G. E. & S. D. ELY.

WHIP.

No. 193,399. Patented July 24, 1877.

Fig. 1.

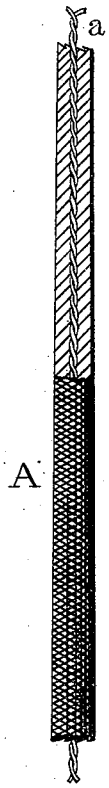


Fig. 3.

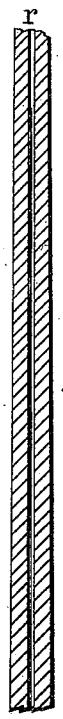


Fig. 2.

Witnesses:

Monroe McCoppe

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Inventors:

George E. Ely

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per G E Ely and S D Ely Jr for self

# UNITED STATES PATENT OFFICE.

GEORGE E. ELY AND SAMUEL D. ELY, OF ROCHESTER, N. Y., ASSIGNORS OF ONE-HALF THEIR RIGHT TO HENRY O. CANDEE, OF SAME PLACE.

## IMPROVEMENT IN WHIPS.

Specification forming part of Letters Patent No. **193,399**, dated July 24, 1877; application filed May 12, 1877.

*To all whom it may concern:*

Be it known that we, GEORGE E. ELY and SAMUEL D. ELY, of the city of Rochester, county of Monroe, and State of New York, have invented a new and useful Improvement in Driving-Whips, which improvement is fully set forth in the following specification, reference being had to the accompanying drawings; and we do hereby declare the following to be a full, clear, and exact description of the construction and operation of the same, sufficient to enable those skilled in the art to which it appertains to make use of the invention, reference being had to the figures and letters marked on the above-named drawings, in which like letters refer to like parts.

Figure 1 represents a section of a whip, in which may be seen a cable-wire passing through its center, and on which may be seen the ordinary thread plaiting as used in the manufacture of whips. Fig. 2 represents a section of two or more steel or other metal wires, twisted or wound together, forming a strong, springy cable, having great elastic power. Fig. 3 represents a section of rattan, wood, or other material, with a groove in its center for receiving the cable.

Our invention is a device for giving elasticity and durability to common rattan, wood, or leather whips. Heretofore this object has been secured by the use of whalebone, which is, in its natural state, elastic and tough, but when long in use becomes dry and hard, and is easily broken, and to which must be added rattan or other substances, in order to make it of sufficient size, which adds greatly to the cost of manufacture, and consequently too costly to be used by the masses.

This invention relates to a common driving or road whip; and consists in certain improvements added to the ordinary whip, the same being composed of rattan, whalebone, wood, or leather, all being covered with thread plaiting, &c., as the case may be.

In place of the whalebone, there is, for the purpose of giving elasticity, &c., as above named, a cable made of steel or other metal wires twisted or wound together, as seen at Fig. 2, said cable passing through the middle of the whip (see Fig. 1) in a groove made for that purpose. (See Fig. 3.)

Fig. 3 being a section of rattan or wood prepared for use, it will be seen that it is split through the middle, the length of the whip (each half) being grooved with a tool made for that purpose, in which is pressed the cable, (after it has been covered with a solution of shellac-varnish, to prevent its rusting,) the angles of said twisted cable bedding themselves into the sides of the groove, (see *a*, Fig. 1,) which groove *r*, Fig. 3, is made slightly smaller than the diameter of the cable. Said halves are then permanently glued together, and, after it has been made of required size and taper, it is covered with cloth or paper, and plaited and finished, as seen at A, Fig. 1.

It will be seen that the angles of the cable become embedded in the groove and cannot be drawn out; neither will it work out. Consequently a whip made with improvement will be both durable and elastic.

Having now described the construction and operation of our invention in common whips, what we claim and wish to secure is—

A whip having a longitudinal section or cable, consisting of two or more strands of intertwisted wire, all substantially as shown and described.

In testimony whereof we have hereunto set our hands this 24th day of April, A. D. 1877.

GEORGE E. ELY.
SAMUEL D. ELY.

Witnesses:
MONROE M. COPP,
SAMUEL H. PARKS.