

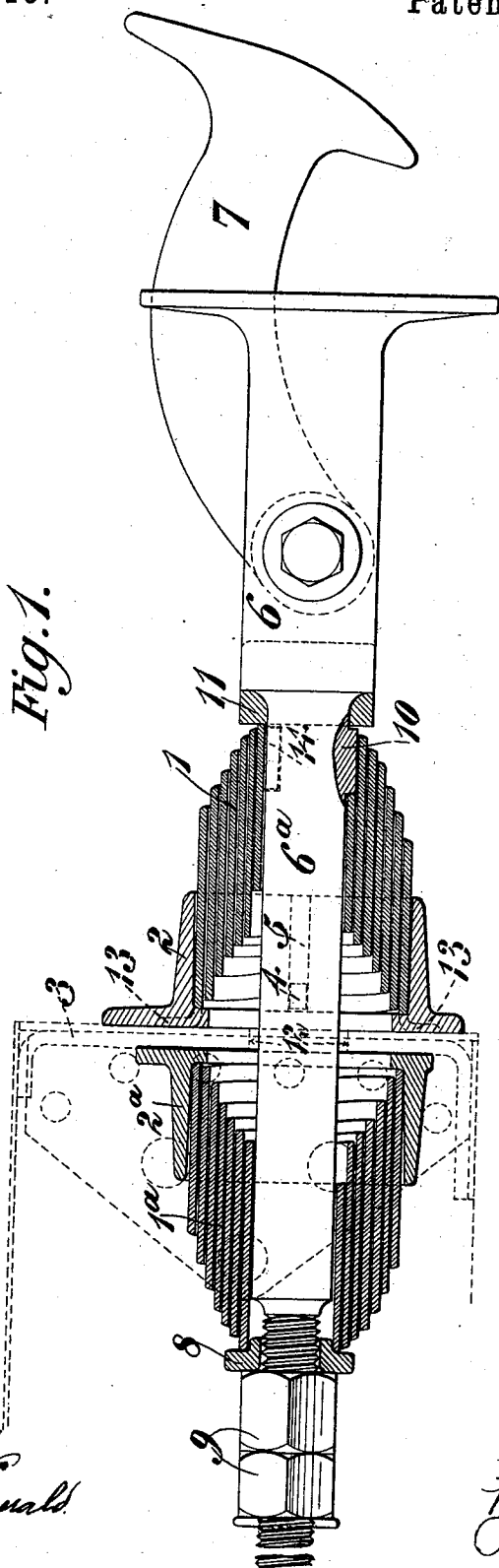
(No Model.)

4 Sheets—Sheet 1.

W. R. S. JONES.
BUFFER FOR CARS.

No. 506,116.

Patented Oct. 3, 1893.



Witnesses
Geo. C. French
John H. Fitzgerald

Inventor
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per
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(No Model.)

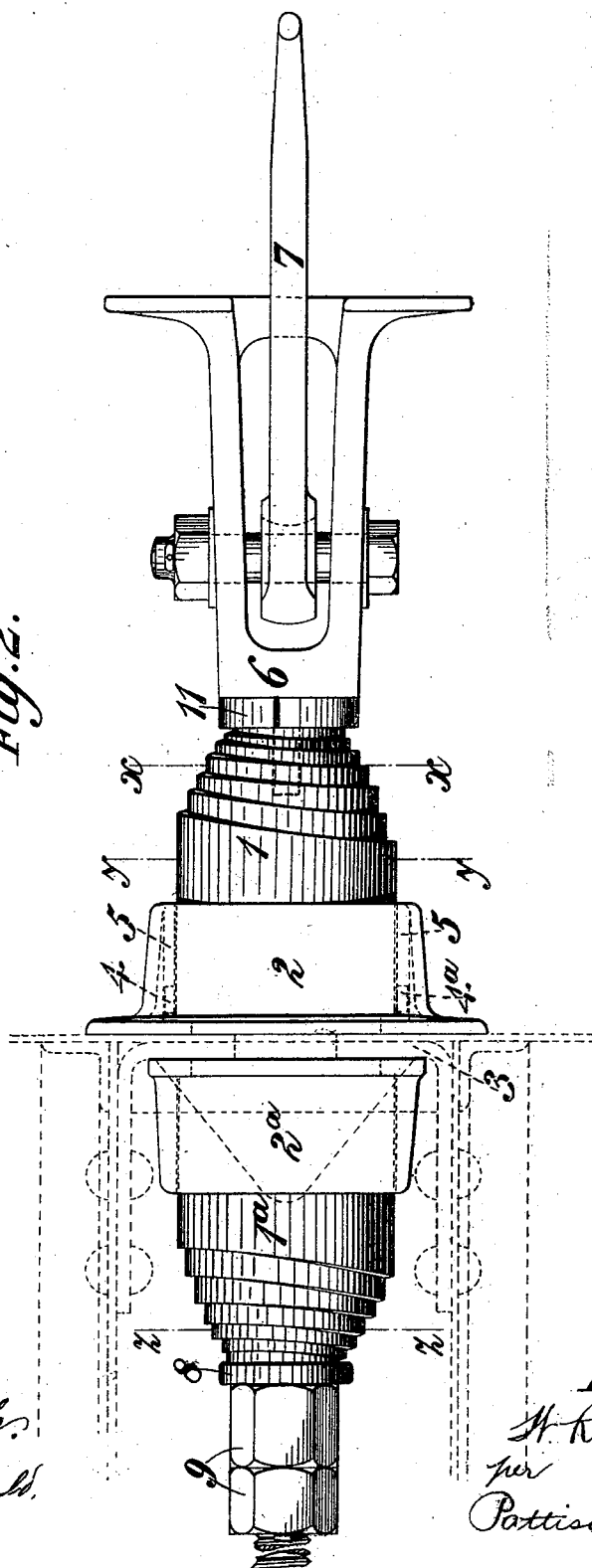
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Fig. 2.



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W. R. S. JONES.
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4 Sheets—Sheet 3.

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Fig. 3.

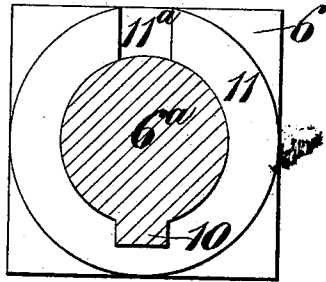
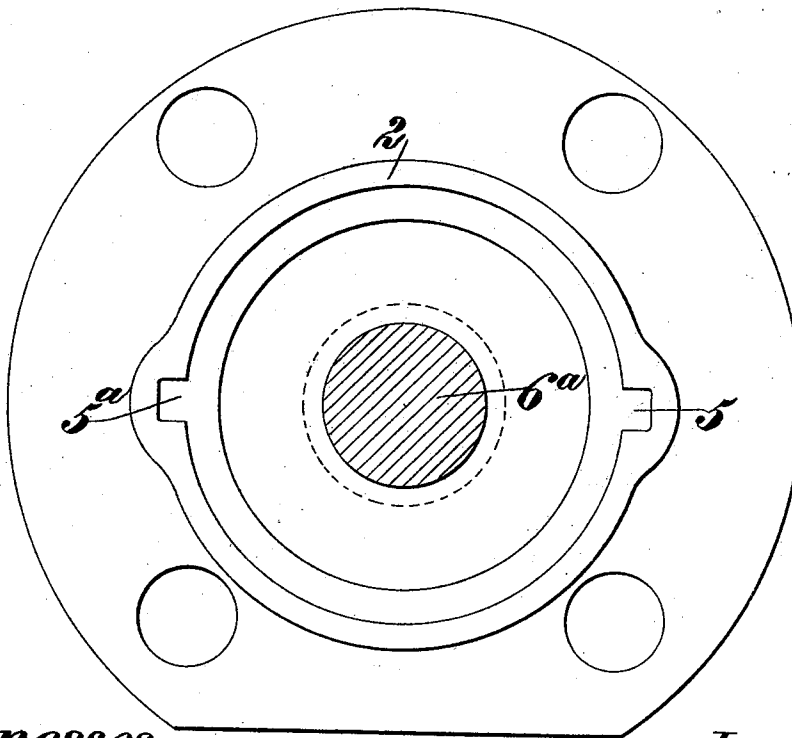


Fig. 4.



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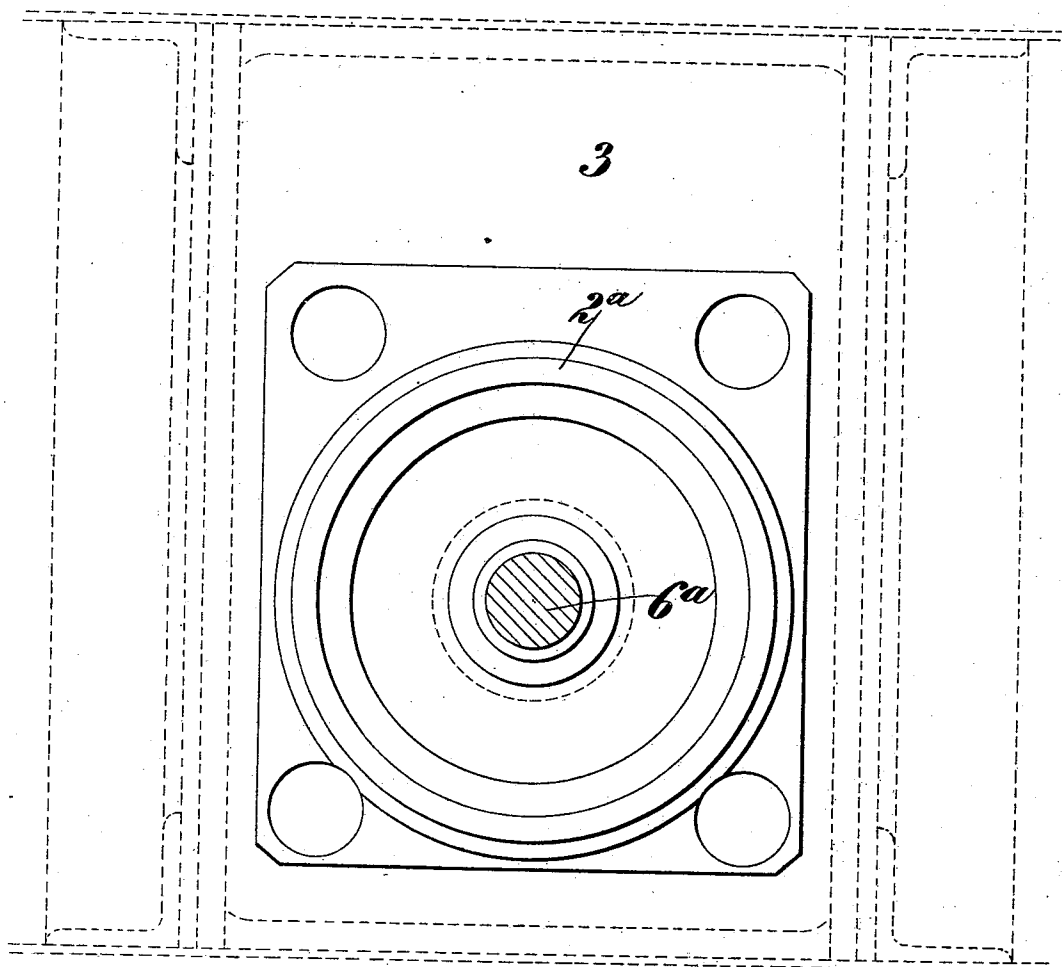
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Fig. 5.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM RICHARD SUMPTION JONES, OF AJMERE, INDIA.

BUFFER FOR CARS.

SPECIFICATION forming part of Letters Patent No. 506,116, dated October 3, 1893.

Application filed November 23, 1892. Serial No. 452,958. (No model.) Patented in England May 3, 1892, No. 8,355; in Cape of Good Hope December 3, 1892, No. 803; in South Australia December 13, 1892, No. 2,375; in Queensland December 19, 1892, No. 2,268; in New Zealand January 4, 1893, No. 5,983, and in India April 20, 1893, No. 311.

To all whom it may concern:

Be it known that I, WILLIAM RICHARD SUMPTION JONES, a subject of the Queen of Great Britain and Ireland, residing at Ajmere, Rajputana, India, have invented Improvements in Central Buffers for Railway and other Vehicles, (for which Letters Patent have been granted in the following countries: England, May 3, 1892, No. 8,355, as communication to W. Lloyd Wise; Cape of Good Hope, December 3, 1892, C. C. 277, folio No. 803; Queensland, December 19, 1892, No. 2,268; New Zealand, January 4, 1893, No. 5,983; India, April 20, 1893, No. 311 of 1892, and South Australia, December 13, 1892, No. 2,375,) of which the following is a specification.

This invention of improvements in central buffers with coupling hooks for railway and other vehicles has for its object to dispense with the usual buffer or shank guides thereby obviating friction and wear of the buffer shanks or cases occasioned by the abrasion of contact surfaces. For this purpose in central buffers according to this invention the draw of the push spring or both, or a combined draw and push spring, is or are by suitable means connected to a convenient part of the buffer or its shank and also to the headstock, or spring socket secured to the headstock, in such manner as to prevent the spring turning in its socket, or on the headstock, or the buffer shank turning in the spring.

In the accompanying drawings:—Figure 1 is a longitudinal vertical section, partly in elevation, and Fig. 2 is a plan, of a central buffer with coupling hooks constructed according to this invention. Figs. 3, 4 and 5, are cross sections, to a larger scale, taken on the lines $xxyy$ and $zzzz$ respectively, of Fig. 2, the volute draw and push springs being removed.

1 is a volute push spring mounted at one end within a spring socket 2 that is secured to the head stock 3 of the vehicle to which the buffer is applied. This spring is prevented from turning within its socket by projections or keys 4, that are fixed to or formed in one with the portion of the spring and engage in corresponding slots or recesses

5, 5^a formed in the inner side of the spring socket.

1^a is a volute draw spring mounted within a spring socket 2^a also fixed to the head stock 3.

6 is the buffer head in which a coupling hook 7 is pivoted in the ordinary manner so as to work in a vertical plane during coupling and uncoupling as well understood.

6^a is the shank of the buffer head arranged to extend through the push and draw springs within which it is retained by a bearing plate 8 that is set up by nuts 9 on the screw threaded inner end of the shank. To prevent this shank turning within the spring 1, it has formed in one therewith a projection or key 10 arranged to enter a corresponding slot or opening in the spring 1.

11 is a renewable wearing piece in the form of a metal washer interposed between the spring 1 and the buffer head 6 and formed with a slot 11^a to permit of its being moved past the projection or key 10 into the position shown.

As will be seen the hole 12 in the head stock through which the buffer shank passes is of such a size that the said shank cannot touch the edge or wall thereof and become worn at this part as has heretofore been usual.

By the construction described it will be seen that wear of the buffer shank due to friction is practically obviated and that any tendency of the spring or buffer head to turn will be effectually prevented so that the coupling hook 7 will at all times be maintained in a vertical plane and in proper position to couple and uncouple. Furthermore by mounting the buffer head in the manner described the buffer is made flexible in a transverse direction so that when the vehicle to which it is applied is passing around a curve, the spring 1 will yield slightly in a transverse direction and permit the buffer head to automatically adjust itself thereby preventing or considerably lessening friction and consequent wear between its end face and that of the corresponding buffer on an adjacent vehicle. For this reason the end faces of buffers constructed as described may be made flat as shown.

As will be evident the invention can be car-

ried out in various ways. Thus to prevent the spring turning, the projections or keys 4, 4^a instead of being carried by the spring may be carried by the inner side of the spring socket and engage with corresponding slots in the end of the spring, or the spring may be formed at the base with a flange as indicated at 13 by which it can be fixed direct to the head stock, the spring socket being then dispensed with. Also to prevent the head or shank of the buffer turning in the spring the projection or key 10 might be formed on the spring and be arranged to enter a groove or recess in the adjacent part of the head or shank of the buffer as indicated in dotted lines at 14. Or the spring and its socket and the buffer shank and the outer end of the spring, instead of being each of circular form in cross section as shown, may be of such a shape as for example oval, square or polygonal that the spring could not turn in its socket, and the buffer shank could not turn in the spring.

It will also be evident that the shank of the buffer head instead of being fixed, in a rotary sense, in the push spring 1, may be similarly fixed in the draw spring 1^a which in this case would need to be fixed so that it could not turn. The former arrangement however is considered most advantageous in practice.

What I claim is—

1. A central buffer for railway and other vehicles comprising a spring fixed at one end so that it cannot turn and unsupported at the other end and a buffer head and shank carried by and locked in a rotary sense to the outer free end of said spring substantially as herein described for the purpose specified.

2. A buffer for railway and other vehicles comprising a spring rigidly fixed at its larger end to the vehicle, a buffer head locked in a rotary sense to and carried by the smaller and free end of said spring and having the portion of its shank that extends inward from the free end of said spring free to move in any direction about the free end of said spring as a center, and a coupling hook pivoted to said buffer head substantially as herein described for the purpose specified.

3. A central buffer for railway and other vehicles comprising a volute spring having its inner and larger end fixed so that it cannot rotate, a buffer head with shank carried and guided by the outer and smaller free end of said spring, means for locking said buffer head and shank to the outer free end of said spring so as to prevent them turning relatively to said spring and a coupling hook pivoted to said buffer head substantially as described for the purpose specified.

4. In a central buffer for railway and other vehicles a volute push spring, a fixed spring socket wherein the larger end of said spring is located, means for locking said spring with-

in said socket so that it cannot turn therein, a buffer head provided with a coupling hook and having its shank extending inward through the outer and smaller free end of said spring, and means for locking said shank to the free end of said spring in a rotary sense substantially as herein described for the purpose specified.

5. In a central buffer for railway and other vehicles the combination of volute push and draw springs one of which has its larger end fixed so that it cannot rotate, a buffer head having its shank extending through each of said volute springs and provided at its inner end with means for preventing it leaving the small free end of said draw spring, means for locking said shank in a rotary sense to that spring the larger end of which is fixed and a coupling hook pivoted to said buffer head, substantially as herein described for the purpose specified.

6. In a central buffer for railway and other vehicles the combination of a volute push spring, a socket secured to the head-stock of the vehicles and wherein said spring is fixed in a rotary sense, a volute draw spring a socket secured to said headstock and wherein said draw spring is mounted, a buffer head having its shank extending through each of said volute springs, a bearing plate arranged on the inner end of said shank and bearing against the inner end of said draw spring, nuts acting against said bearing plate, a removable washer interposed between said buffer head and push spring and a key arranged to lock said shank within the front end of said push spring and prevent it turning therein, substantially as herein described for the purposes specified.

7. In a central buffer, the combination of a buffer head 6 with shank 6^a, volute springs 1, 1^a, surrounding said shank, spring sockets 2, 2^a, for said springs and means for connecting one of said springs with its socket and with the shank in a non-rotatable manner, substantially as herein described for the purpose specified.

8. In a central buffer, the combination of a buffer head 6 with shank 6^a, volute springs 1, 1^a surrounding said shank, spring sockets 2, 2^a for said springs, a key 10 and slot or recess 10^c for locking the spring 1 and shank 6 together in a rotary sense, and a pin 4 and slot 5 for locking said spring 1 and socket 2 together in a rotary sense substantially as herein described for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM RICHARD SUMPTION JONES.

Witnesses:

J. C. TAITE,

PERCY E. MATTOCKS.