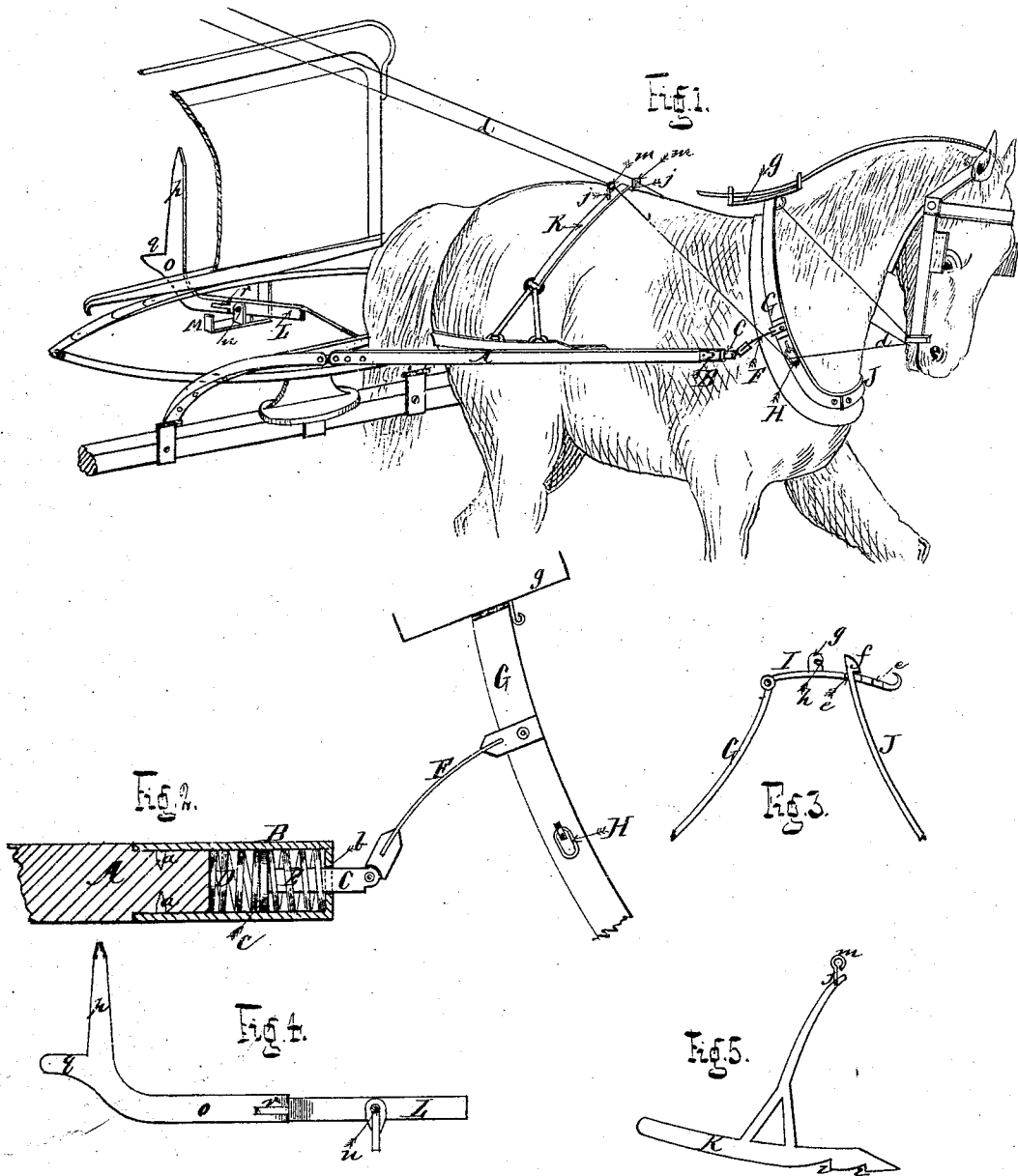


I. ELLIS.
Harness.

No. 146,892.

Patented Jan. 27, 1874.



Witnesses:
Richard Gomer
Franklin Barrill

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UNITED STATES PATENT OFFICE.

IRA ELLIS, OF TYLER, TEXAS.

IMPROVEMENT IN HARNESS.

Specification forming part of Letters Patent No. **146,892**, dated January 27, 1874; application filed April 2, 1873.

To all whom it may concern:

Be it known that I, IRA ELLIS, of Tyler, county of Smith, State of Texas, have invented certain Improvements in Harness for the Attachment of Horses to Carriages, of which the following is a specification:

My invention relates to that class of harness for horses which enables the detachment of the horse therefrom instantaneously, and may, therefore, properly be termed "safety-harness." I refer to two patents for improvements in such harness, granted to me under dates June 25, 1872, and September 28, 1872, numbered 128,377 and 131,747.

The object of my present invention is to provide for certain improvements in said harness, which prolonged trials and experience have proved to be indispensable to their total efficiency and completeness. My invention consists, first, in the fastening of the shaft to the hames. To the ends of the shafts is fastened a hollow cap, in the end of which, in a square hole in the center, is inserted a square rod. To the interior end of this rod is fastened a shoulder or head, on both sides of which are placed two independent spiral springs, which give the required elasticity, and prevent jarring when the rod is suddenly pushed back or pulled forward. To the outer end of said rod is hinged a flat curved spring, which serves to prevent any jarring to the shaft in the upward and downward movement of the horse. The front end of this spring is fastened to the hames in any convenient manner. My invention consists, secondly, in the fastening or holding together the hames at the top. It consists in pivoting to the top of one of the hames a curved connecting piece or lever, having two or more slots cut into the end of the same, which serve to receive and hold a hook placed on the upper end of the other hame. To the top, and nearly in the center of this connecting piece or lever, is placed a horizontal headstall-strap holder, having a slot in each end for the ready fastening and disengagement of the strap. My invention consists, thirdly, in the construction of a metallic breech-band with one or more catches in both ends, for the purpose of fastening the ends of the band to the shafts. On the top of the breech-band, resting on the

back of the horse, are fastened two rein-holders, with spiral rings. My invention consists, fourthly, in supporting the shaft when the horse is to be attached or detached from the carriage. It consists in pivoting a lever to a support placed underneath and in front of the carriage, by aid of which the shaft is raised by the hand or foot, and thereby supported. To the front end of this lever is attached a rod or chain, connected to the cross-piece of the shafts; to the back part is hinged the part operated by the hand or foot in order to accommodate itself to the position of the shafts.

In order to more fully describe my invention, I refer to the accompanying drawing forming a part of this specification.

Figure I is a perspective view of a part of a carriage with a horse harnessed to the same, embodying my invention. Fig. II is a detached side view of the shaft-fastener. Fig. III is a detached front view of the hames. Fig. IV is a side view of the shaft-supporter. Fig. V is a side view of the breech-band.

A is a shaft, to the end of which is fastened, by screws *a a*, the cap B. C is a square rod, sliding back and forth in the square hole *b* in the end of the cap B, and having on its interior end a head or shoulder, *c*. D and E are two spiral springs, placed on each side of the shoulder *c*. F is a curved flat spring, pivoted at one end to the rod C, and at the other end fastened to the hames G. H is a ring for the passage of the reins *d* through the same. I is a connecting piece or lever, pivoted to the upper part of the hames G, having one or more slots, *e e*, cut into the end of the same, for holding the hook *f* of the hames J. *g* is a headstall-strap holder, with slots *h h* in both ends. K is the breech-band, having on both ends one or more catches, *i i*. *j j* are rein-holders, to which are attached the spiral rings *m m*, through which the reins are conducted. L is a lever, pivoted at *n* to the support M. O is the back part of this lever, with handle *p* and foot-rest *q*, and is pivoted to L at *r*.

Having thus described my invention, I desire to claim—

1. The square rod C, with shoulder *c*, springs D and E, and spring F, in combination with

the shaft A, cap B, and hames G and J, substantially as and for the purpose hereinbefore set forth.

2. Connecting piece or lever I, with slots *e*, hook *f*, and headstall-strap holder *g*, with slots *h* *h*, in combination with the hames G and J, substantially as and for the purpose hereinbefore set forth.

3. The lever L, with handle *p* and foot-rest *q*, and support M, in combination with the shaft A, substantially as and for the purpose set forth.

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