(No Model.)

G. E. KELLY & H. A. CULLINS.

WHIP.

No. 555,776. Patented Mar. 3, 1896.

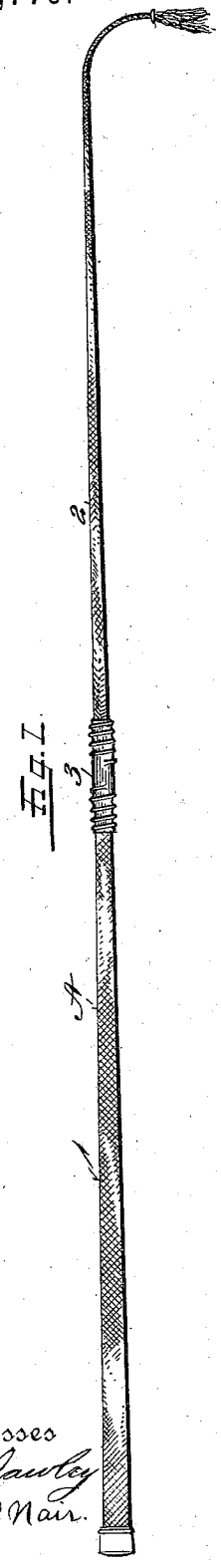

Fig. 1.

Fig. 2.

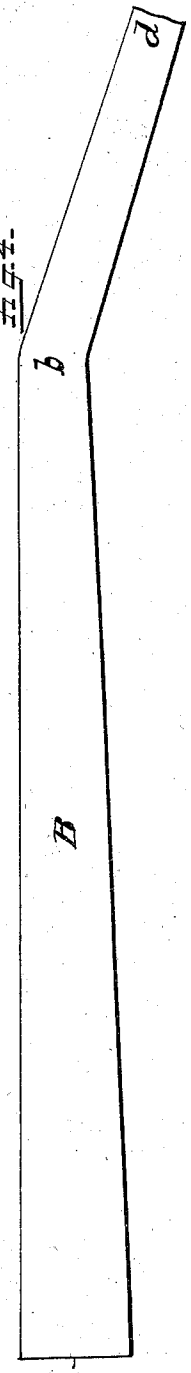

Fig. 4.

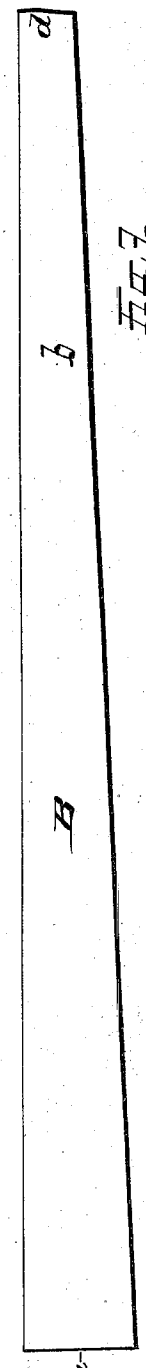

Fig. 7.

Witnesses
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UNITED STATES PATENT OFFICE.

GEORGE E. KELLY AND HERBERT A. CULLINS, OF SPRINGFIELD, OHIO.

WHIP.

SPECIFICATION forming part of Letters Patent No. 555,776, dated March 3, 1896.

Application filed September 18, 1895. Serial No. 562,835. (No model.)

To all whom it may concern:

Be it known that we, GEORGE E. KELLY and HERBERT A. CULLINS, citizens of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Whips, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in carriage and buggy whips.

Our invention lies in the core or inner structure upon which the whip is built up; and it consists in making this core of a strip of resilient material, as sheet-steel, one portion of which is developed into a tube whose wall is solid or unbroken and without any seam except at the straight meeting edges of the strip of which it is formed and the other portion of which is developed into a tube whose wall is broken by a spiral seam formed by curling or twisting that part of the strip into spiral form. We term the straight-seam portion the "inflexible" section and the other the "spiral" or "flexible" section, the former constituting the core for the handle and the latter for the general body of the whip, and thus we provide the requisite stability to make the whip "stand up" and yet give it that degree of resiliency necessary in the small outer portion.

In the accompanying drawings, on which like reference letters and numerals indicate corresponding parts, Figure 1 is an ordinary whip, the inner portion being constructed upon our improved core; Fig. 2, an enlarged side elevation of the core; Fig. 3, a diagram of the strip of steel of which it is formed, and Fig. 4 a diagram of another form of the strip of steel of which the core is formed.

The letter A designates a carriage or buggy whip of the usual appearance, being finished off with the common plaited outer covering. It is made up between this covering and the core in the usual way as is known in this art, and consists, essentially, in the employment of suitable rattan strips applied to the core and suitably covered, including the plaited finishing exterior. Our invention has nothing to do with any part, however, except the core itself upon which the whip is built up. This is made of the strip of resilient material, as sheet-steel, which strip is cut in tapering form and of the length required for the whip to be made. A portion of this strip of metal—say from *a* to *b*—is rolled or folded to constitute a tube. The meeting edges are shown at *c* in Fig. 2, and they are brought more or less closely together. As a rule we do not unite them. This part of the tube we term the "inflexible" section, because compared to the remainder of the tube it is practically inflexible, though in the abstract it is slightly yielding or resilient. It has enough of the latter quality to give the whip the right "feel" and enough of the former to make it stand up. This inflexible section constitutes the core for the handle and more or less of the general body of the whip, the latter varying according to the character of the whip and according to its whole length. In a six-foot whip (not counting the lash) we usually extend the flexible section to a length of twenty-six inches. The remainder of the core—say from the point *b* to the point *d*, about nine inches—is twisted or curled so as to form a spiral tube or a tube with a spiral seam or meeting edge. This section we term the "flexible" section, because it is highly resilient and springy, giving the proper "action." Thus in our core we have provided for the two qualities necessary for a successful and durable whip. As the strip is tapering, the core is also tapering.

Referring now to Fig. 1, it will be seen that the whip is made in two lengths 1 and 2, with a coupling 3 to unite the lengths. Our core, it will now be understood, is inside of the length 1 and forms its core. The length 3 is made in any of the usual ways. In some cases our core is used for that class of whips known as "combined whips and canes." We have shown in Fig. 4 the stock or strip of material B turned to one side instead of being straight, a form we may use.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

A whip-core consisting of a sheet of metal, one portion of which forms a tube having a longitudinal seam, and the other portion of which forms a tube having a spiral seam, the portions or sections being tapering.

In testimony whereof we affix our signatures in presence of two witnesses.

GEORGE E. KELLY.
HERBERT A. CULLINS.

Witnesses:
OLIVER H. MILLER,
W. M. MCNAIR.