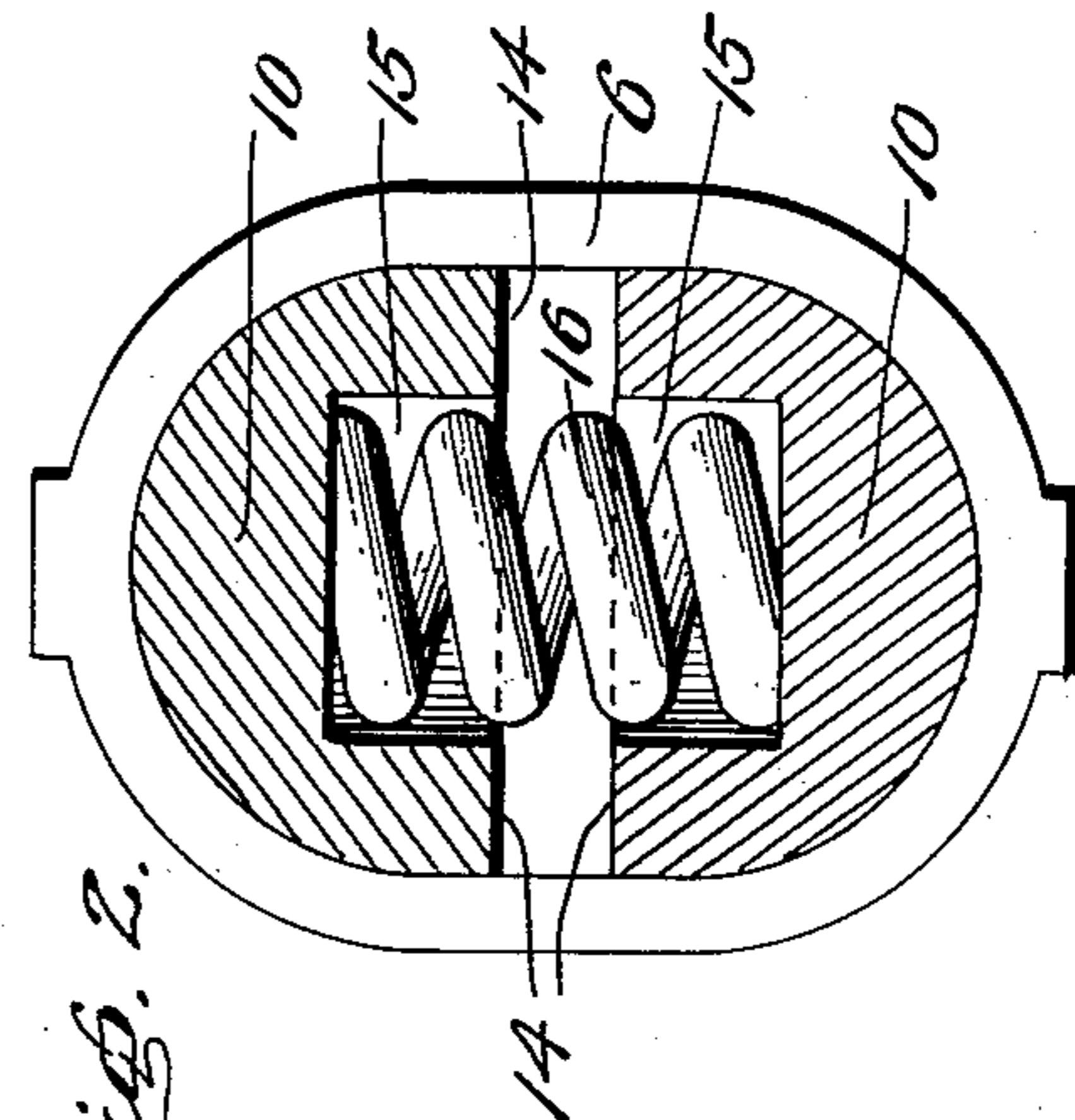
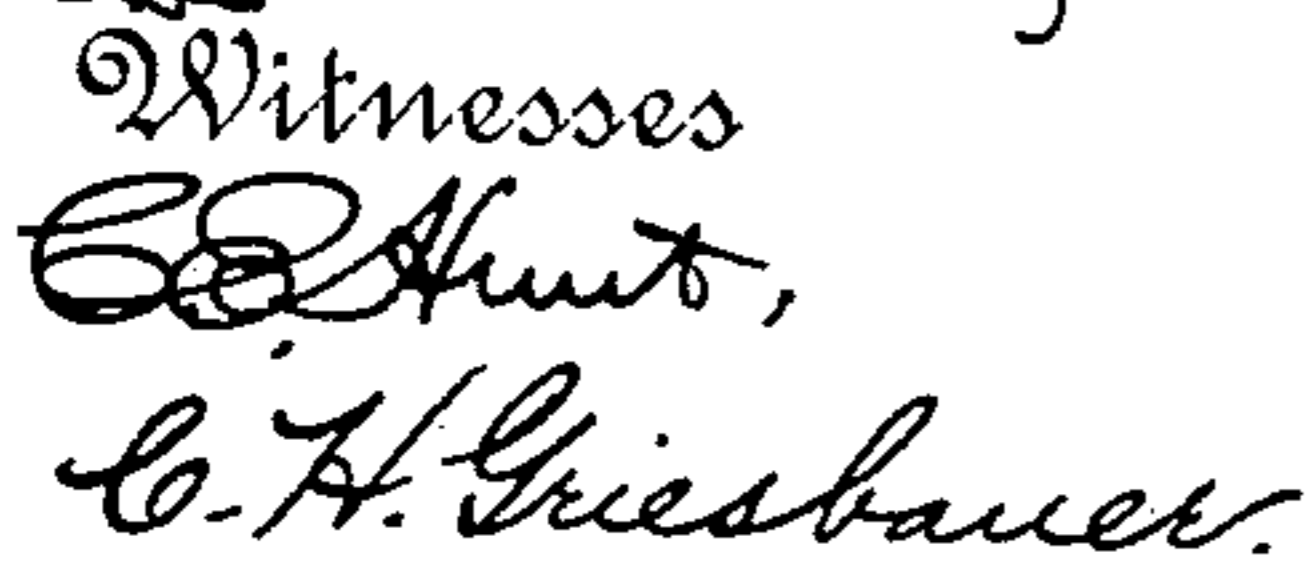


APPLICATION FILED JUNE 7, 1909.

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UNITED STATES PATENT OFFICE.

JOSIAH NICHOLS, OF LIMA, OHIO.

FRICITION-BUFFER.

945,473.

Specification of Letters Patent.

Patented Jan. 4, 1910.

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To all whom it may concern:

Be it known that I, JOSIAH NICHOLS, a citizen of the United States, residing at Lima, in the county of Allen and State of Ohio, have invented certain new and useful Improvements in Friction - Buffers; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to friction buffers for the draw bars of railway cars and is especially designed as an improvement over the friction buffer shown and described in Patent No. 865,054, granted to me Sept. 3rd, 1907.

The principal objects of the invention are, first to provide a greater friction surface so that the buffer may withstand a greater blow, second, to increase the strength of the barrel, third, to provide a buffer construction in which a gradually increasing frictional resistance is offered to the inward movement of the friction blocks, and fourth, to remove the blow from the follower plates and cause it to be borne by the friction blocks and barrel so that the former will not become bent.

With the foregoing and other objects in view, the invention consists of certain novel features of construction, combination and arrangement of parts, as will be more fully described and particularly pointed out in the appended claims.

In the accompanying drawings, Figure 1 is a central longitudinal section, partly in elevation of a friction buffer embodying my improvements; Figs. 2 and 3 are transverse sectional views taken on lines 2—2 and 3—3, respectively, of Fig. 1; Fig. 4 is a horizontal section taken on line 4—4 of Fig. 1.

Referring to the drawings for a more particular description, the numeral 1 denotes a pair of longitudinal sills by which the buffer is attached to the car body, said sills being provided, adjacent their ends, with spaced angle stops 2 for restricting the outward movement of the follower plates 3, the latter being carried by the strap or yoke 4 secured to the end of the draw bar 5.

Disposed between the follower plates 3 is a one-piece barrel 6 comprising a cylindrical body 7 and outwardly flared end portions 8. Said barrel is also provided with a plurality of longitudinal reinforcing ribs

9 which add increased strength and rigidity to the barrel. A pair of sliding friction blocks 10 are arranged in the flared portion at each end of the barrel and have their outer surfaces rounded to conform to the curvature of the flared end portions of the barrel and tapered inwardly, as shown.

The inner ends of the friction blocks are provided with the extensions 12 which are adapted to fit in the interior of the body of the barrel. These extensions 12 are formed by suitably recessing the inner ends of the friction blocks, leaving shoulders 13 at the inner ends of the extensions which are adapted to engage the end walls of the body of the barrel and limit the inward sliding movement of said friction blocks. These blocks are provided with flat inner surfaces 14 which are formed with sockets 15 to receive the opposite ends of the pressure springs 16 which force the rounded surface 11 of the friction blocks against the inner surfaces of the flared end portions of the barrel. The outer ends of the friction blocks, as 17, are also flat and fit against the inner faces of the follower plates 3. A pair of circular bearing plates 18 is arranged in opposite ends of the body of the barrel and are held against the inner ends of the friction blocks by a cushioning device, consisting of an outer coiled spring 19 which is arranged in the interior of the body of the barrel and a second similar spring 20 which is arranged concentrically within said outer spring.

By arranging the coiled springs 16 as shown, as the friction blocks move inwardly, their frictional engagement with the barrel will be increased. It is to be also observed that the flat outer ends of the friction blocks offer an additional frictional resistance to the onward movement thereof. Attention is also called to the fact that the barrel in my present construction is of much greater strength and rigidity than that shown in my patented construction and that the blow is borne by the shoulders 13 of the friction blocks instead of by the follower plates, and consequently there is no liability of the latter becoming bent when the blow is delivered. It has been found that a friction block constructed in accordance with my invention is capable of absorbing a much greater blow than any other form which has come under my observation.

From the foregoing description, taken in

connection with the accompanying drawings, the construction and operation of the invention will be readily understood without requiring a more extended explanation.

5 Various changes in the form, proportion and the minor details of construction may be resorted to without departing from the principle or sacrificing any of the advantages of the invention, as defined in the ap-
10 pended claims.

Having thus described my invention, what I claim is:

1. A device of the class described comprising a tubular barrel having outwardly
15 flared end portions, a pair of friction blocks having rounded and inwardly beveled outer surfaces to conform with the inner surfaces of the flared end portions of the barrel, a
20 coiled spring to hold each set of blocks in frictional engagement with the inner surfaces of the barrel, and a cushioning device in the barrel between the inner ends of the friction blocks.

2. A device of the class described comprising a tubular barrel having outwardly
25 flared end portions, a pair of friction blocks having rounded and inwardly beveled outer surfaces to conform with the inner surfaces

of the flared end portions of the barrel, a coiled spring to hold each set of blocks in
30 frictional engagement with the inner surfaces of the barrel, and a cushioning device in the barrel between the inner ends of the friction blocks, with means for limiting the
35 inward and outward movement of the friction blocks.

3. A device of the class described comprising a tubular barrel having outwardly
40 flared end portions, a pair of friction blocks having rounded and inwardly beveled outer surfaces to conform with the inner surfaces of the flared end portions of the barrel, a coiled spring to hold each set of blocks in
45 frictional engagement with the inner surfaces of the barrel, a cushioning device in the barrel between the inner ends of the friction blocks, and shoulders formed at the inner ends of the blocks to limit their inward sliding movement.

.In testimony whereof I have hereunto set
50 my hand in presence of two subscribing witnesses.

JOSIAH NICHOLS.

Witnesses:

D. M. AXLINE,
C. L. FESS.