

June 1, 1915.

DRAWING

682

A careful search has been made this day for the original drawing or a photolithographic copy of the same, for the purpose of reproducing the said drawing to form a part of this book, but at this time nothing can be found from which a reproduction can be made.

Finis D. Morris,

Chief of Division E.

AWK.

# UNITED STATES PATENT OFFICE.

WILLIAM SHARP, OF BURDETT, NEW YORK.

## IMPROVEMENT IN CARRIAGE-SPRINGS.

Specification forming part of Letters Patent No. 682, dated April 7, 1838.

*To all whom it may concern:*

Be it known that I, WILLIAM SHARP, of Burdett, in the county of Tompkins and State of New York, have invented a new and Improved Mode of Making Springs for Carriages; and I do hereby declare that the following is a full and exact description of the same, reference being had to the annexed drawings of the same, making part of this specification.

The nature of my invention consists in preventing the sudden collapse of the common elliptic spring by the inverse point giving elasticity to the outer elliptics, thereby rendering them less liable to bend or break.

To enable others skilled in the art to make and use my invention, I will proceed to describe its construction and operation.

I construct a spring three feet long by taking a piece of steel A, Fig. 1, five feet eight inches long, and making a hole one inch from the ends of each. I then bend them one foot two inches from the ends, each toward the center, shutting the points either close together or by leaving a circle of one inch diameter at the ends, in which case it requires more length of steel, leaving the inner points four inches from the outer part, which must be bent in the form of an ellipsis. Thus one

half of the spring is formed. I then make the other part B in the same manner, and then either bolt or rivet the inverted points C together. Thus the spring is formed, the rule to be varied according to the length of the spring required. In order to double the strength required, I propose, also, to make an inside spring D, Fig. 3, in the same manner as the other, only shorter and smaller, so as to operate on the inside of the other, being fastened by a bolt or rivet to the outer parts in the centers of the ellipses at E. I likewise propose to make the spring, as represented in Fig. 2, with stays G resting against the inverted ends of the spring to strengthen the outer parts *a* and *b*.

What I claim as my invention, and desire to secure by Letters Patent, is—

Bending inward the ends of the elliptical springs in the manner and for the purpose herein described, and also the inside stays and springs represented at Figs. 2 and 3 of the accompanying drawings, in combination as above.

WILLIAM SHARP.

Witnesses:

DAVID KIMBLE,  
ELI R. WRIGHT.