

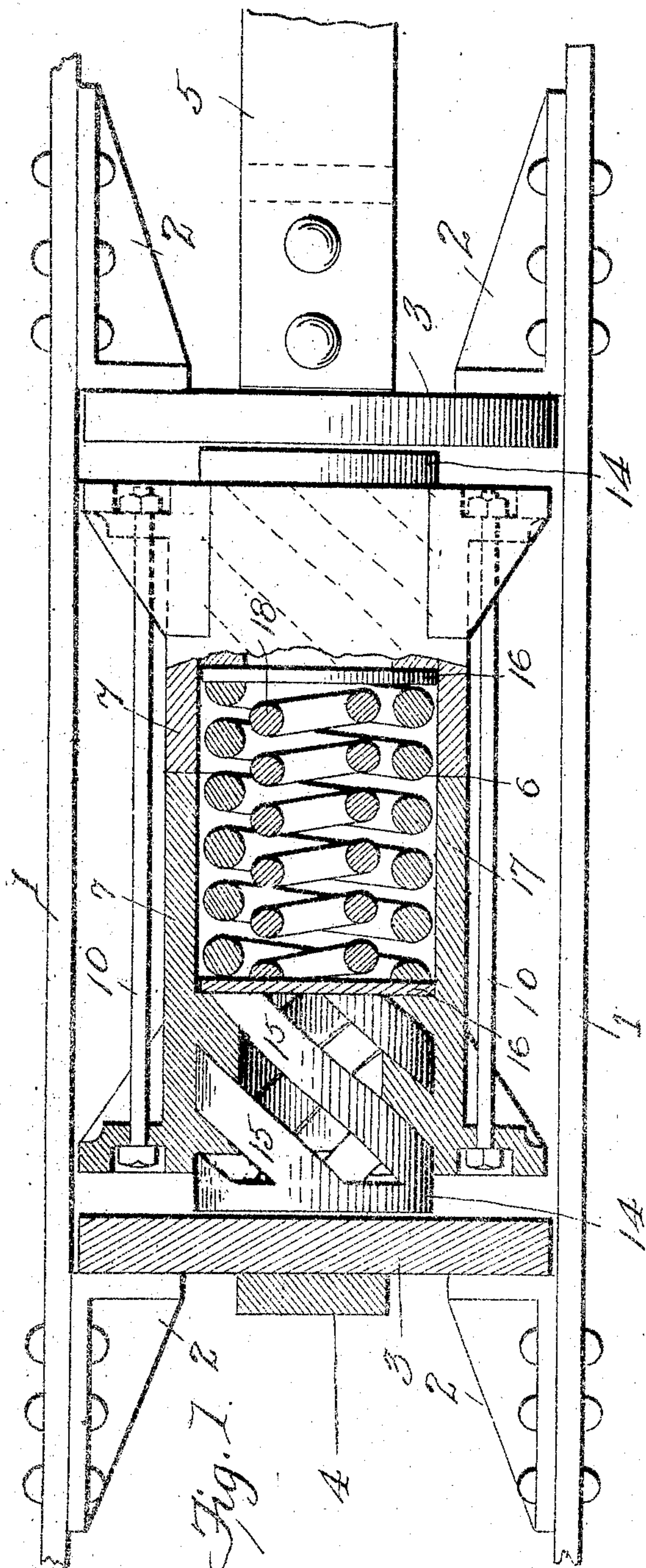
No. 865,054.

PATENTED SEPT. 3, 1907.

**J. NICHOLS.**

FRICION BUFFER.

APPLICATION FILED OCT. 11, 1966.

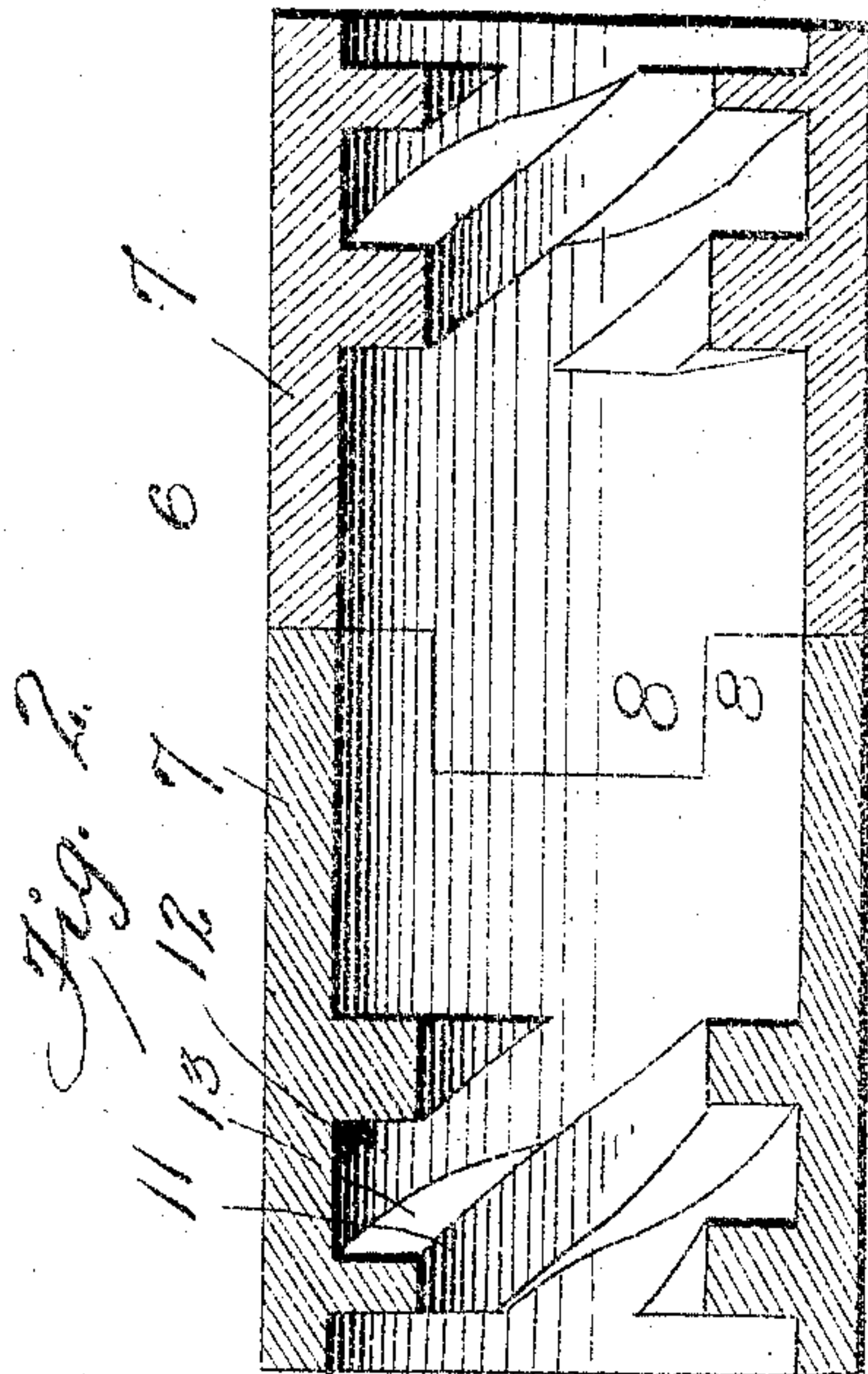
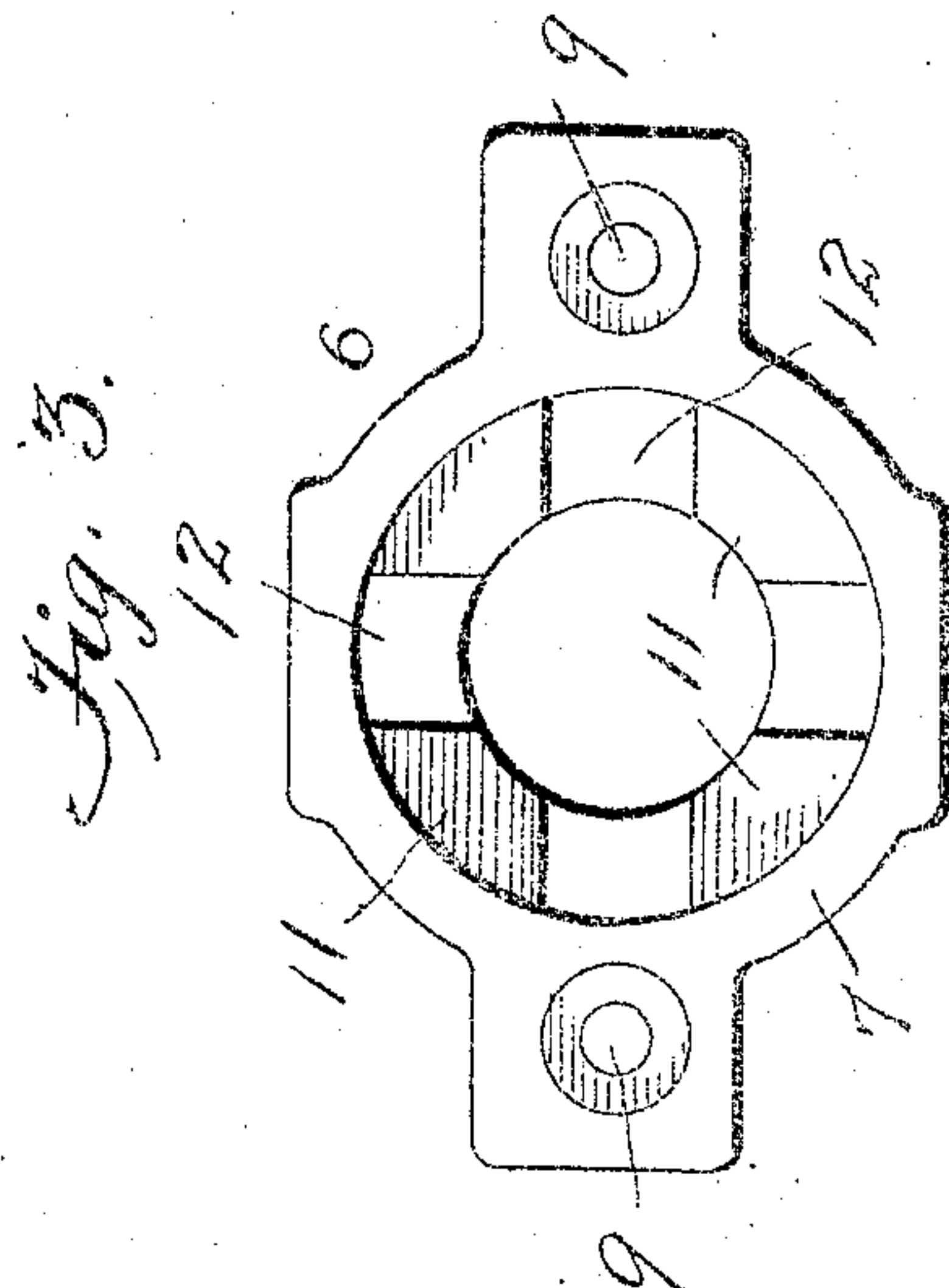


Witnesses

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# UNITED STATES PATENT OFFICE.

JOSIAH NICHOLS, OF LIMA, OHIO.

## FRICITION-BUFFER.

No. 865,054.

Specification of Letters Patent.

Patented Sept. 3, 1907.

Application filed October 11, 1906. Serial No. 338,408

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, of which the following is a specification.

This invention relates to new and useful improvements in draw bars for railroad cars and it particularly pertains to improvements in the friction buffers thereof. The invention aims primarily to provide novel and efficient means for increasing the frictional resistance of the movable elements embodied in the buffer and at the same time to provide a device which shall effectually cushion all shocks.

The invention aims as a general object to provide a device of the above type which shall be simple in construction, inexpensive to manufacture, and practical and efficient in use.

The detailed construction will appear in the course of the following description in which reference is had to the accompanying drawings forming a part of this specification, like numerals designating like parts throughout the several views, wherein,

Figure 1 is a central longitudinal section partly in elevation of a friction buffer constructed in accordance with my invention. Fig. 2 is a detailed longitudinal section of a stationary barrel in which the movable parts work, and Fig. 3 is an end elevation of said barrel.

Referring specifically to the accompanying drawings the numeral 1 designates the cheek plates provided upon the draft timbers and from which the constituent elements of the invention are suspended.

The cheek plates 1 are provided adjacent their ends with angle stops 2 for restricting the movement of follower plates 3, the latter being carried by the strap or yoke secured to the end of the draw bar 5.

Disposed between the plates 3 is a barrel 6 illustrated in detail in Fig. 2 and comprising sections 7 engaged with one another against rotation by projecting flanges 8 arranged in spaced relation upon the adjacent inner ends of said sections, the flanges of one section interfitting in the spaces between the flanges of the opposing section.

The sections 7 are provided at their outer ends with oppositely disposed, laterally extending apertured lugs 9 which register with corresponding lugs in the opposing section and through which fastening bolts 10 are projected in their registering relation for the purpose of maintaining said sections 7 engaged as described.

The barrel 6 as an entirety is of cylindrical shape and is provided at the outer ends of its bore, in each of the sections 7, with spiral ribs 11 extending in spaced parallel relation from a point slightly short of the ends

of each of said sections to a selected point within the interior thereof. The ribs 11 are co-extensive and have recesses or channels 12 therebetween, the sides of which are defined by the surfaces of said ribs, the latter being slightly curved as at 13 as is shown in Fig. 2.

Movable friction buffers 14 are disposed within each end of the barrel 6. The buffers 14 are provided with spirally extending projections 15, severally co-extensive, corresponding in conformation, number, and relation to the ribs 11. The buffer 14 *per se* comprises a circular plate and is designed to have movement with relation to the barrel 6. To this end the projections 15 work in the channel 12 and for other purposes of the invention are of greater length than the ribs 11. It will therefore be readily apparent that any movement of the buffer 14 with relation to the barrel 6 must be partially rotative as well as reciprocative, the outward movement of said buffers being restricted by the plates 3, the movement of which latter is in turn restricted by the stops 2, and the inward movement of the buffers 14 being restricted by the outer edges of the ribs 11 engaging the inner surface of said buffers between the projections 15.

It has been stated that the projections 15 are of greater length than the ribs 11. This arrangement is employed in order that said projections may constantly engage or bear against the cushioning device, employed for absorbing shocks and vibrations. The latter may be of any conventional form and an advantageous embodiment is illustrated in Fig. 2 in which bearing plates 16 are disposed adjacent to the free ends of the projections 15. The bearing plates 16 are of disk shape and of course have yieldable, resiliently controlled movement within the barrel 6. To this end means are interposed between the plates 16 for cushioning the inward movement of the buffers 14, such means comprising a main expansive coil spring 17 and an auxiliary expansive coil spring 18, concentrically disposed within the spring 17 and exerting its force in an opposite direction to that of the spring 17 as will be readily understood.

It will be readily understood from the foregoing description that the provision of the projections 15 and their arrangement and relation with respect to the ribs 11 provides an increased frictional bearing surface for the buffer in its movement without the necessity of an enlargement of parts. The cushioning device serves to absorb the initial shock and the frictional buffer serves to eliminate to a minimum degree vibrations consequent upon the direct and reactionary movements of the buffers 14.

While the elements herein shown and described are well adapted to serve the functions set forth, it is obvious that various minor changes may be made in the



proportions, shape and arrangement of the several parts without departing from the spirit and scope of the invention as defined in the appended claims.

Having fully described my invention I claim:

- 5 1. A device of the type set forth comprising a working barrel embodying interlocked stationary sections, each of said sections being provided adjacent its outer ends with spaced spiral axially extending projections having a parallel relation, buffers arranged at the ends of said  
10 barrel and having restricted movement axially thereof, said buffers each having spaced spiral axial projections movably interfitted in the open spaces between said first named projections, followers within said barrel abutting the ends of said last named projections and cushioning springs  
15 interposed between said followers and bearing thereagainst.

2. A device of the type set forth comprising a working barrel provided adjacent its ends with spaced spiral ribs, a buffer having restricted movement axially of said barrel and including a solid head and axially extending projections having free spaces therebetween, said projections  
20 being of greater length than said ribs and interfitted the spaces therebetween, followers bearing against the free ends of said projections and cushioning springs bearing against said followers, as and for the purposes set forth. 25

In testimony whereof I affix my signature in presence of two witnesses.

JOSIAH NICHOLS.

Witnesses:

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