

No. 682,112.

Patented Sept. 3, 1901.

W. A. McKNIGHT.

RAIL POINT.

(Application filed May 13, 1901.)

(No Model.)

3 Sheets—Sheet 1.

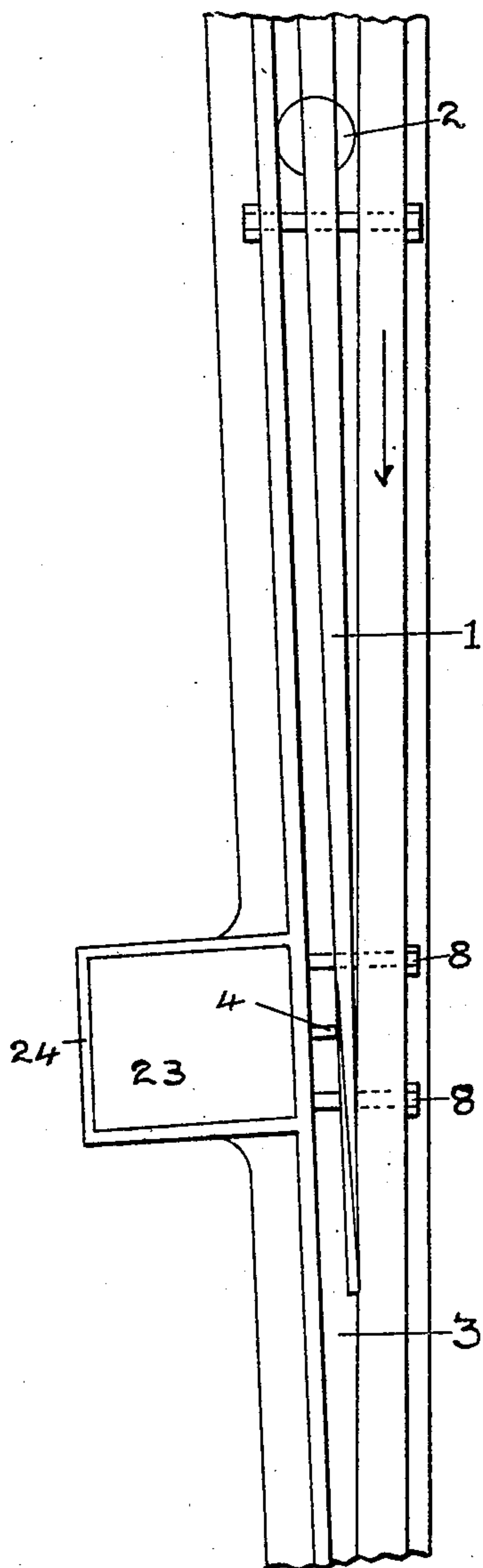


Fig 1

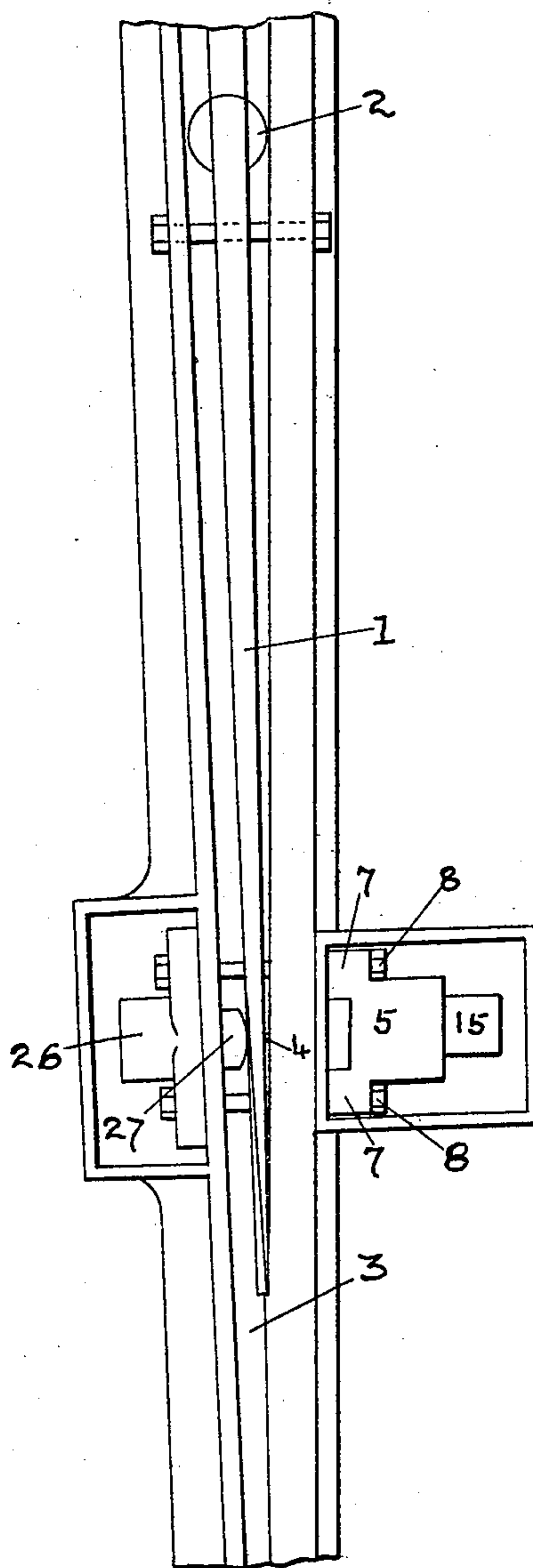


Fig 5

Witnesses  
O. H. Coventry  
Thos. Audley

Inventor  
W. A. McKnight  
per Chas. Coventry  
Attorney.

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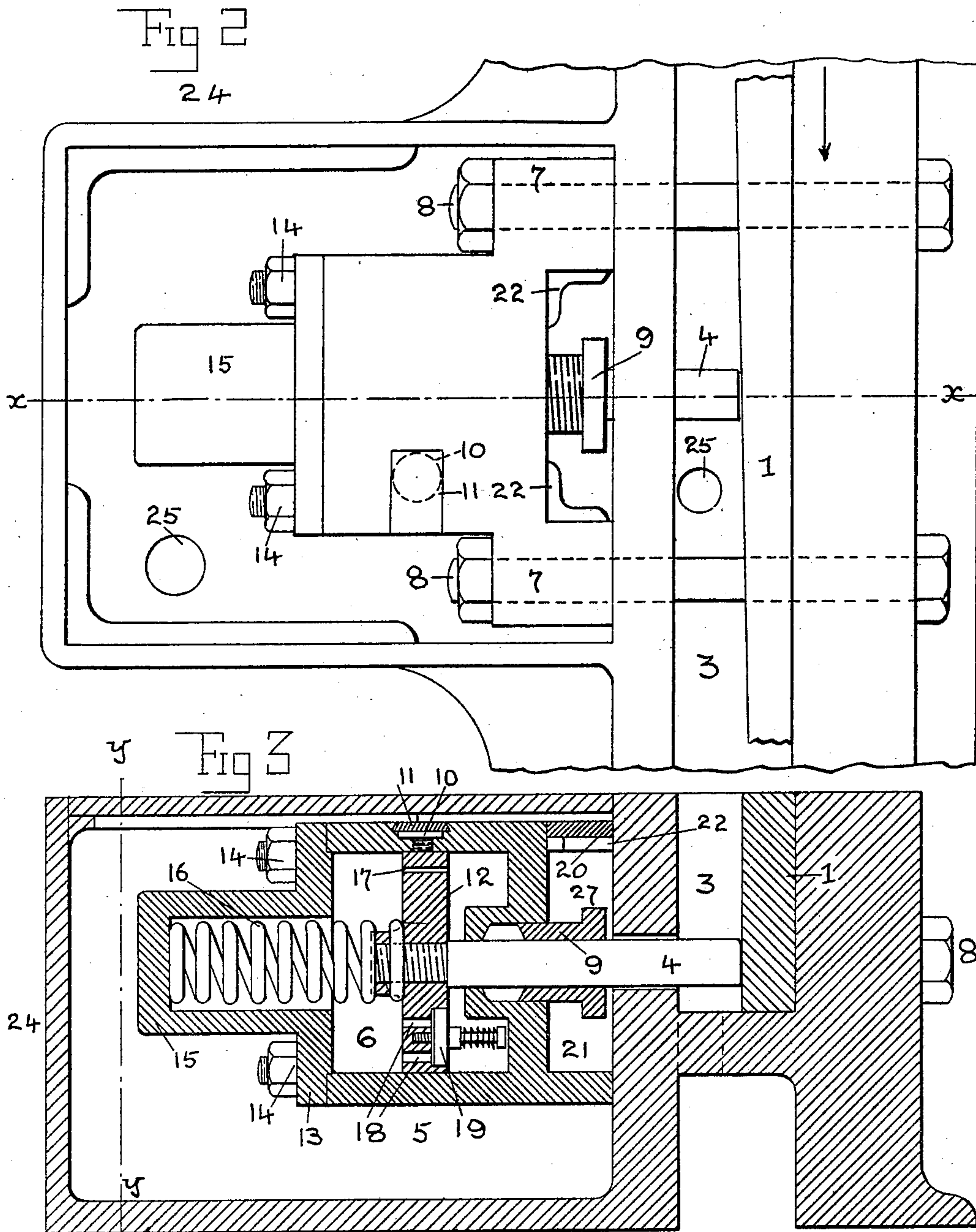
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Witnesses

*P. H. Coventry*  
*Thos Audley*

Inventor

*W. A. McKnight*  
per *Chas Coventry*,  
Attorney.

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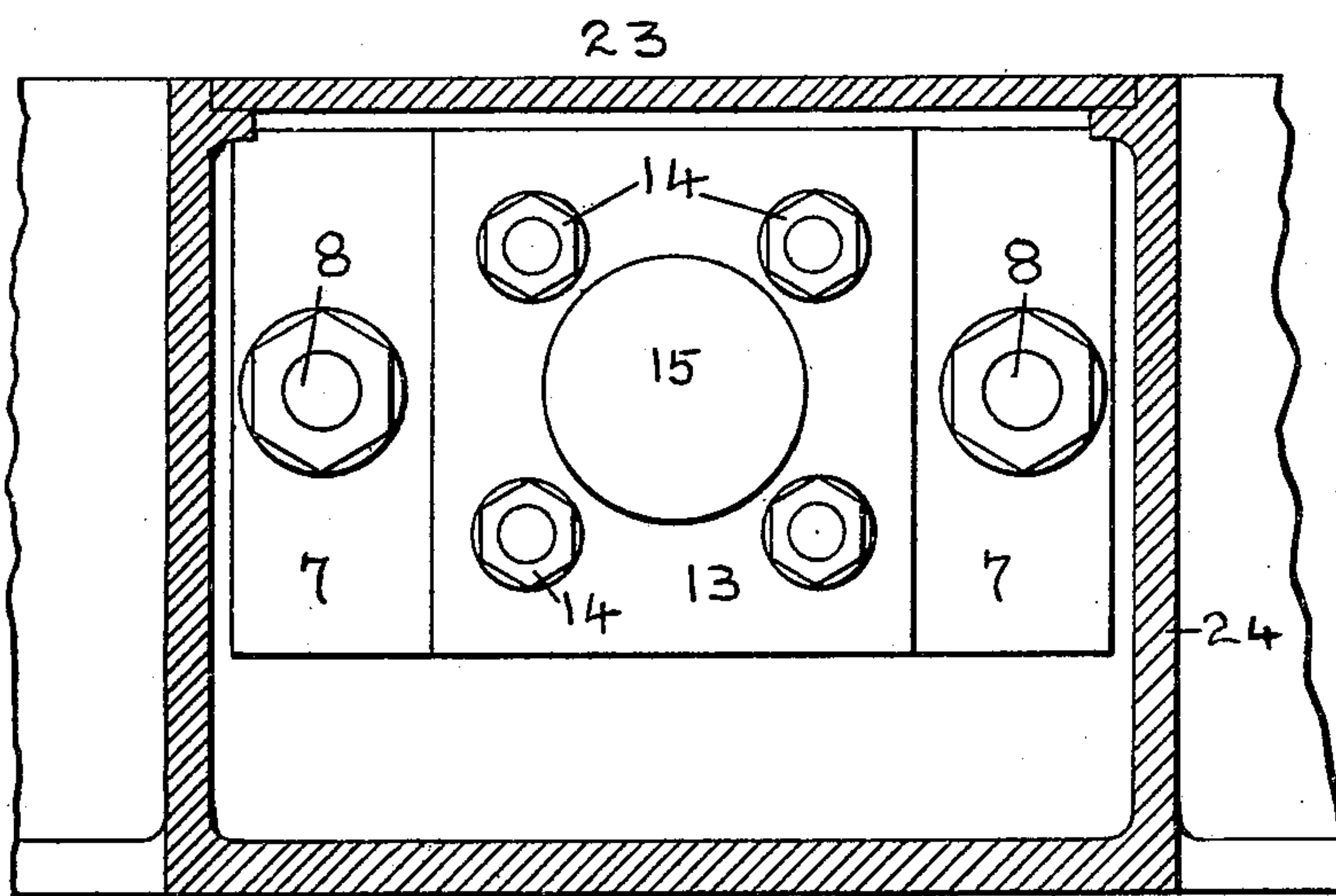


Fig 4

Witnesses

*P. H. Coventry.*  
*Jos. Audley*

Inventor

*W. A. McKnight*  
per *Chas Coventry.*  
Attorney.



# UNITED STATES PATENT OFFICE.

WILLIAM ALPHONSUS MCKNIGHT, OF LIVERPOOL, ENGLAND.

## RAIL-POINT.

SPECIFICATION forming part of Letters Patent No. 682,112, dated September 3, 1901.

Application filed May 13, 1901. Serial No. 60,090. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIAM ALPHONSUS MCKNIGHT, a subject of the King of Great Britain, residing at 24 and 26 Mathew street, 5 Liverpool, in the county of Lancaster, England, have invented a new and useful Improvement in Rail-Points, of which the following is a specification.

My invention relates to improvements in 10 rail-points in which the movable tongue of the point is normally kept in one position (hereinafter termed "closed") by means of a spring or equivalent; and the object of my improvements is to provide means whereby 15 the return movement of the tongue to closed position (after it has been pushed aside to open position by a passing wheel in well-known manner) may be buffered or retarded, so that the unpleasant and destructive jar 20 and clang hitherto usual is avoided.

My improvements may be embodied as a part of the rail-point during its manufacture, or with slight modification it may be applied to existing rail-points, all as hereinafter de- 25 scribed.

A convenient way of carrying out my invention is illustrated in the accompanying drawings, in which—

Figure 1 is a plan view of such portions of 30 a rail-point as are necessary to show my invention, the lid 23, hereinafter described, being in place. Fig. 2 is a plan view of a portion of Fig. 1 on an enlarged scale, the afore-said lid 23 being removed, so as to allow the 35 interior of box 24 to be seen. Fig. 3 is a section, as on line *x x* of Fig. 2. Fig. 4 is a section, as on line *y y* of Fig. 3. Fig. 5 is a similar view to Fig. 1, but showing a modification.

40 Referring first to Figs. 1 to 4, 1 is the movable tongue of the points, and it is pivoted in well-known manner, as at 2. It swings from side to side in groove 3 when opened by a passing wheel, being normally kept closed by 45 the pressure of rod 4 against it.

5 is a casting having a central cylinder 6 bored out of it and having deep lugs 7, whereby it is held against the side of the rail by bolts 8. The rod 4 enters said cylinder 6, and 50 a gland 9 is provided. In use the cylinder 6 contains oil or other liquid, which is initially fed thereinto by a feed-hole normally closed

by screw-plug 10, having a protecting-cap 11. The object of the protecting-cap 11 is to prevent said plug 10 from being shaken up out 55 of its place by the vibration to which the rail is subjected.

12 shows a piston adapted to reciprocate in cylinder 6.

13 is the cylinder-cover, which is held in 60 place by nuts 14, and which carries a central recessed trunk 15, in which the greater part of the spring 16 lies. Piston 12 has a small perforation or vent 17, which is always open, and other perforations 18, which are normally 65 closed by a valve 19.

20 is a lid which covers a recess 21 in casting 5, and which when in place rests on lugs 22.

23 is a lid or cover for the outside box or casing 24, which protects the apparatus, and 70 25 25 are drain-holes for the escape of rain-water.

The mode of action is as follows: Presuming the parts to be in their normal position, as shown in the drawings, a car-wheel traveling 75 in the direction of the arrow in Figs. 1 and 2 will spring the tongue 1 aside, and this will push the rod 4 farther into the cylinder 6, which causes the piston 12 to move therein and spring 16 to be compressed. It should 80 be understood that these movements are very rapid, and valve 19 (of which there may be one or more) opens, owing to the pressure of the oil, and allows said oil to flow through 85 holes 18. These holes are of such area that no material resistance is offered to the movement of piston 12. As soon as the wheel has passed and released the tongue 1 spring 16 commences to reëxpand and to return said tongue to closed position, but valve 19 being by this 90 time closed again the oil has to return through vent 17 alone, and as this is of small area it will be readily understood that a material retarding of the return movement is effected. I find in actual practice that a very gentle 95 and practically-noiseless return motion is assured, and this while of itself a great advantage also lessens the wear and tear of the point usually caused by the violent impact of the tongue on its return. 100

Referring now more particularly to Fig. 5, in this figure I show my invention applied to an already-existing spring-point. The spring for returning the tongue 1 to closed



position is within a casing 26, and its push is transmitted to said tongue by a hollow plunger 27, which is well known and forms no part of my invention. In this case my invention is used merely as a buffer or retarder for the return movement of the tongue and not to actuate the latter. The only changes necessary in the construction of my invention when used in this way are that the spring 16 is made much weaker than when used to move the tongue, as its function is now merely to cause rod 4 to follow the tongue when thrown over by the wheel, as above described. The spring may even be dispensed with, if desired, and the end of rod 4 linked to the tongue 1. The position of valve 19 is reversed from the position shown in Fig. 3, as it is now required to open when rod 4 is being projected from the cylinder instead of when it is entering the cylinder, as first described.

I am aware that prior to my invention spring-actuated points have been made, and I make no claim to them broadly.

Although I have described a convenient and practical way of carrying my invention into effect I do not confine myself to the pre-

cise construction shown, as it is evident that considerable variation may be made in the mode of applying it.

What I claim, and desire to secure by Letters Patent of the United States, is—

1. In a rail-point the combination of a box 14, a cylinder within said box having lugs 7, bolts 8 adapted to hold said cylinder in position, a piston 12 having valve 19 and vent 17, a piston-rod whose outer end is in direct contact with the tongue 1, and a spring 16 within said cylinder and in direct contact with said piston, substantially as set forth and for the purposes specified.

2. In a rail-point in combination with a cylinder adapted to contain oil, a piston adapted to reciprocate in said cylinder, and means for connecting said piston with the movable tongue of the point, of a screw-plug 10 and a protecting-cap 11, substantially as described and for the purposes set forth.

WILLIAM ALPHONSUS McKNIGHT.

Witnesses:

JAMES M. LAREU,  
WM. L. JURRO.