E. FISHER.

Steel Horse-Collars.

No. 216,168. Patented June 3, 1879.

Fig. 1.

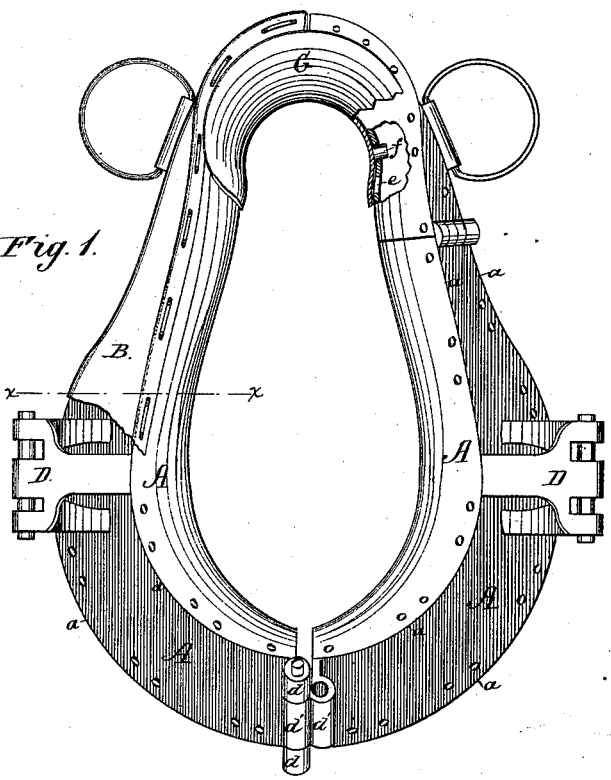


Fig. 2.

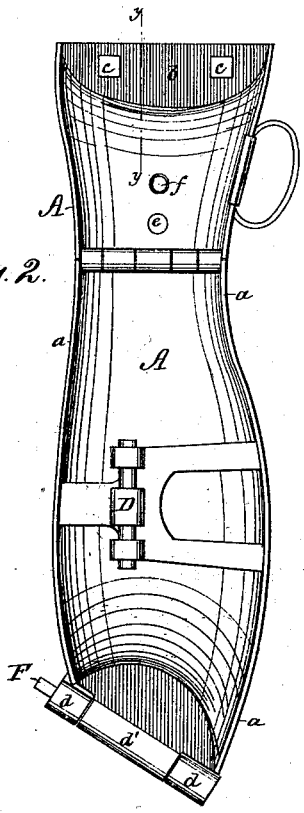


Fig. 3.

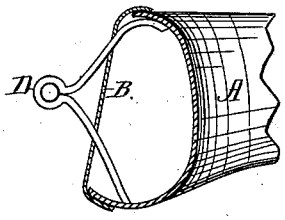
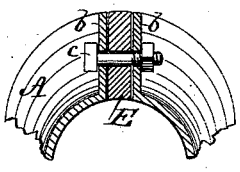


Fig. 4.



WITNESSES:

W. W. Hollingsworth

Amos W. Hart

INVENTOR:

E. Fisher,

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

EBENEZER FISHER, OF KINCARDINE, ONTARIO, CANADA.

IMPROVEMENT IN STEEL HORSE-COLLARS.

Specification forming part of Letters Patent No. **216,168**, dated June 3, 1879; application filed May 7, 1879.

To all whom it may concern:

Be it known that I, EBENEZER FISHER, of Kincardine, Province of Ontario, Dominion of Canada, have invented a new and Improved Steel Horse-Collar; and I do hereby declare that the following is a full, clear, and exact description of the same.

My invention is an improvement in the class of metallic horse-collars, such as are made of steel plate or of other metal plate, and formed of two parts, each having rolled edges.

My improvements relate, first, to the attachment of a cover or protecting piece or plate to the respective laterally-flanged parts of the collar; second, to the construction of said parts with vertical flanges at their upper ends, between which a filling-piece is interposed and secured by screw-bolts, the object being to enable the size of the collar to be enlarged or diminished at will by use of filling-pieces of different thickness; third, to the adjustable bolt-and-eye fastening for the lower ends of the flanged parts of the collar; fourth, to the attachment of the neck-pad to the collar by means of lateral studs, which enter holes in the flanged parts, as hereinafter described.

In the accompanying drawings, forming part of this specification, Figure 1 is a face or front view of the collar, a portion being broken away to show the construction. Fig. 2 is a side view of the collar. Fig. 3 is a detail section on line *x x*, Fig. 1. Fig. 4 is a similar section on line *y y*, Fig. 2.

The collar is formed of the two double-flanged steel parts A A—that is to say, each longitudinal half A of the collar is formed from a thin steel plate of suitable outline by pressing up the same in dies, thus giving it the shape required to adapt it to the contour of a horse's neck and shoulder. In some cases I may form the parts of cast-steel. Each part A has turned or rolled edges *a*, so that any cross-section of it is approximately semicircular.

The flanges *a* are provided with perforations to adapt each half A for attachment of a leather or thin metal cover, B. When made of leather it will be secured by stitches, but when made of metal it may be riveted in place. In either case I design to secure the covers tightly on collars which are to be used in the winter season with a view to confining the air in the chamber, and thus utilizing its non-conducting quality in preventing the rapid radiation of heat; but in collars designed for use in the summer or in warm localities, openings will be provided for free circulation of air between the covers and flanged plates.

Brackets D are attached to the opposite flanges *a* on each side of the collar, to provide for attachment of the hame-tugs of the harness; but, incidentally, such brackets brace the parts A at the point where the effect of the draft is greatest, and where there is consequently the greater danger of distortion or collapse.

The two parts A may be hinged together at the top or at one side, as shown in Fig. 2. In the latter case the upper ends of the two parts will be provided with vertical flanges *b*, between which one or more pieces or plates, E, of wood, leather, or any other suitable material, may be interposed when it is necessary to enlarge the collar.

Bolts *c* are employed to secure the flanges and interposed pieces E together, as shown. The lower ends of the halves A A are connected by a pin, F, and eyes *d d'*, through which it passes. One side of the collar has two eyes, *d'*, to enable the collar to be adjusted or enlarged at the bottom as well as the top, which is effected by placing the pin in the outer one of the eyes *d'*, as will be readily understood on reference to Fig. 1.

When the collar is thus enlarged, the flanged metal neck-pad G is adjusted higher; and to enable this to be done I provide the halves A with holes *e*, to receive the lateral pins or studs *f* of said neck-pad.

What I claim is—

1. The combination, in a horse-collar, with the steel parts A A, of the cover secured to the flanges thereof, as shown and described.

2. The combination of the steel parts A A, having vertical end flanges, *b b*, the interposed pieces or plates E, and clamp-bolts *c*, as shown and described.

3. The combination of the flanged parts A A, one having an eye, *d*, and the other two or more eyes, *d'*, and the fastening-pin F, as shown and described, whereby the lower portion of the collar may be adjusted in size, as specified.

4. The combination, with the parts A A, having holes *e*, of the neck-pad having lateral pins *f*, as shown and described.

E. FISHER.

Witnesses:

AMOS W. HART,

SOLON C. KEMON.