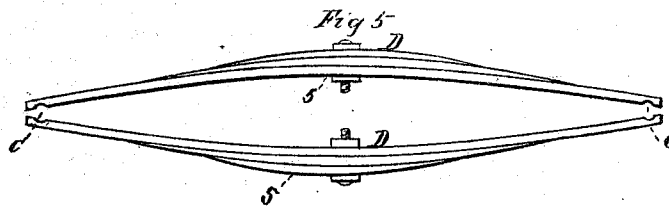
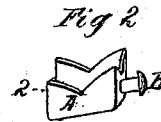
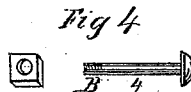
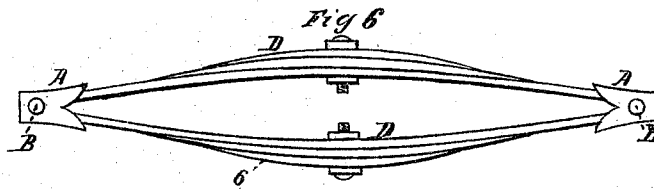


H. BOWLES.
Springs for Vehicles.

No. 142,325.

Patented September 2, 1873.



Witnesses

J. H. Krebs.
A. H. McGilroy

Inventor.

Harvey Bowles.

UNITED STATES PATENT OFFICE.

HARVEY BOWLES, OF TREMPEALEAU, WISCONSIN.

IMPROVEMENT IN SPRINGS FOR VEHICLES.

Specification forming part of Letters Patent No. **142,325**, dated September 2, 1873; application filed June 21, 1872.

To all whom it may concern:

Be it known that I, HARVEY BOWLES, of Trempealeau, county of Trempealeau, State of Wisconsin, have invented an End-Fastener for Vehicle-Springs, of which the following is a specification:

The object of this invention is to fasten together the detached halves of elliptic springs, the ends of which are grooved, by means of a cap and bolt, reference being had to the accompanying drawing, in which—

Figure 1 represents a side view of the cap or end coverings of the spring. Fig. 2 represents a side and also partially interior view of the cap with the bolt, Fig. 4, inserted. Fig. 5 represents detached halves of the spring. Fig. 6 represents the spring perfected.

I construct my spring in any of the known

forms, save at the ends, in which grooves are cut transversely to the spring for the reception of the bolt; and I construct the cap A A of any metal desirable. The caps are sufficiently large to receive the ends of the spring, as in Fig. 6. The cap being in position, the bolt B will pass through it at the opening, Fig. 3, and through the grooves *c c*, the spring being firmly held thereby. The spring is thus elastic to the ends.

I claim—

The cap A A and bolt B, combined, constructed, and applied to vehicle-springs having grooves *c*, substantially as and for the purpose set forth.

Witnesses: HARVEY BOWLES.

F. H. KREBS,

ALEX. MCGILVRAY.