(No Model.)

F. HEYBERGER.

SINGLETREE.

No. 415,248. Patented Nov. 19, 1889.

Fig. 1.

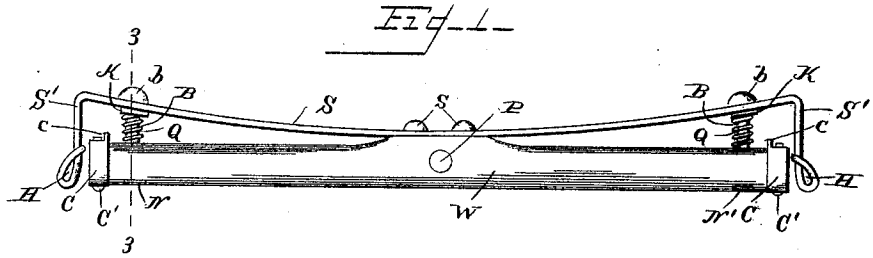


Fig. 2.

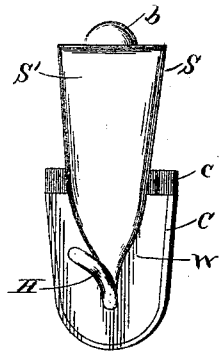
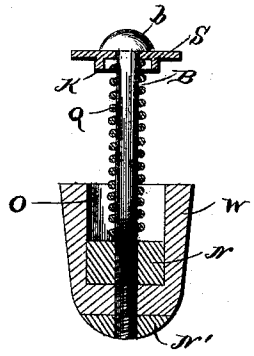


Fig. 3.



Witnesses
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UNITED STATES PATENT OFFICE.

FRANK HEYBERGER, OF CAMDEN, NEW JERSEY, ASSIGNOR OF ONE-HALF TO SARAH A. HEYBERGER, OF READING, PENNSYLVANIA.

SINGLETREE.

SPECIFICATION forming part of Letters Patent No. 415,248, dated November 19, 1889.

Application filed April 20, 1889. Serial No. 308,000. (No model.)

To all whom it may concern:

Be it known that I, FRANK HEYBERGER, a citizen of the United States, residing at Camden, in the county of Camden and State of New Jersey, have invented a new and useful Singletree, of which the following is a specification.

This invention relates to singletrees of that class carrying a spring to which the rear ends of the tugs are adapted to be connected; and the invention consists of a broad strong spring secured to the rear face of the singletree, and supplementary coiled springs between its free end and the end of the singletree, together with certain details of construction, all as will appear from the following specification.

In the accompanying drawings, wherein the same letters of reference are applied to corresponding parts in the different figures, Figure 1 is a plan view of my improved singletree complete. Fig. 2 is an end elevation thereof, and Fig. 3 is a transverse section on the line 3 3 of Fig. 1.

Referring by letter to the said drawings, W designates the body of the singletree, having a central pivot P and provided with caps C at its ends. The said caps each comprise a hollow body inclosing the ends of the singletree, and preferably secured thereon by bolts C′, as shown, and a rearwardly-projecting stud *c* at the inner edge of said body.

S designates a long and strong flat spring secured by screws or bolts *s* to the rear face of said whiffletree near its center, from which point it curves rearwardly, as shown, and its ends S′ are bent forwardly at such a point that they will clear the outer faces of the caps C, being provided at their extreme points with hooks H, of any approved construction, adapted to engage the eyes or hooks in the rear ends of the tugs.

The whiffletree W is provided through its body near each end with a square hole O, within which is seated a nut N, tightly fitting therein, but not extending completely to rear face. A second nut N′ is provided, seated in a recess in the front of the whiffletree. Bolts B are screwed into said nuts, their bodies extending through holes in the spring S, and said bolts are provided with heads *b* on their rear or free end, which prevent the displacement of the spring S. Around the holes through the spring S the latter is provided on its front face with a circular collar K, and upon the body of said bolts is a coiled spring Q, its ends seated, respectively, within the square hole in the whiffletree against the nut N and within the said collar.

The whiffletree being connected to a wagon or carriage by its pivot P, and the tugs connected to the hooks H, if now the horse should start with a sudden or jerking motion, the force he exerts would tend first to bend the large spring S forward, thereby simultaneously compressing the coiled springs Q. If the force is sufficient, the spring S will be drawn against the stops *c*, in which case the coiled spring Q will be completely compressed within the square holes at the ends of the whiffletree; but under all ordinary circumstances the strength of the large spring S will be sufficient to lessen the strain upon the horse which the starting of the vehicle occasions.

An important feature of my invention is the combination of the flat spring S with the coiled springs Q and the fact that the more the latter are compressed the greater resistance they offer, as well as the employment of the stop *c* to prevent the spring S from being drawn against the rear face of the whiffletree, resulting in the injury thereof by scratching and otherwise or in the crushing of the coiled springs Q.

Having thus described my invention, I claim as the salient points thereof—

1. The combination, with a whiffletree, of the flat spring secured near its center to the rear face of the whiffletree and having the integral arms S′ bent at right angles and projecting forward at the end of the whiffletree and clearing the latter, the springs Q, arranged near the ends of the whiffletree, and the bolt passing through the springs and adapted to be screwed into the whiffletree, substantially as described.

2. A whiffletree W, having square holes O in the rear face of its body near each end, nuts N, seated in said holes, but not extending to the rear face thereof, and bolts B, screwed into said nuts and projecting rearwardly therefrom, in combination with the

flat spring S, secured to the rear face of said whiffletree and having hooked ends H, said spring having holes through its body engaging the shanks of said bolts, and the coiled springs Q, surrounding said bolts between said flat spring S and said nuts N, and adapted to be seated within the recesses in said whiffletree in rear of said nuts when they are compressed, substantially as described.

3. The whiffletree W, the nuts N, secured therein near its ends, and the bolt B, seated in said nuts and projecting rearwardly therefrom, in combination with the flat spring S, secured near its center to the rear face of the whiffletree and having hooks H at its ends, said spring being provided with holes through its body engaging the shanks of said bolts, circular collars K on the front face of said spring around said holes, and coiled springs Q, surrounding said bolts, their ends seated, respectively, within said collars and against the rear faces of said nuts, all substantially as herein described.

4. A whiffletree W, having square holes O in the rear face of its body near each end, nuts N, seated in said holes, but not extending to the rear face thereof, supplemental nuts N′, seated in the front face of said whiffletree flush therewith, and bolts B, screwed into said nuts and projecting rearwardly therefrom, in combination with the flat spring S, secured to the rear face of said whiffletree and having hooked ends H, said spring having holes through its body engaging the shanks of said bolts, and the coiled springs Q, surrounding said bolts between said flat spring S and said nuts N, and adapted to be seated within the recesses in said whiffletree in rear of said nuts when they are compressed, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

FRANK HEYBERGER.

Witnesses:
JAMES M. CASSADY,
T. F. BOARDMAN.