W. M. BETTS.
Buffer-Spring.

No. 213,032 Patented Mar. 11, 1879.

Fig 1

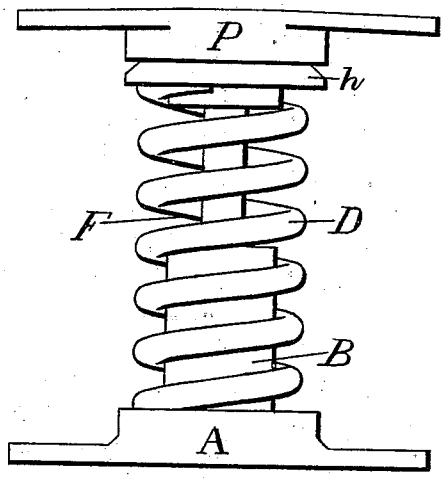
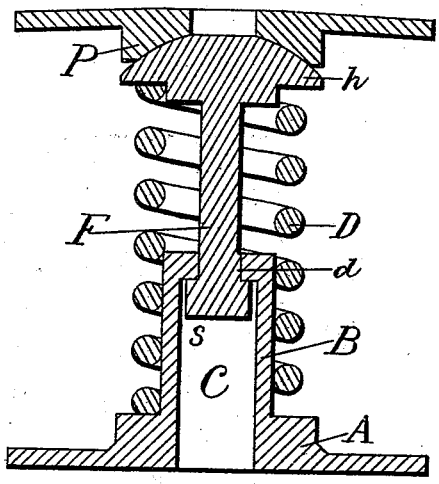


Fig 2



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UNITED STATES PATENT OFFICE.

WILLIAM M. BETTS, OF SAN FRANCISCO, CALIFORNIA.

IMPROVEMENT IN BUFFER-SPRINGS.

Specification forming part of Letters Patent No. **213,032**, dated March 11, 1879; application filed August 22, 1878.

To all whom it may concern:

Be it known that I, WILLIAM M. BETTS, of the city and county of San Francisco, in the State of California, have invented an Improved Buffer-Spring; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings.

My invention has reference to an improved arrangement for supporting a spiral spring in an upright position, so that it will serve as a buffer for cushioning the blow of two colliding bodies.

My improved buffer is more particularly intended as an adjunct to the springs of vehicles, in place of the ordinary india-rubber buffer which is used to prevent the springs from coming together.

It consists of the devices and arrangement hereinafter described.

Referring to the accompanying drawings, Figure 1 is a side view. Fig. 2 is a vertical section.

Let A represent the base of the buffer. This base has a cylindrical portion, B, which is about half the length of the spring to be used, extending upward from the middle of its upper side. A square or other irregular-shaped hole, C, is made through the base A, and is extended up into the cylindrical portion B to near its top. A round hole, *d*, passes through the top of this cylinder, so as to connect with the square or other shaped hole C.

The cylinder B is just large enough to allow one end of the spiral spring D to slip down over it and rest upon the base A, surrounding the cylinder. I then pass a bolt, F, up through the hole C and round hole *d* until its head S rests against the top of the square bore in the cylinder. This bolt or rod is long enough to pass up entirely through the spring. I then secure a cap, *h*, to the upper end of the bolt, so that the upper end of the spring will bear against the under side of the cap or head.

The base A projects far enough on two sides of the cylinder B to provide means for attaching the buffer in an upright position to the axle or other part of a vehicle underneath the spring. It can either be bolted in place or secured by clips.

The cylinder B, as above stated, extends upward only about half the length of the spring, so that the spring can be condensed until its coils lie close to each other around the cylinder.

When a pressure is brought to bear upon the head or cap *h* the spring will be compressed, and the rod F will move through the small hole in the upper part of the upright cylinder, while its head S moves like a piston in the larger hole C. When the pressure is removed the spring will expand again, and the head S will prevent the rod from coming out of the cylinder.

I shall usually make the top of the cap *h* convex, and secure a concave buffer-plate, P, to the upper part of the spring over the buffer-head, so that when the upper part of the spring is depressed sufficiently the convex head of the cap will enter the concave socket and prevent any displacement or crowding of the spring to one side.

While this buffer is especially adapted for vehicles, it can be used in many other places where a buffer is required. It is cheaply constructed and strong, and the spring is well supported, so that it is not liable to get out of order.

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

The combination of a concave socket-plate, P, attached to the upper part of a vehicle, with a spring, D, which is mounted over an upright barrel, B, and guided by a bolt, F, carrying the convex cap or buffer-head *h*, substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand and seal.

WM. M. BETTS. [L. S.]

Witnesses:

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