B. T. HENRY.

Carriage-Spring.

No 64,866. Patented May 21, 1867.

Fig. 1.

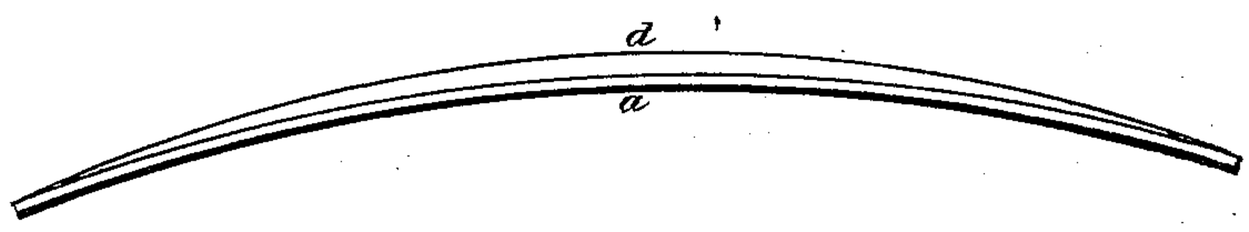

Fig. 2.

Fig. 3.

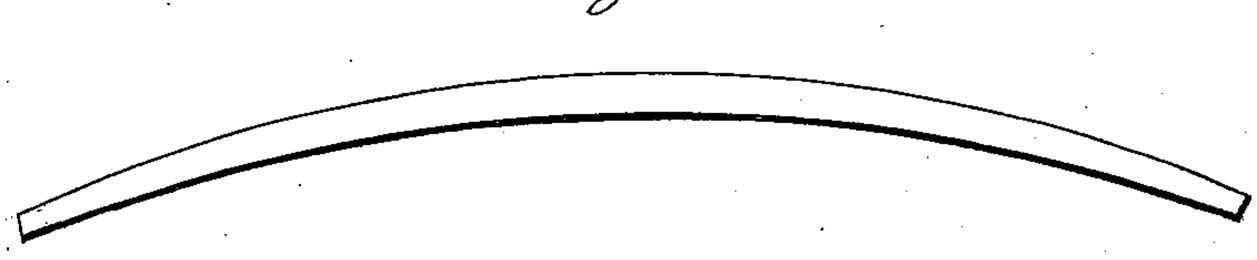

Fig. 4.

Witnesses:

A. J. Tibbits

John A. Thummy

Inventor:

B. T. Henry.
By his Attorney.

John C. Cady

United States Patent Office.

B. T. HENRY, OF NEW HAVEN, CONNECTICUT.

Letters Patent No. 64,866, *dated May* 21, 1867.

IMPROVEMENT IN CARRIAGE SPRING.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, B. T. HENRY, of New Haven, in the county of New Haven, and State of Connecticut, have invented a new Improvement in Elliptic Springs for Carriages; and I do hereby declare the following, when taken in connection with the accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view.

Figure 2, a top view.

Figure 3, a longitudinal central section; and in

Figure 4, a transverse central section.

By the expression of elliptic spring I wish to be understood as comprehending a half as well as whole elliptic.

This invention is designed to avoid the great friction and wear which exist in the common elliptic springs, such as are formed from several leaves overlying each other, as also to produce a spring of greater elasticity at less cost; and my invention consists in forming the plate of the spring of nearly an equal thickness, and raising upon the surface one or more ribs, diminishing in height toward the ends; and in order to the clear understanding of my invention, as well as to enable others to construct the same, I will proceed to a description thereof as illustrated in the accompanying drawings.

I prefer to roll the spring in a common rolling-mill, one roll of which shall be of a circumference equal at least to the length of the spring to be rolled; and in the said roll there is formed a concave groove, beginning at nothing, and gradually growing deeper to the centre, and then gradually diminishing to nothing at the place of beginning. Through rolls thus constructed the steel is passed, which forms a flat plate, *a*, and the groove in the one roll forming a rib, *d*, in the centre, as seen in fig. 4, the said rib diminishing in height from the centre toward either end, as seen in figs. 1 and 3, while the plate may be of nearly an equal thickness, and the rib sufficient to give the required strength to the single plate. If preferred, more than one rib may be employed; and, if preferred, a flat leaf may be placed beneath the spring thus formed; or, a leaf, having upon its under surface a cavity corresponding to the rib, may be placed upon the top for the purpose of strengthening the spring; yet it is better to make the rib and plate sufficiently strong, so as not to require the use of other leaves. Other, and perhaps better, means than that described in the production of this spring may be employed; yet this plan is the best known to me.

I have described the rib as having a convex surface, as seen in fig. 4; and this I prefer, as it gives to the spring a neater and more finished appearance than would be were the rib of different form; yet the form of the rib is no part of the invention.

Having thus fully described my invention, what I claim as new and useful, and desire to secure by Letters Patent, is—

An elliptic spring, having one or more ribs *d* formed upon its surface, substantially as and for the purpose set forth.

B. T. HENRY.

Witnesses:

A. J. TIBBITS,

J. H. SHUMWAY.