

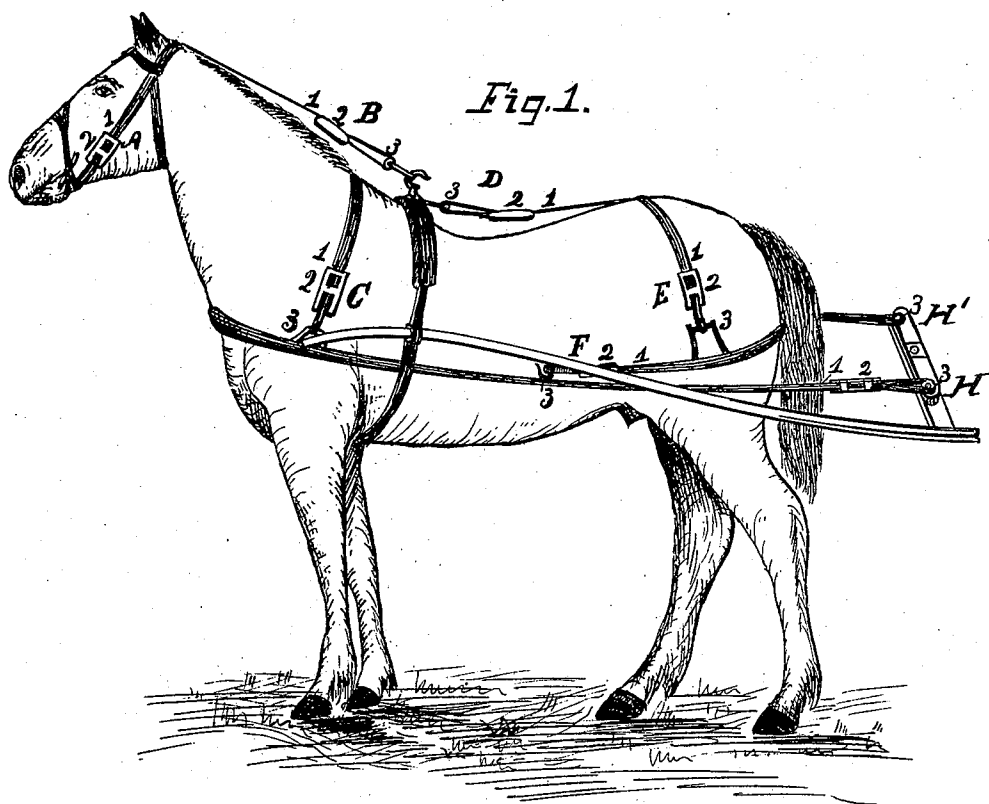
(No Model.)

2 Sheets—Sheet 1.

C. E. STOWELL.
HARNESS ATTACHMENT.

No. 574,586.

Patented Jan. 5, 1897.



WITNESSES:

Alice Robinson
Ella Robinson

INVENTOR

Charles E. Stowell

BY

Almon Robinson
ATTORNEY.

(No Model.)

2 Sheets—Sheet 2.

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Fig. 2

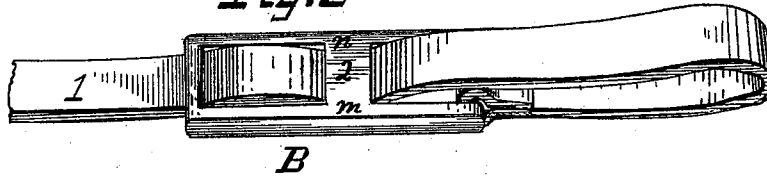


Fig. 3.

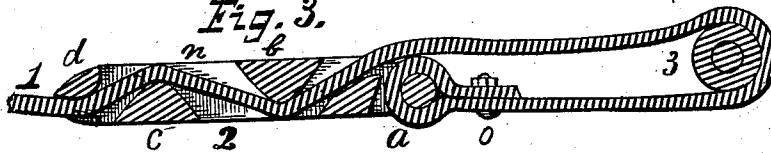


Fig. 4

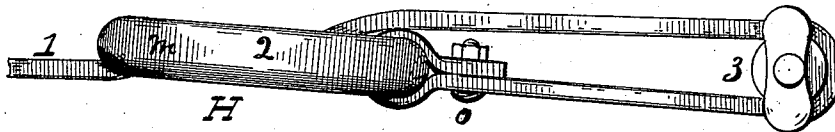
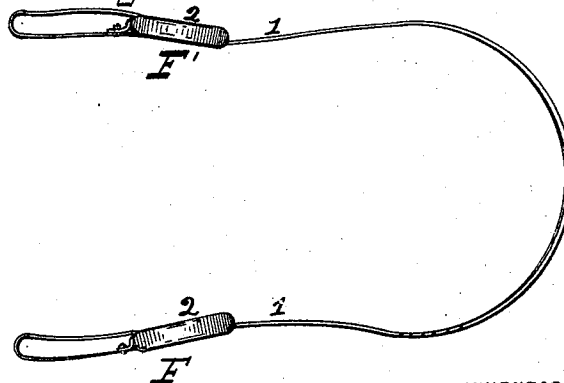


Fig. 5



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UNITED STATES PATENT OFFICE.

CHARLES E. STOWELL, OF LOCKE'S MILLS, MAINE, ASSIGNOR OF ONE-HALF
TO ROBERT E. POWERS, OF SAME PLACE.

HARNESS ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 574,586, dated January 5, 1897.

Application filed April 30, 1896. Serial No. 589,684. (No model.)

To all whom it may concern:

Be it known that I, CHARLES E. STOWELL, a citizen of the United States, residing at Locke's Mills, in the county of Oxford and State of Maine, have invented a certain new and useful Improvement in Harnesses, of which the following is a specification.

The object of my invention is to provide a harness which shall be more conveniently and accurately adjusted to different horses and carriages and at the same time shall be stronger and more durable. It is applicable, in whole or in part, to both light and heavy harness and saddlery of the kinds in common use and to devices of analogous construction used in the care and training of horses.

My invention consists, primarily, in an improved construction of those parts of the harness which require considerable adjustment as to length, whereby I am enabled to dispense with the use of buckles with tongues or their equivalents and to hold the parts in place by a balanced frictional grip which does not cut, break, or puncture the leather.

My invention further comprises various associated features which are hereinafter fully set forth.

In the accompanying drawings I have shown my invention as applied to a light driving-harness.

In the drawings, Figure 1 shows the complete harness fitted to a horse. Fig. 2 is a perspective showing part of a checkrein. Fig. 3 is a section through a strap and a sliding frictional buckle. Fig. 4 shows that end of a trace which is attached to the whiffletree. Fig. 5 shows a breeching and pair of holdback-straps.

In the figures, 1 is a strap doubled upon itself to form a loop. 2 is the sliding frictional buckle, made from a single piece of metal cast or pressed into the shape shown. 3 is a roller or polished bar for equalizing the pull on the two halves of the loop.

In Fig. 3, *a* is a cross-bar around which the strap 1 is fastened by a screw and nut *o*. *b*, *c*, and *d* are cross-bars about which the strap 1 is folded back and forth. These bars have blunt rounded edges, the limiting condition being that the cross-section of the edge shall

have so large a radius of curvature that there is no danger of cutting or permanently denting the strap, and the distance apart of the bars *b c d* should have such a ratio to the thickness of the strap that bending it about them shall not so stretch its outer surface as to make it liable to crack. By disregarding these conditions it would be possible to obtain a firm grip with fewer cross-bars. On the other hand, with very thick straps good results would be obtained by increasing both the number of the cross-bars and their distance apart.

The cheek-pieces *m n* are preferably of such a depth as to project beyond the strap on both sides.

Where the strap fits over a curved surface the piece 2 may be curved to correspond.

The equalizing-roller 3 should have its diameter so proportioned to the thickness of the strap that is bent over it that the outer surface of the strap will not be stretched to the cracking-point.

It is essential to the proper working of my improved harness that these equalizing-rollers 3 should very closely equalize the pull on the two halves of each loop. For this reason a rod ought not to be substituted for a roller, except where the strap is thin enough to permit the use of one that is both small in diameter and smoothly polished.

If the loop passes around a large pin or one having a rough surface, it will stick to it, and when the direction of pull changes a little one half of the loop will tighten and the other slacken, instead of equalizing the strain by slipping over the pin. When this happens, the frictional buckle 2 will be liable to loosen and slip. Therefore anything substituted for a roller must be equally free from side pull.

In Fig. 1 a harness is shown made adjustable in the manner above specified as follows: At A, the sidestrap of the bridle, for the purpose of quickly shifting the position of the bit in adjusting the bridle to different horses, at B for conveniently shifting the length of the checkrein, at C for adjusting the height of the breastplate, at D for adjusting the length of the back-strap, at E for adjusting the height of the breeching, at F and F' for adjusting

the length of the holdback-strap, which I make continuous with the breeching, at H and H' for changing the length of the traces, which I make continuous with the breast-plate.

In constructing and using my improved harness I first provide myself with sliding frictional buckles 2 and rollers 3, which are carefully proportioned, as above specified, to the thickness of the different straps. I then pass each strap 1 through its corresponding frictional buckle 2, weaving it back and forth over the bars *b*, *c*, and *d*. I next pass the free end around the roller 3 and fasten it to the bar *a* by the screw and nut *o*.

If the sliding grip has the construction above specified and is rightly proportioned to the strap, it can be readily slipped to the proper place for the length of loop desired, and at the same time will be held so tightly that it will not move if the strap is shaken when hanging loose. If the working strain is now put upon the strap, it will be equally divided between the two halves of the loop if the roller 3 or its equivalent has been adjusted to the thickness of the strap in the manner specified; and the friction of the sliding frictional buckle will then always be greater than the pull on the half of the loop which is attached to the bar *a*.

When it is necessary to use the harness with a different horse or different carriage, each strap can be adjusted to its new position by a single movement of the hand and will be equally as firm as before.

When it is desired to take the harness apart, the clamping-screw *o* is removed from each strap and the sliding frictional buckle 2 slipped off.

In applying my invention to other parts of harness or horse equipment than those shown it is only necessary to bear in mind that the bars *b*, *c*, and *d* have their working edges rounded in proportion to thickness of strap, as above specified, and that they are placed at such a distance apart that the strap will not slip when shaken, but will yield to a mod-

erate pull on the buckle. Under these conditions it will never slip in use. It is further desirable that the part of the strap which is attached to the harness should pass out from the under side of the frictional buckle.

Having now fully described my invention and the manner of using it, what I claim, and desire to secure by Letters Patent, is—

1. In a harness the combination of a strap doubled upon itself to form a loop, a roller about which the strap is folded, a transverse bar upon a sliding frictional buckle to which the free end of the loop is fastened, and a series of transverse bars in the sliding frictional buckle about which the strap is folded back and forth; all combined with each other substantially as and for the purpose set forth.

2. In a harness, a connection between two of its parts in which a roller attached to one of the parts is combined with a strap attached to the other part and folded about it in a loop, a sliding frictional buckle with three or more transverse bars about which the strap is folded back and forth, and a screw and nut by which the strap is fastened to another transverse bar of the sliding frictional buckle, all as set forth.

3. In a harness, a strap doubled upon itself to form a loop, in combination with means for equalizing the strain in the two halves of the loop, a series of transverse bars in a sliding frictional buckle about which the strap at one end of the loop is bent back and forth, and a transverse bar at the end of the frictional buckle which has such a position in relation to the loop, that when the free end of the loop is fastened to it, the two halves of the loop will be there drawn tightly together if under strain; all as and for the purpose set forth.

In witness whereof I have hereunto set my hand, in the presence of witnesses, this 24th day of April, 1896.

CHARLES E. STOWELL.

Witnesses:

ALMON ROBINSON,
C. V. EMERSON.