic, preferably a malleable iron, barrel, having a standard, D, and a foot, E, the latter being secured to the single or other tree by means of screws, bolts, or rivets, or otherwise. One end of the barrel is open, while the other end is provided with a hole, F, for the passage of the bolt G.
45 This bolt is fitted so as to be movable longitudinally and in a rotary direction in the barrel, and is provided at one end with an enlargement or head, H, and at the other with an arm, I, which extends down to or nearly to the single or other tree and acts to prevent the
50 trace from working off of the tree.

In Fig. 1 the head H is provided with a lug or projection, H', which enters the notch or depression J' in the barrel to lock the bolt against rotation and to hold the arm in the proper position relatively to the single or other tree. In this figure the bolt is shouldered near its outer end for the engagement of a spiral spring, hereinafter mentioned. In this figure, also, the barrel is formed with a shoulder, O', near the inner end, against which the said spring acts.

55 In Figs. 1, 1^a, and 6 I have shown the arm I as a continuation of the bolt G, as the preferred and cheaper form, while in Figs. 3, 4, and 5 the arm G is shown as a separate piece, preferably made of cast or malleable iron, and mounted on the end of the bolt G. In either event the arm performs the same function in the same way. In Figs. 1^a and 2 the barrel is
60 notched at J for the reception or engagement of the arm I, or the adjacent portion of the bolt G, while in Figs. 3, 4, and 5 the notch J occupies a greater portion of the face of the barrel, and the adjacent end of the arm G is correspondingly shouldered so as to engage said notch. In both cases the purpose of the engagement is to hold the arm against moving from the single or other tree. The engagement of the bolt or arm with the barrel in
75 either of the cases just described is maintained by a spiral spring, K, fitted within the barrel and around the bolt G, with one end pressing against the barrel and the other against the head H of the bolt. To remove the trace from the single or other tree, the arm G is to be swung from the tree. This is done by moving the bolt longitudinally in the barrel and the arm in an upward direction, either by pressing upon the head H or by taking hold of the arm and overcoming the tension of the spring until the arm is clear of the notch J, or the head H clear of the barrel in Fig. 1, when it may be readily turned away from the tree. In Fig. 5 the head of the bolt is the same as in Fig. 1, while in Fig. 3 the head is thickened, so that a portion of it projects beyond the barrel to afford a surface against which the finger presses in unlocking the arm. In Fig. 4 the head H is provided with a projection, L, which is rounded off and made free of sharp edges liable to catch the animal's tail. This projec-
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tion being flattened at its sides, it may be readily grasped so as to turn the arm away from the tree by simply manipulating the head H. In Fig. 6 I have placed the barrel in a vertical position, retaining the foot-piece E. In this view the bend between the bolt and the arm extends through about half a circle, instead of one-fourth of a circle, as in Fig. 1.

It will also be seen that in overcoming the tension of the spring by pressing upon the arm, in the form shown in Fig. 1, the arm can at the same time be turned backward or forward, so as to move it away from the single-tree. This form I prefer, as it is more convenient in the respect just mentioned. Another advantage of this form is that the tendency of the trace to work off will cause it to draw the bolt in such a direction as to further lock the head H to the barrel, and does not depend upon the strength of the spiral spring to prevent the dislodgement of the trace.

It will be observed that in the various forms illustrated the spring has the common function of preventing the bolt against accidental movement or displacement which might occur from the jarring of the vehicle. Incidentally the spring of course avoids all rattling and consequent noise between the bolt and the other parts of the device.

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

1. In a trace-fastener, the combination, with a barrel having a standard and a foot-piece open at one end and provided with a hole and a notch at the other end, the hole being smaller than the interior of the barrel, of a bolt slidingly and rotatably fitted within the barrel, having a head at the one end of the barrel which slides therein, and an arm at the other end adapted to engage said notch, and a spiral

spring within the barrel and around the bolt and arranged to force the bolt longitudinally.

2. In a trace-fastener, the combination, with a barrel having one end thereof notched and provided with an interior shoulder, and the other end open, of a bolt slidingly and rotatably mounted in said barrel and having an arm at one end and a shoulder near said end, and a head at the other end which engages said notch, and a spring which forces the bolt longitudinally by pressing against the shoulder of the bolt and the shoulder in the barrel.

3. In a trace-fastener, the combination, with a barrel open at one end and provided at the other end with a hole and a notch, the hole being smaller than the interior of the barrel, of a bolt slidingly and rotatably mounted in said barrel and provided at one end with an arm adapted to engage said notch and at the other end with a head having a projection, whereby the bolt may be moved longitudinally and rotated by manipulating the head and its projection, and a spiral spring within the barrel and around the bolt and arranged to force the bolt longitudinally.

4. In a trace-fastener, the combination, with a barrel having a standard and a foot-piece open at one end and provided with a hole and a notch at the other end, the hole being smaller than the interior of the barrel, of a bolt bent at one end to form an arch and provided at the other with a head which occupies the bent end of said barrel, and a spiral spring arranged within the barrel and around the bolt and adapted to urge the bolt longitudinally.

In testimony whereof I affix my signature in presence of two witnesses.

C. H. McDONALD.

Witnesses:

AL. H. KUNKLE,
CLAUDE W. FLICK.