

959,232

V. E. LANE.
MINE CAR BUFFER.
APPLICATION FILED OCT. 30, 1908.

Patented May 24, 1910.

2 SHEETS—SHEET 1.

Fig. 1

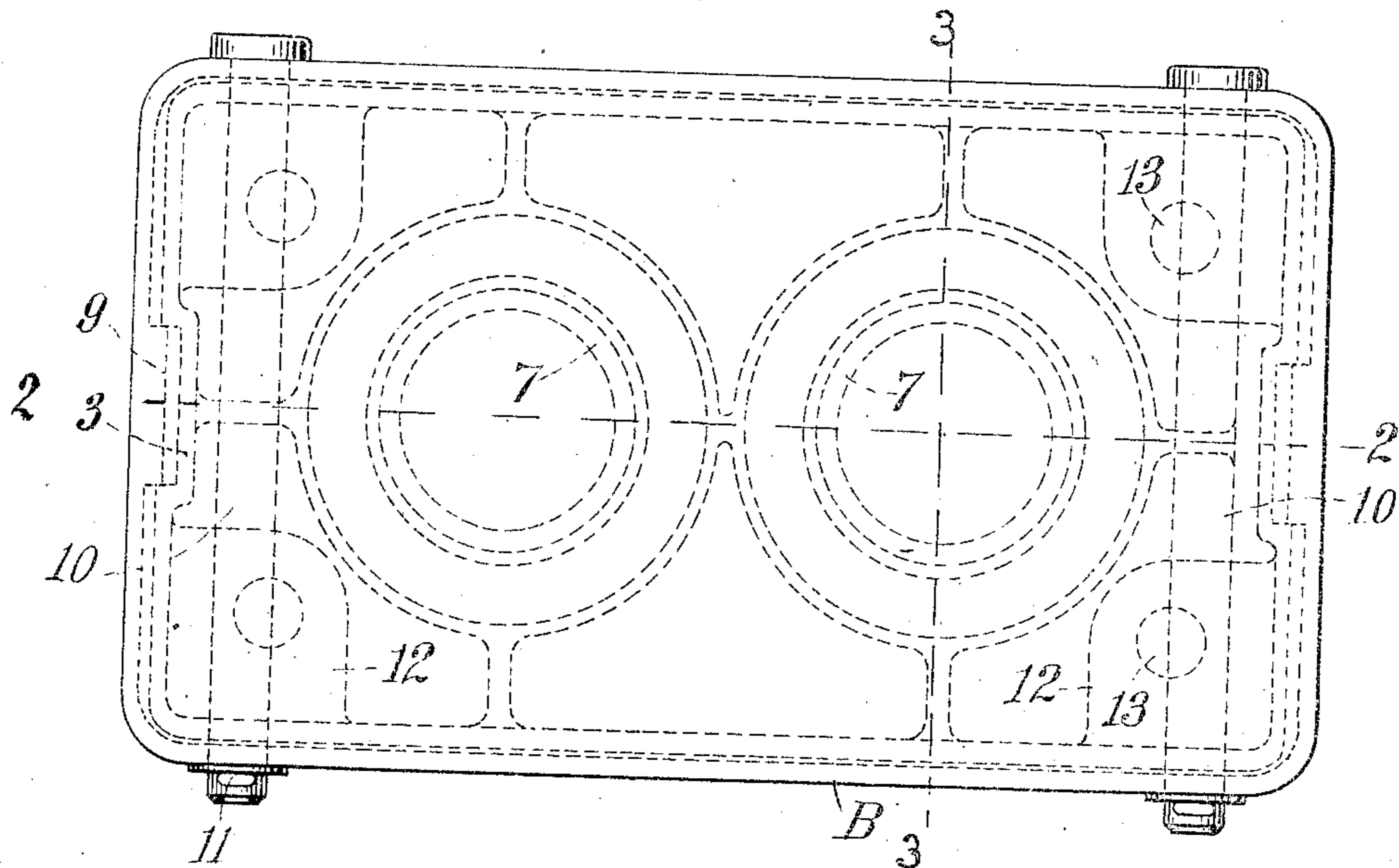
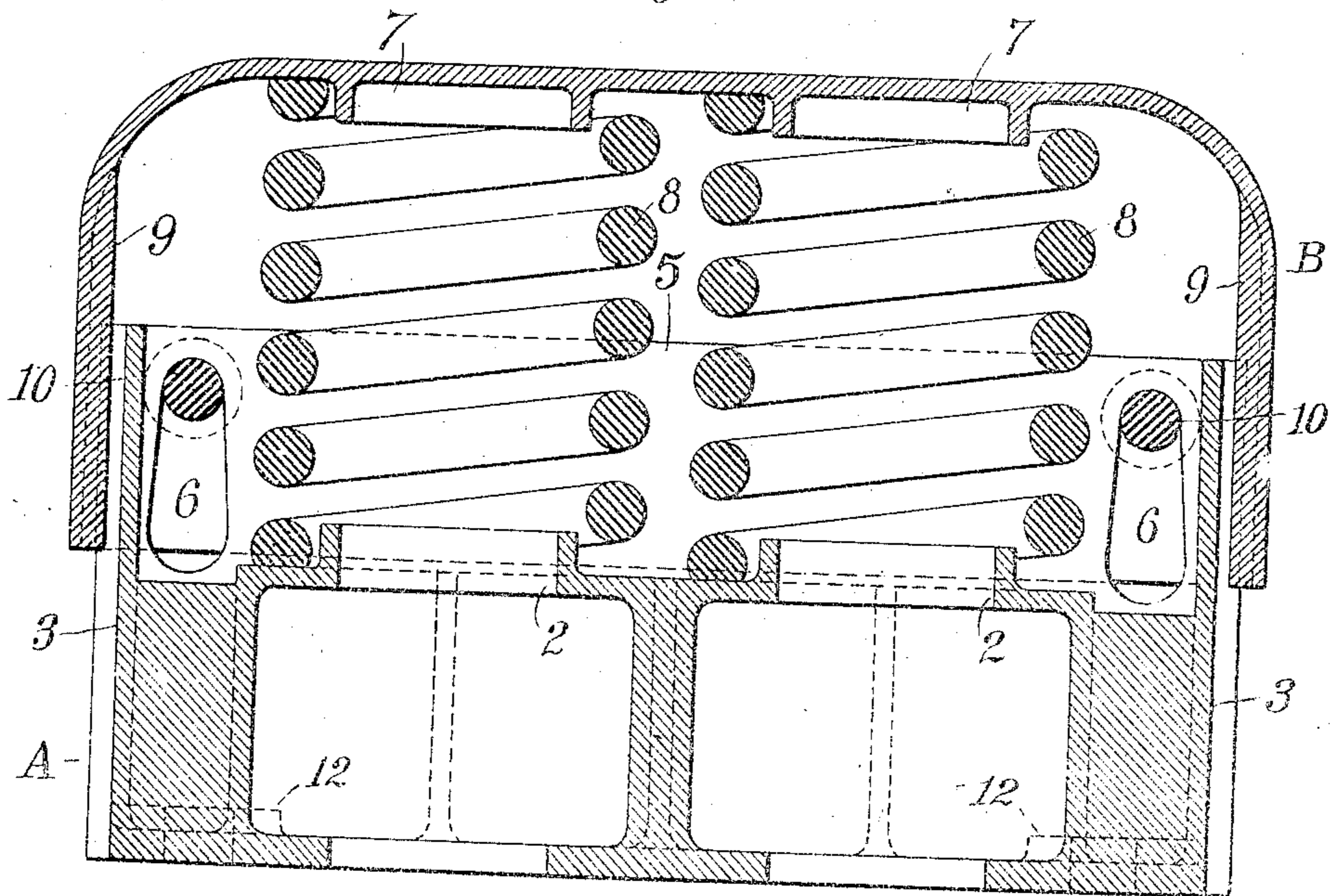


Fig. 2



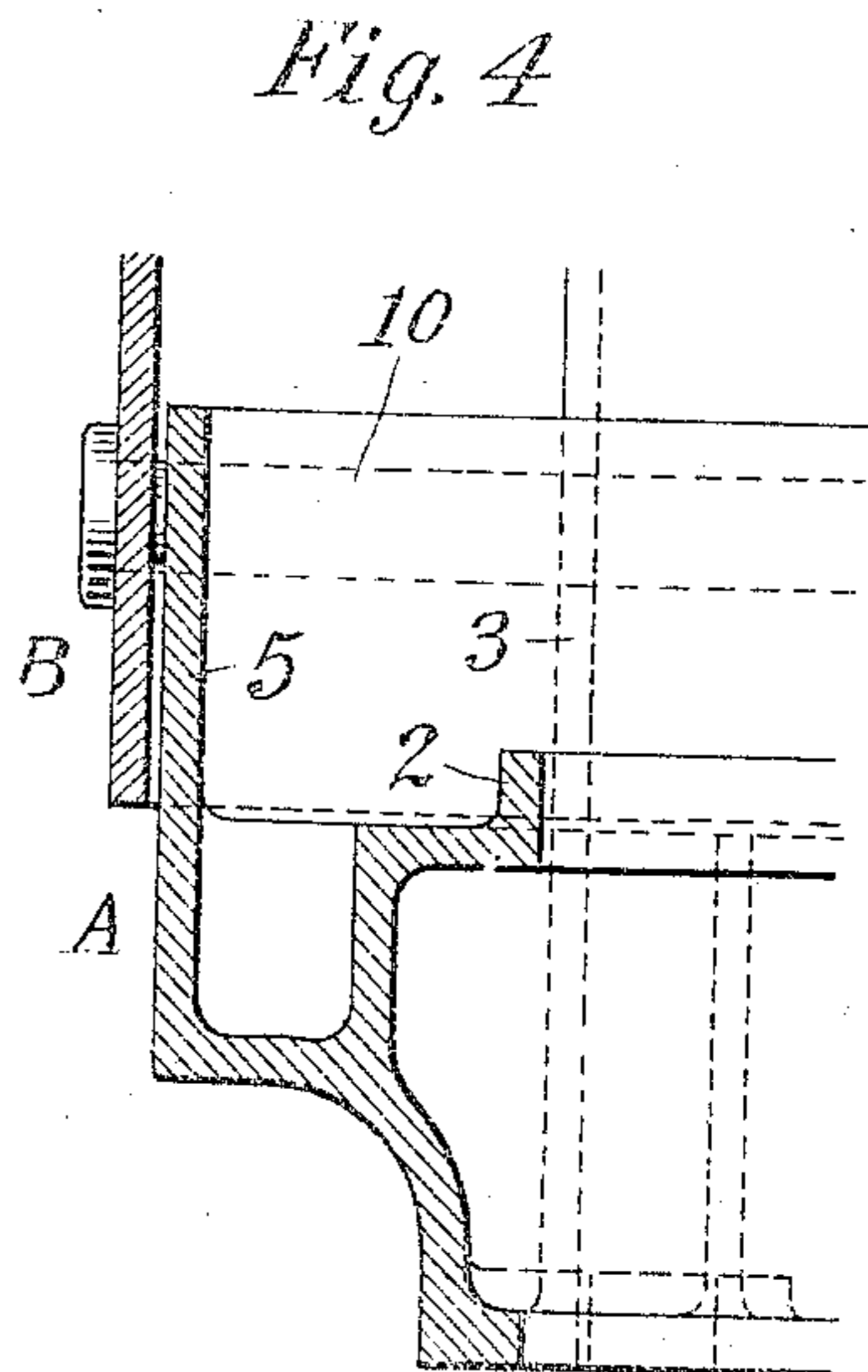
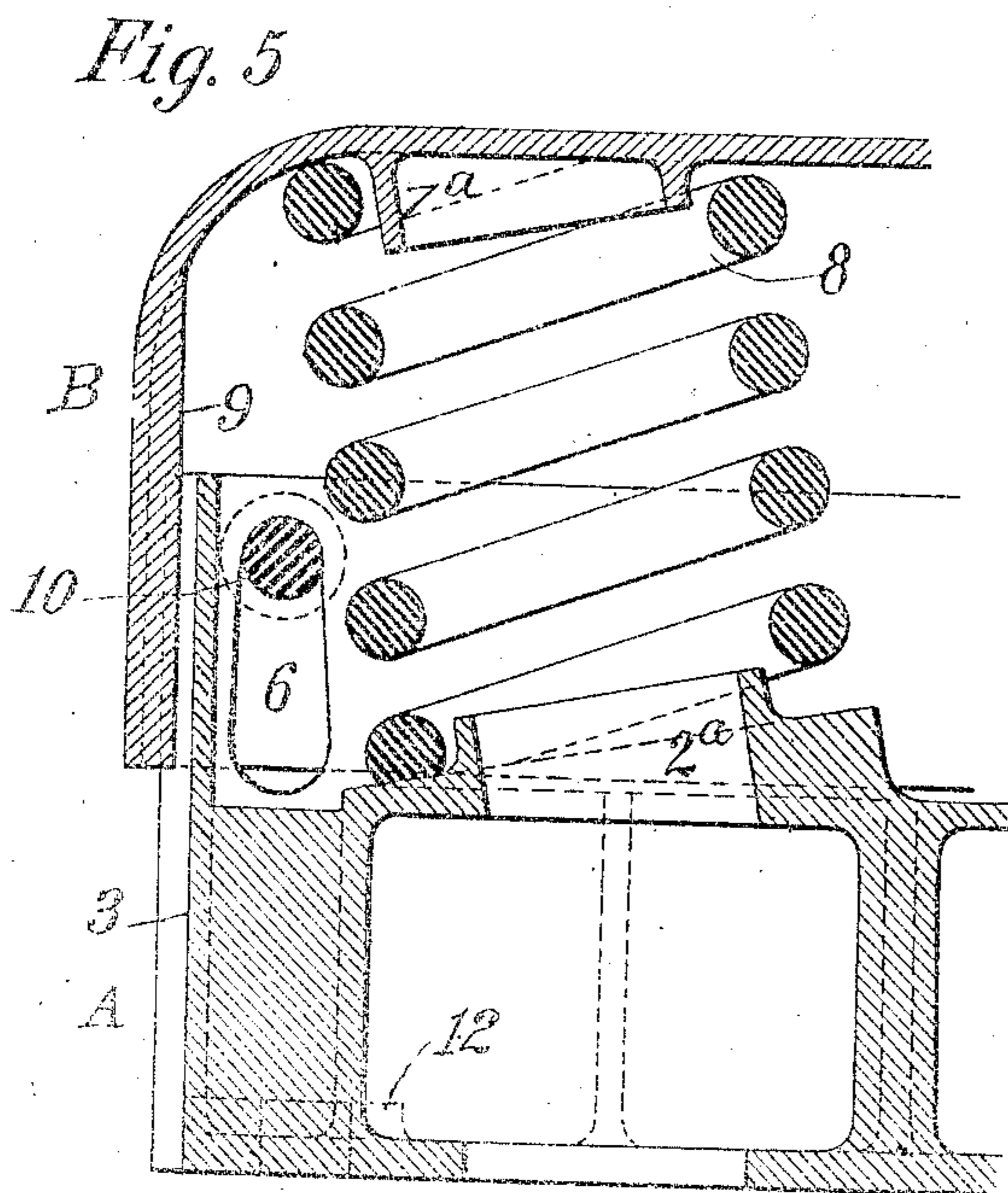
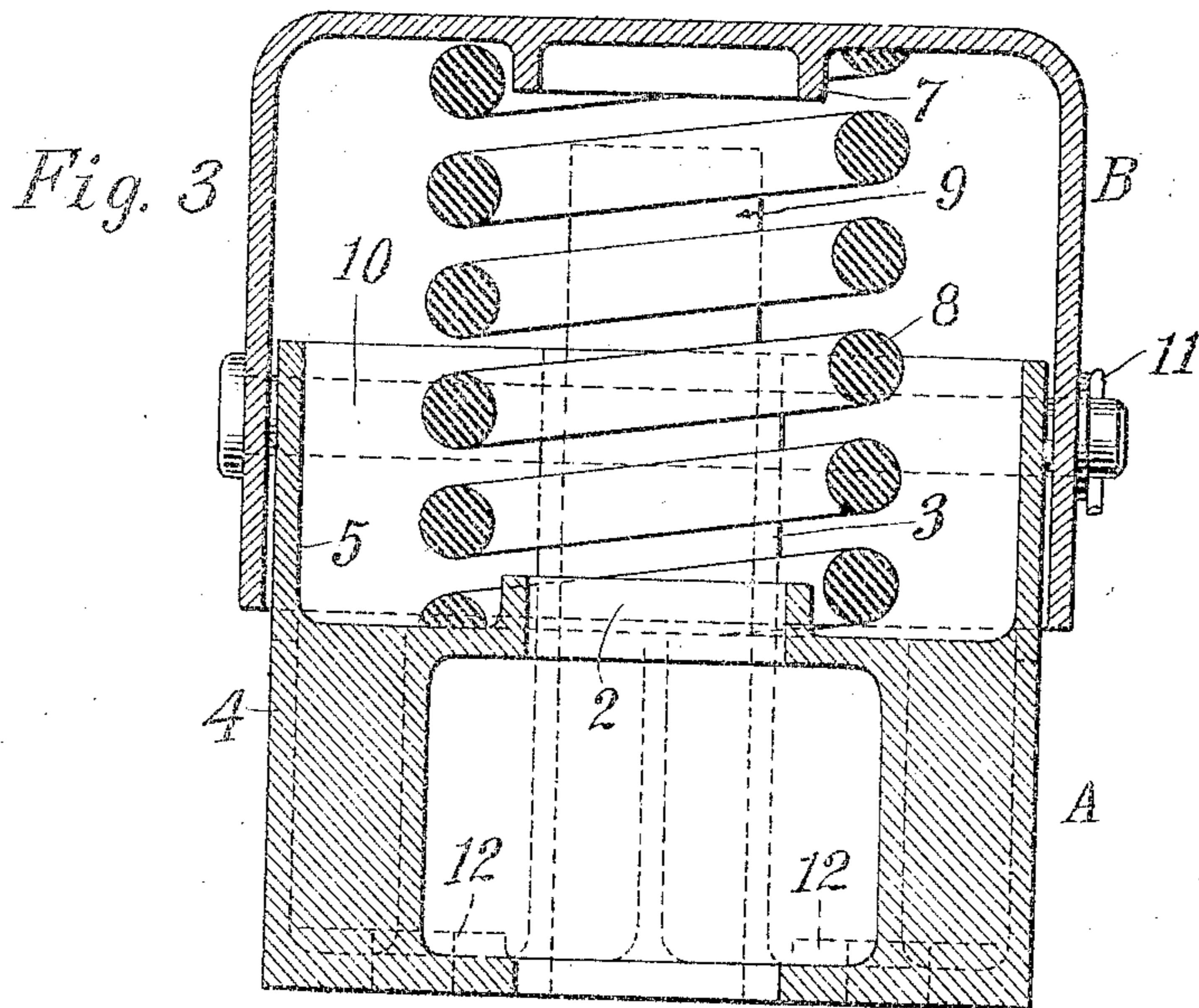
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Raphael Better
A. J. Harrington.

Inventor
Victor E. Lane
By his Attorney
F. H. Gibbs

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and Larrington

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F. H. Gibbs

UNITED STATES PATENT OFFICE.

VICTOR E. LANE, OF BERWICK, PENNSYLVANIA, ASSIGNOR TO AMERICAN CAR AND
FOUNDRY COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF NEW JERSEY.

MINE-CAR BUFFER.

959,232.

Specification of Letters Patent.

Patented May 24, 1910.

Application filed October 30, 1908. Serial No. 460,313.

To all whom it may concern:

Be it known that I, VICTOR E. LANE, residing at Berwick, Columbia county, Pennsylvania, and being a citizen of the United States, have invented certain new and useful Improvements in Mine-Car Buffers, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and to use the same, reference being had to the accompanying drawings, which illustrate the preferred form of the invention, though it is to be understood that the invention is not limited to the exact details of construction shown and described, as it is obvious that various modifications thereof will occur to persons skilled in the art.

In said drawings: Figure 1 is an end elevational view. Fig. 2 is a transverse sectional view, the section being taken on line 2—2 of Fig. 1. Fig. 3 is a sectional view taken on line 3—3 of Fig. 1. Figs. 4 and 5 illustrate modifications in section, hereinafter more fully described.

Referring to parts, A and B represent, respectively, the inner and outer telescopically arranged spring retaining and spring actuated cup members comprising the shell of my improved mine car buffer.

The base member A consists of a hollow box formed preferably of cast malleable iron with one or more hollow spring seats 2 extending outwardly therefrom and adapted to serve as seats for coil springs. This base member or shell is provided with grooves 3 extending along its outer face from the inner to the outer end thereof, the grooves being located at opposite sides of the box. Projecting outwardly from the base portion A is a flange 5 which forms a cup member and this flange is provided with slots 6 which are narrow at their outer face and widen as they approach the base.

Coöperating with the member A is a cover box or cap B which is provided with spring seats 7 which may be in alinement with the spring seats 2 or may be tangentially disposed as may be desired and between the spring seats 2 and 7 are placed coil springs 8 as shown. The cap B is provided with tongues or ribs 9 adapted to coöperate with and slide in the grooves 3 before referred to.

It is obvious that the arrangement of tongues and grooves may be otherwise arranged than as shown, so long as the proper relative sliding engagement of the parts is maintained, but it is preferred that the tongues shall be integral with the cap member as said tongues add materially to the strength of said cap. The cap member is provided with perforations for the bolts 10 which bolts pass vertically through the cap B and the flange 5 of the base member, said bolts resting in the elongated slots 6 and the flange 5 of the base member and being held in position by key 11, or the ends of the bolts may be otherwise retained in position if desired. As the bolts 10 fit in perforations only large enough to permit passage of the bolts through the flange of the cap B, it is evident that when the springs are compressed in buffing the said bolts 10 will travel inwardly in the slots 6 and as said slots are wider near the base 4 than at their outer ends they permit some lateral play of the cover member in service. The base of the member A is preferably provided with inwardly projecting lugs 12 which are perforated at 13 for the passage of bolts adapted to secure the buffer to the end sill of a car.

When used on mine cars the base may be cut out as shown in Fig. 4 to accommodate the door locking bar which is commonly used on mine cars, this cut out portion extending preferably along the upper rear portion of the base, referring to position of the buffer on the car.

In assembling the buffer the member A is secured to end sill of the car or to a suitable part thereof, the springs are placed in their proper position, the cover is then placed on and the springs slightly compressed to prevent rattling. The bolts 10 are inserted through circular holes in the cap member and pass through the elongated slots in the inner flange 5 and locked in position by means of the key 11 or an equivalent member. The expansion of the springs will hold the bolts 10 in the smaller ends of the elongated slots and the impact or shock attending the meeting of two or more cars is absorbed or taken up by the springs in the boxes, the outer shell sliding over the inner, the guides or tongues and grooves holding

them in proper position relatively and the elongated slots in the inner box allowing the bolts which pass through both members to pass backwardly in relation to the inner box as the springs are compressed. The tapered elongated slots permit of some side movement of the cover box in relation to the inner box. When the pressure or shock is relieved from the buffer the bolts or rods will move forwardly to their normal position or in the smaller ends of the elongated slots.

In Fig. 5 I have illustrated a modification in which the spring seats 2^a and 7^a are tangentially disposed with the spring seats 7^a nearer the side wall of the cover member. This arrangement is preferred in some instances as thereby corner blows are transmitted longitudinally of the axis of the outer springs.

I claim—

1. In a car buffer, the combination of a base, a cap shiftable longitudinally of the same, a spring arranged between the cap and base and disposed for resisting compressing strains on the cap and base, and a bolt and slot connection between the cap and base formed to guide and limit the relative movements of the parts at times and to permit lateral play of the cap only when under compression.

2. In a car buffer, the combination comprising a base member with obliquely disposed hollow spring seats and slotted perimetrical flange, said flange being provided with longitudinal guide grooves in its outer face, a perforated cap member provided with obliquely disposed spring seats on its inner face and with inwardly projecting guide ribs registering with the grooves in said base, and bolts extending through said base and cap.

3. In a car buffer, the combination of a base, a cap shiftable longitudinally of the same, a spring arranged between the cap and base, seats for the spring on the cap and base, and a bolt and slot connection between the cap and base, the slot of said connection being tapered from one end to the other and at its narrower end being of a width to snugly receive the bolt of said connection, said connection being formed to guide and limit the relative movements of the parts and to permit lateral play of the cap when under compression.

4. In a car buffer, the combination comprising a base member with perforations to receive securing means, spring seat, a perimetrical slotted flange; a cap member with integral spring seat and a perforated perimetrical flange adapted to telescope with the flange of the base member, retaining means projected through the perfora-

tion and slot in said flanges and a spring on said spring seats, said spring being obliquely disposed.

5. In a car buffer, the combination of members longitudinally shiftable relative to each other, and bolt and slot connections therebetween adapted to allow lateral play of the parts at one terminal of the slot.

6. In a car buffer, the combination of members longitudinally shiftable relative to each other, and bolt and slot connections therebetween adapted to allow lateral play of the parts at the inner terminal of the slot.

7. In a car buffer, the combination of members longitudinally shiftable relative to each other, and bolt and slot connections therebetween for guiding and limiting the relative movement of the parts, the slot being tapered to allow lateral play of the parts while under compression.

8. In a car buffer, the combination of members longitudinally shiftable relative to each other, and bolt and slot connections therebetween for guiding and limiting the relative movement of the parts, the slot being tapered through its length and the narrower end being of a size to accommodate the bolt.

9. In a car buffer, the combination of a base member and a cap member, one of said members surrounding a portion of the other, the inclosed portion of one member being formed with slots, each tapering from its inner end outwardly, and the inclosing member being formed with apertures registering with said slots, bolts passed through said apertures and slots and substantially fitting the apertures and the narrower end of the slot, and a spring interposed between the base and cap members.

10. In a car buffer, the combination of a base member and a cap member, one of said members surrounding a portion of the other, the inclosed portion of member being formed with slots spaced apart and each tapering from its inner end outwardly, and the inclosing member being formed with a pair of apertures for each slot registering therewith, a bolt passed through each slot and the respective pair of apertures and substantially fitting the apertures and the narrower end of the slot, and a spring interposed between the base and cap members.

11. In a car buffer, the combination of members longitudinally shiftable relative to each other, and bolt and slot connections therefor for guiding and limiting the relative movement of the parts, the slot being gradually flared from its outer end toward its inner end.

12. In a car buffer, the combination of

relatively longitudinally shiftable base and
cap members, a spring interposed therebe-
tween, laterally disposed guides for restrict-
ing and guiding the longitudinal movement
5 of the members, and auxiliary guiding bolts
carried by one of the members, the other
member being slotted to accommodate the
play of the bolts, the slots being tapered to
permit play of the bolts longitudinally with

respect to the slot and also transversely 10
thereto with respect thereto when under
compression.

In witness whereof, I have hereunto set
my hand in the presence of two witnesses.

VICTOR E. LANE.

Witnesses:

J. L. McDOWELL,
JAMES J. NUNGESSER.