F. M. COLLIER.

Wire Rope Harness Trace.

No. 202,153. Patented April 9, 1878.

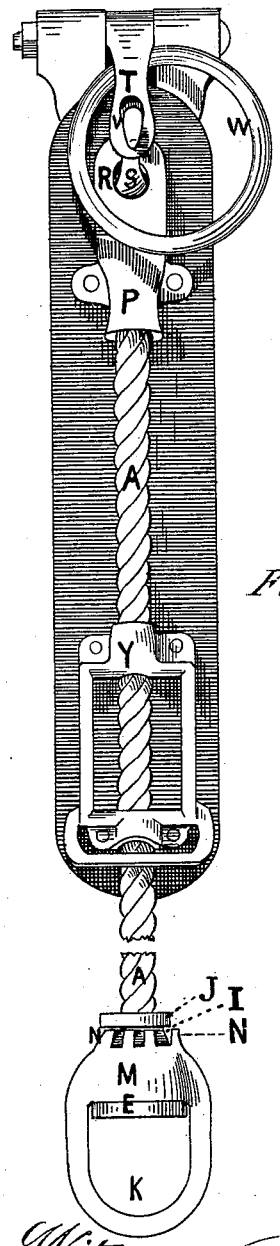

Fig. 1.

Fig. 2.

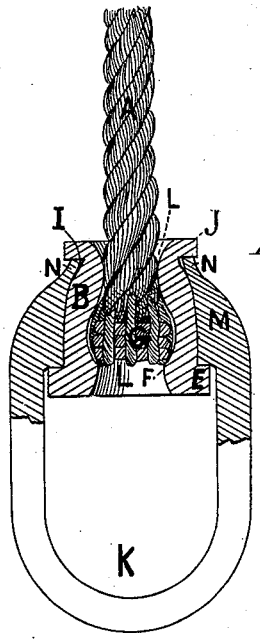

Fig. 3.

Witnesses:

H. S. Talbot

Edward Edmunds

Inventor:

Fredrick M. Collier,

By Defrees & Walker

Atty

UNITED STATES PATENT OFFICE.

FREDERICK M. COLLIER, OF BOSTON, MASSACHUSETTS, ASSIGNOR OF ONE HALF HIS RIGHT TO OLIVER L. ROBERTS, THOMAS H. ROBERTS, AND SAMUEL H. ROBERTS, OF SAME PLACE.

IMPROVEMENT IN WIRE-ROPE HARNESS-TRACES.

Specification forming part of Letters Patent No. **202,153**, dated April 9, 1878; application filed March 20, 1878.

To all whom it may concern:

Be it known that I, FREDERICK M. COLLIER, of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Wire-Rope Harness-Traces, of which the following is a specification:

The object of my invention is to provide a cheap, simple, strong and durable trace of wire rope for harnesses, which shall be easy of manufacture and adapted to all the uses of the well-known leather trace, and more particularly for horse-cars and other heavy harnesses, where strength is of the greatest importance; and it consists, primarily, in the means adapted to secure the wire rope permanently within the metal sockets provided at each end of the same, to connect with the harness and vehicle, as heretofore in devices constructed for such purposes, as hereinafter more fully described and set forth.

Figure 1 is a side elevation, showing my invention attached to the side strap. Fig. 2 is a view of a piece of wire rope, showing the method of forming the head. Fig. 3 is a view showing the same in the swivel-eye.

A represents a cable or wire rope, having at its rear end a tubular swivel-eye, consisting of the tubular piece B, which is provided with an external flange, E, upon its rear end, and an internal rib, F, forming a barrier to the withdrawal of the head G of the cable-wire rope A, which is enlarged or expanded within the enlarged cavity beyond the internal rib F, as shown, being upset or headed down after it is drawn in past the rib F. This tubular piece B is also made internally with an increasing bore toward its front or opposite end, which is provided externally with an incline groove, I, around the same, leaving a slight projecting flange, J, at its front end.

K represents an eye fitted with an internal bore, L, of a diameter sufficient to receive the tubular piece B, which is placed within the eye K, with its external flanged end J forward, or so as to be pushed into the bore L of the eye K, the tubular front portion M of which has several projections, N, arranged around it, so as to permit of being bent inward within the incline groove I, leaving their ends resting in contact with the flange J, so as to connect or hold the two parts forming the swivel together.

The opposite or front end of the cable-wire rope A is secured within the bore of the piece P in the same manner as shown and described in relation to its connection with the piece B at its opposite end, both the end of the wire rope and the internal bore of the parts being substantially prepared alike; and, the attachment being the same, it is not shown or described in detail. The piece P has at each side clips or ears, by which it may be riveted or connected to a leather strap, as heretofore, and its front end is provided with an eye, R, which receives the hook S, pivoted to the hames by a bolt, as usual. A guard-piece, T, is pivoted by the same bolt to the hames, and its rear end, having a hole, V, for the purpose, is passed over the curved point of the hook S, so as to give additional strength to the same. The pole-strap or draft-ring W being placed on the hook, as shown, the parts are completed for attachment to any harness designed for the purpose. The saddle and girth-straps being attached to the improved side loop Y, provided with cross-bars and loop for breeching-straps, as desired, the device is complete for use.

The cable-wire rope A is cut the desired length, being about two or two and a half inches longer than when finished, which decrease in length is made in forming a head upon each end of the same after it is inserted within the tubular pieces. Being drawn through sufficiently, wire is wound around the same about an inch from the end, (more or less,) and then the strands of the wire rope are turned or bent back upon themselves, so as to form a head, as shown in Fig. 2. This is an essential feature in my invention, as it forms a cheap, simple, strong, and very durable connection of the wire rope to the metal end pieces.

Having thus described my invention, what I claim is—

1. In combination with the cable-wire rope A, having the head G, the tubular piece B, having the external flange E and internal rib F, its opposite end having the external groove

I, forming the flange J, and adapted to fit within the bore L of the tubular portion M of the eye K, and connected therewith by means of the projections N, as and for the purposes set forth.

2. In combination with the cable-wire rope A, having a head, G, formed as described, the piece P, having the eye R, the hook S, guard-piece T, and ring W, substantially as and for the purposes set forth.

3. The swivel-eye as made, consisting of the tubular piece B, having the flange E, groove I, and flange J, in combination with the eye K, having the tubular portion M and projections N, all being constructed and arranged to operate substantially as and for the purposes set forth.

FREDERICK M. COLLIER.

Witnesses:
SYLVENUS WALKER,
OLIVER L. ROBERTS.