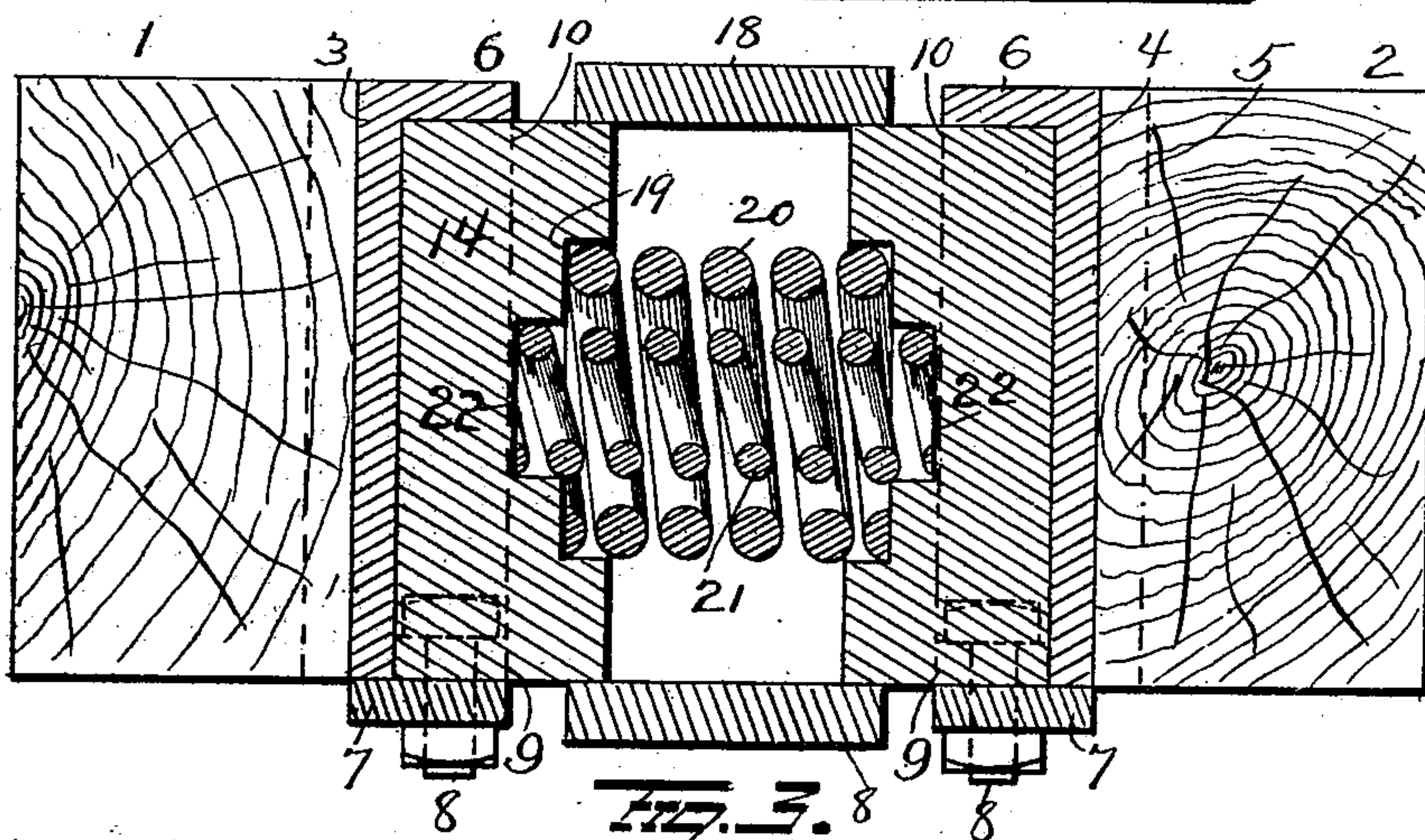
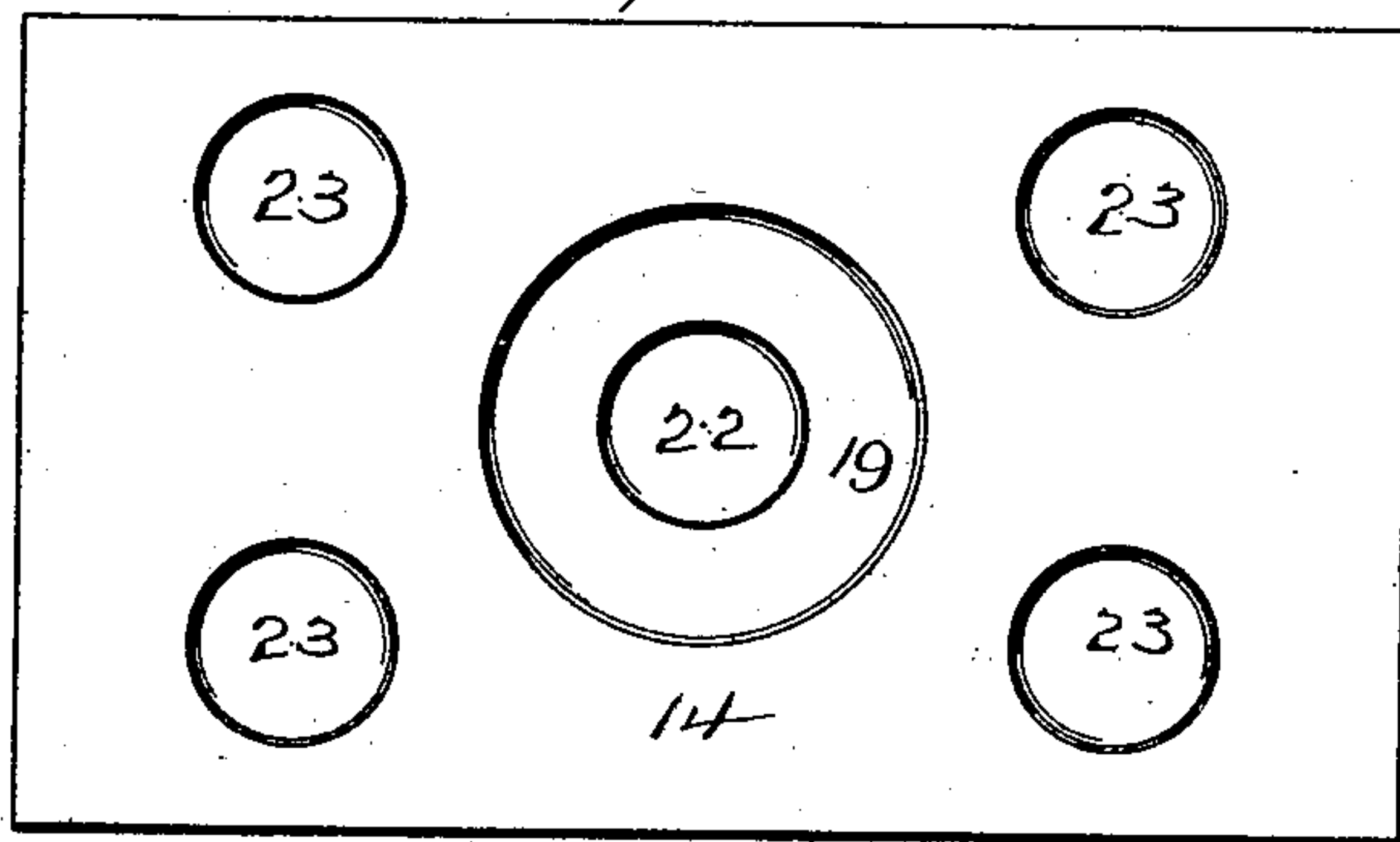
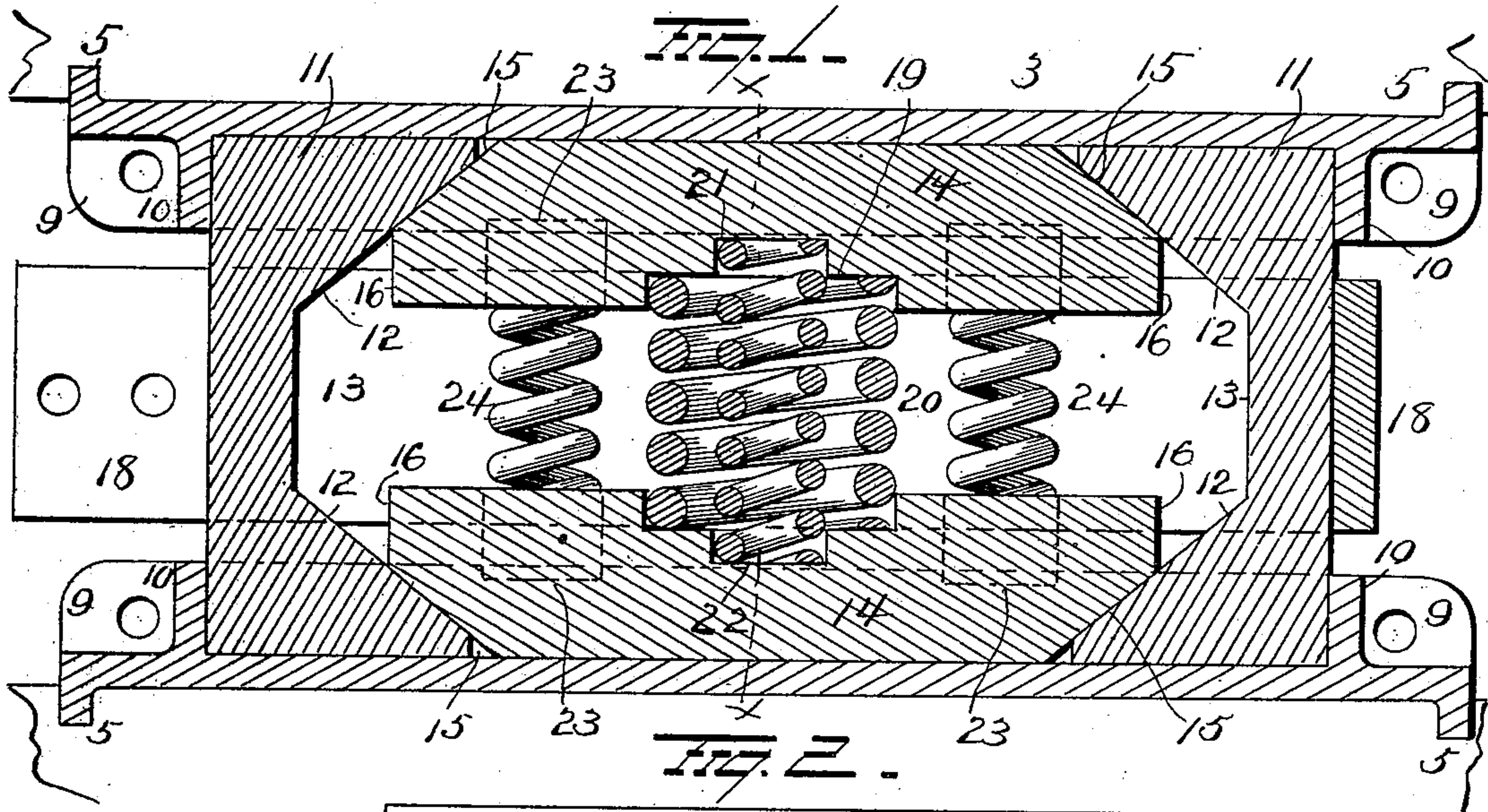


No. 711,914.

Patented Oct. 21, 1902.

J. TIMMS.  
FRICTION DRAFT GEAR.  
(Application filed July 23, 1902.)

(No Model.)



WITNESSES  
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# UNITED STATES PATENT OFFICE.

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## FRICITION DRAFT-GEAR.

SPECIFICATION forming part of Letters Patent No. 711,914, dated October 21, 1902.

Application filed July 23, 1902. Serial No. 116,751. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES TIMMS, of Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful  
5 Improvements in Friction Draft-Gear; and I do hereby 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  
10 same.

My invention relates to improvements in friction draft-gear and buffing apparatus for railroad-cars, the object of the invention being to so construct such appliances as to ob-  
15 tain a maximum amount of spring capacity.

With this object in view the invention consists in certain novel features of construction and combinations and arrangements of parts, as hereinafter set forth, and pointed out in  
20 the claims.

In the accompanying drawings, Figure 1 is a sectional view of a draft-rigging, showing the application of my invention. Fig. 2 is a face view of one of the intermediate blocks,  
25 and Fig. 3 is a sectional view through the draft-irons on the line *xx* of Fig. 1.

1 2 represent the parallel sills of a car, and 3 4 the draft-irons attached thereto. Each draft-iron is provided at its ends with flanges  
30 5, which enter the sills, and each draft-iron is provided at its upper longitudinal edge with an inwardly-projecting flange 6 and at the lower edge with an inwardly-projecting removable flange or plate 7. The flange or  
35 plate 7 of each iron is secured in place by means of bolts 8, which pass through said flanges or plates and lugs 9 on the draft-irons. The flanges 6 7 constitute guides for the friction draft-gear, hereinafter described, and at  
40 the ends of said guides the draft-irons are provided with abutments 10 for the front and rear end blocks or followers of the gear. The front and rear blocks 11 11 are mounted to move between the guides in the draft-irons  
45 in a plane parallel therewith; but the movement of each of said blocks independently of the draft-irons is limited in one direction by the abutments 10. The blocks 11 11 are spaced apart, and each is provided on its in-  
50 ner side with oppositely-inclined faces 12 12 and an intermediate face 13 at right angles

to the longitudinal axis of the gear. Between the blocks 11 11 and disposed at right angles thereto elongated intermediate blocks 14 are located, and each elongated block is provided  
55 at respective ends with inclined faces 15, which bear against and have frictional contact with the inclined faces of the blocks 11, and said intermediate blocks are also provided with end faces 16, disposed parallel  
60 with the faces 13 of the blocks 11. Normally the outer faces of the elongated blocks 11 may rest against the draft-irons, being held in such position by means of springs,  
as hereinafter explained; but when pressure  
65 is applied to either of the blocks 11, so as to move the same toward the other block 11, the wedging action effected by the inclined faces of said blocks 11 with the inclined ends of the  
elongated blocks 14 will cause the latter to  
70 move toward each other against the resistance of the springs located between them. These movements are brought about by the pulling or buffing movements of the draw-  
bar, the rear end of which abuts against one  
75 of the blocks 11 and connected with the other block 11 through the medium of a yoke 18.

One defect in friction draft-gear of the class to which my invention relates grows out of the comparatively small spring capacity which  
80 has been available; and it is the principal aim of my invention to provide means whereby this spring capacity can be increased. To this end I provide each intermediate block 14 with a seat 19 for the large spring 20. This  
85 spring rests at its ends in the seats 19 in the faces of the respective intermediate blocks 14, while the inner spring 21 rests within recessed seats 22, formed in the faces of said blocks. The spring 21 to be of any material  
90 assistance to the main spring and at the same time permit of the necessary movement of the intermediate blocks must be of proper size bar-steel and the coils brought closer together than the coils of the main spring. Hence if  
95 the two springs are of the same length it will be seen that if the main spring is capable of two inches compression the coils of the inner spring will come together before the limit has been reached, thus limiting the movement of  
100 the blocks 14. By recessing the blocks 14, as above described, I secure an increase in the



length of the narrower spring, and thus provide for the additional compression necessary for the standard or full movement of the blocks. To further increase the spring capacity of the gear, I provide each block 14 with recessed seats 23 at the corners thereof, thus utilizing space which would otherwise be lost. These seats 23 are deeper than seat 22 and receive the springs 24, which being of less diameter than the inner spring 21 and made from smaller bar-steel their coils must be closer together than the coils of the inner spring 21. By making the recesses or seats 23 deeper than the recesses 22 I provide space for longer springs, which have a compressive capacity equal to that of the larger springs.

The movement of the friction-blocks is limited by the faces 13 of the end or follower blocks 11 coming in contact with the end faces 16 of the intermediate blocks 14.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a friction draft-gear, the combination with two pairs of friction-blocks having co-operating inclined faces, one pair of said blocks being disposed between the members of the other pair, each inner block having a plurality of seats, on different planes for springs, and a series of springs each mounted at its respective ends in the seats of the respective inner blocks.

2. In a friction draft-gear, the combination with two pairs of friction-blocks having co-operating inclined faces, one pair of blocks disposed between the members of the other pair, a main helical spring bearing at its ends against the respective inner blocks, a small auxiliary spring within the main spring, said inner blocks having the auxiliary-spring seats in planes farther separated than the main-spring seats, said springs being of normally different lengths but all having the same and a limited movement in compression.

3. In a friction draft-gear, the combination with draft-irons, each provided at one edge with an integral guide-flange, and each provided at the other edge with a removable guide-flange, of two pairs of friction-blocks mounted between said guide-flanges, one pair of blocks disposed between the other pair and said blocks having coöperating friction-faces, each of the intermediate blocks having a series of spring-seats, the seats of each series being in various planes, and springs located between the intermediate blocks and mounted in said seats.

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

JAMES TIMMS.

Witnesses:

E. H. SYMINGTON,  
J. C. STONE.