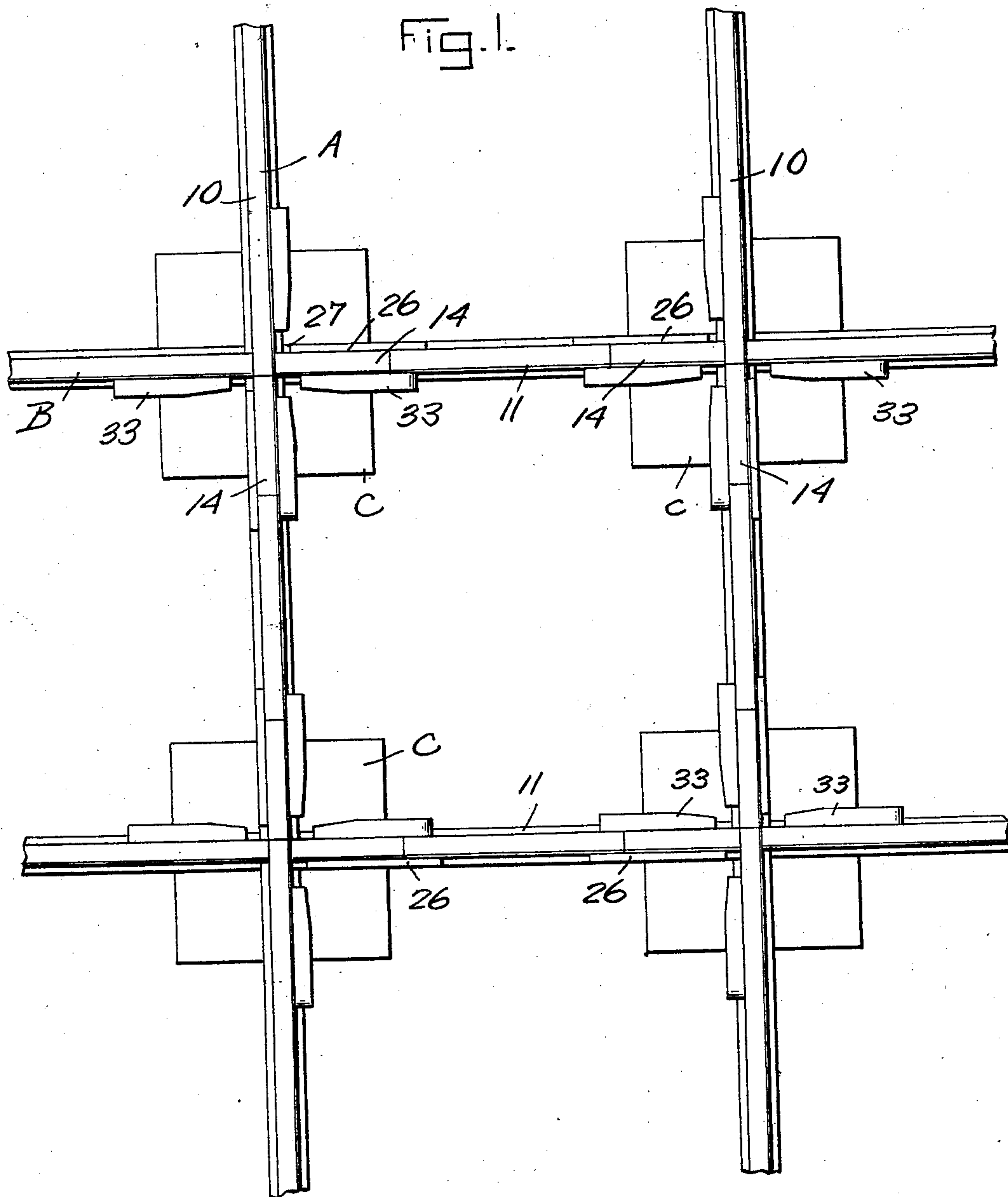


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J. W. HELMS.
RAILROAD CROSSING.
APPLICATION FILED JUNE 5, 1907.

4 SHEETS—SHEET 1.



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4 SHEETS—SHEET 2.

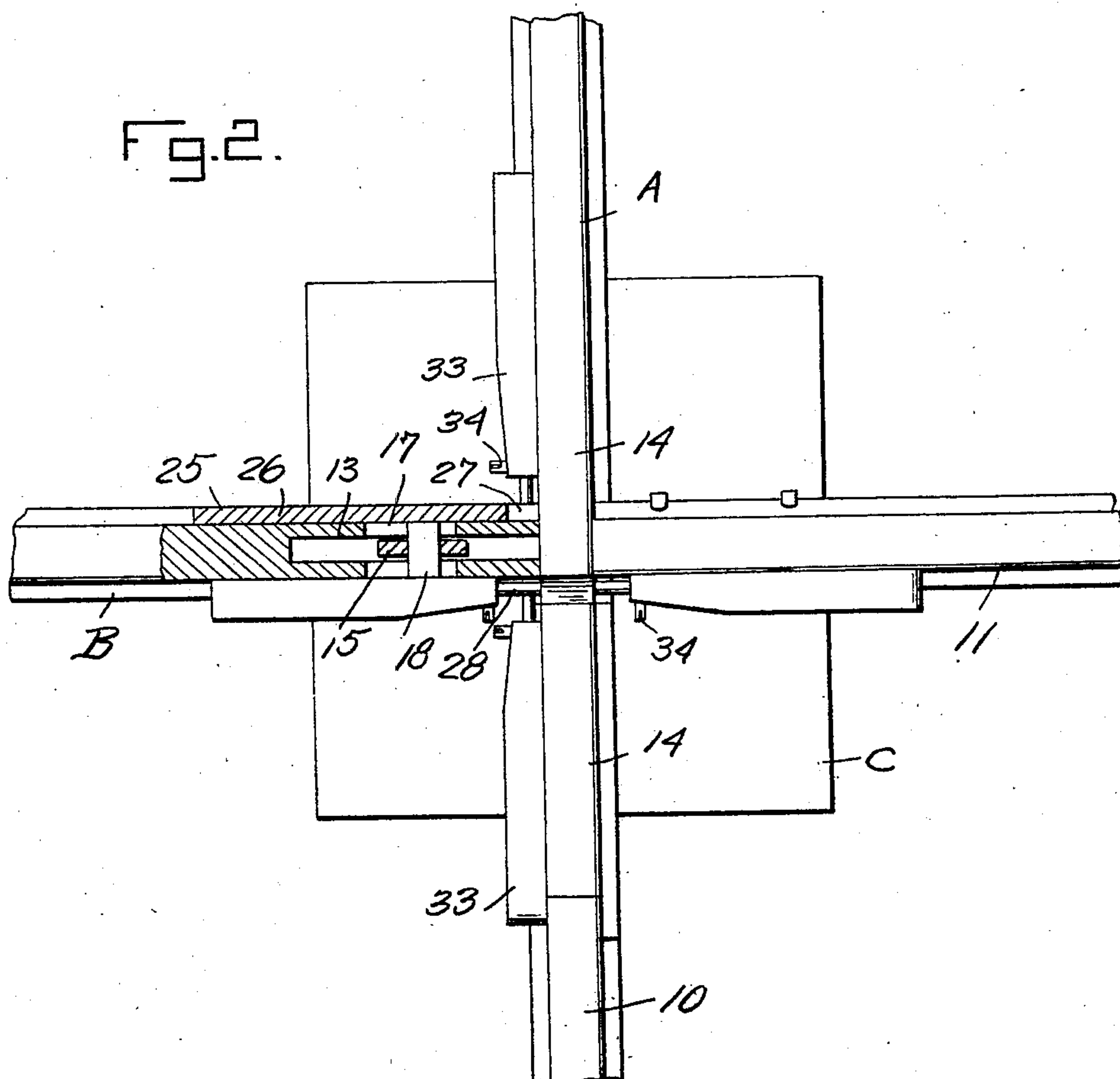
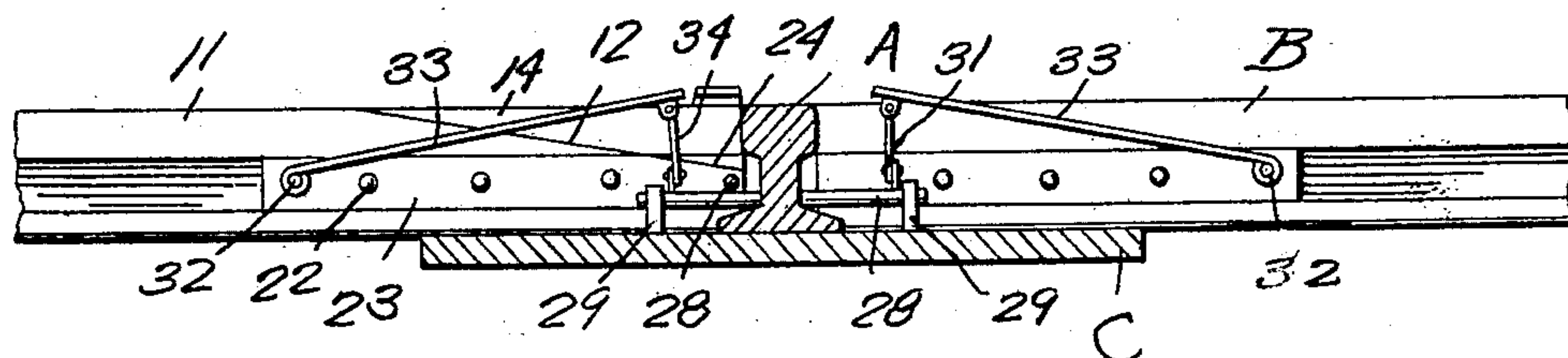


Fig. 3.



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4 SHEETS—SHEET 3.

Fig. 4.

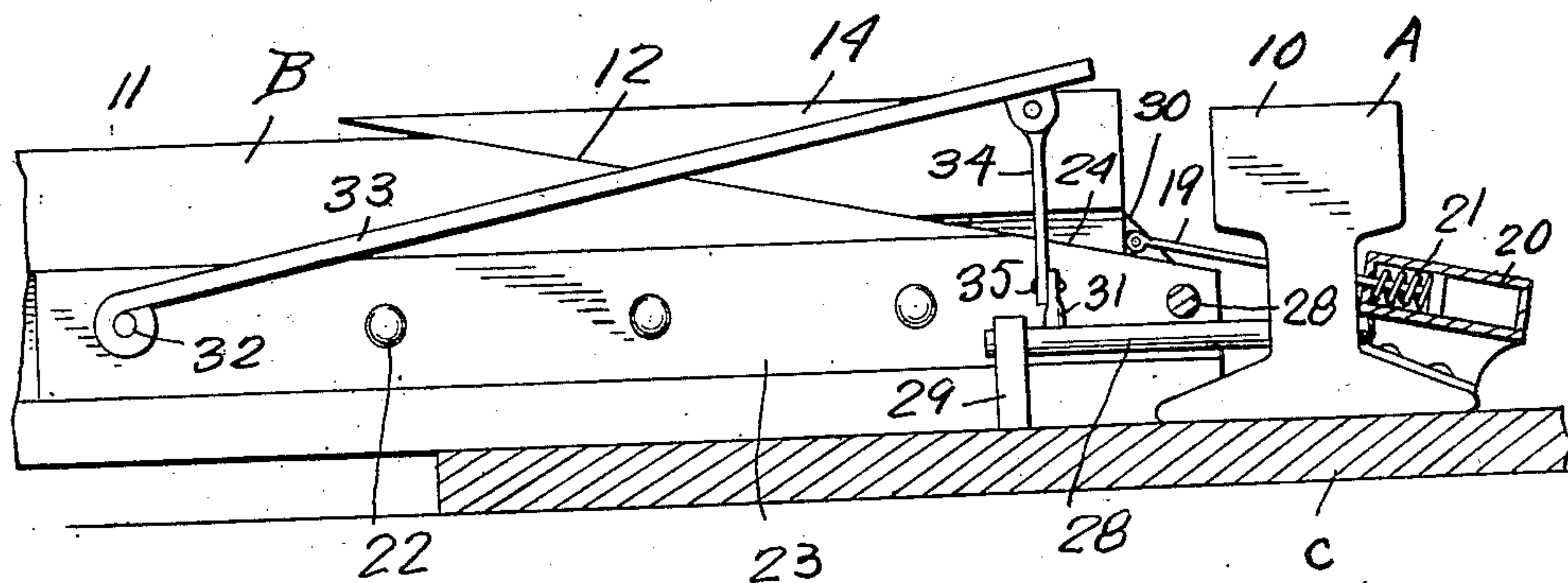
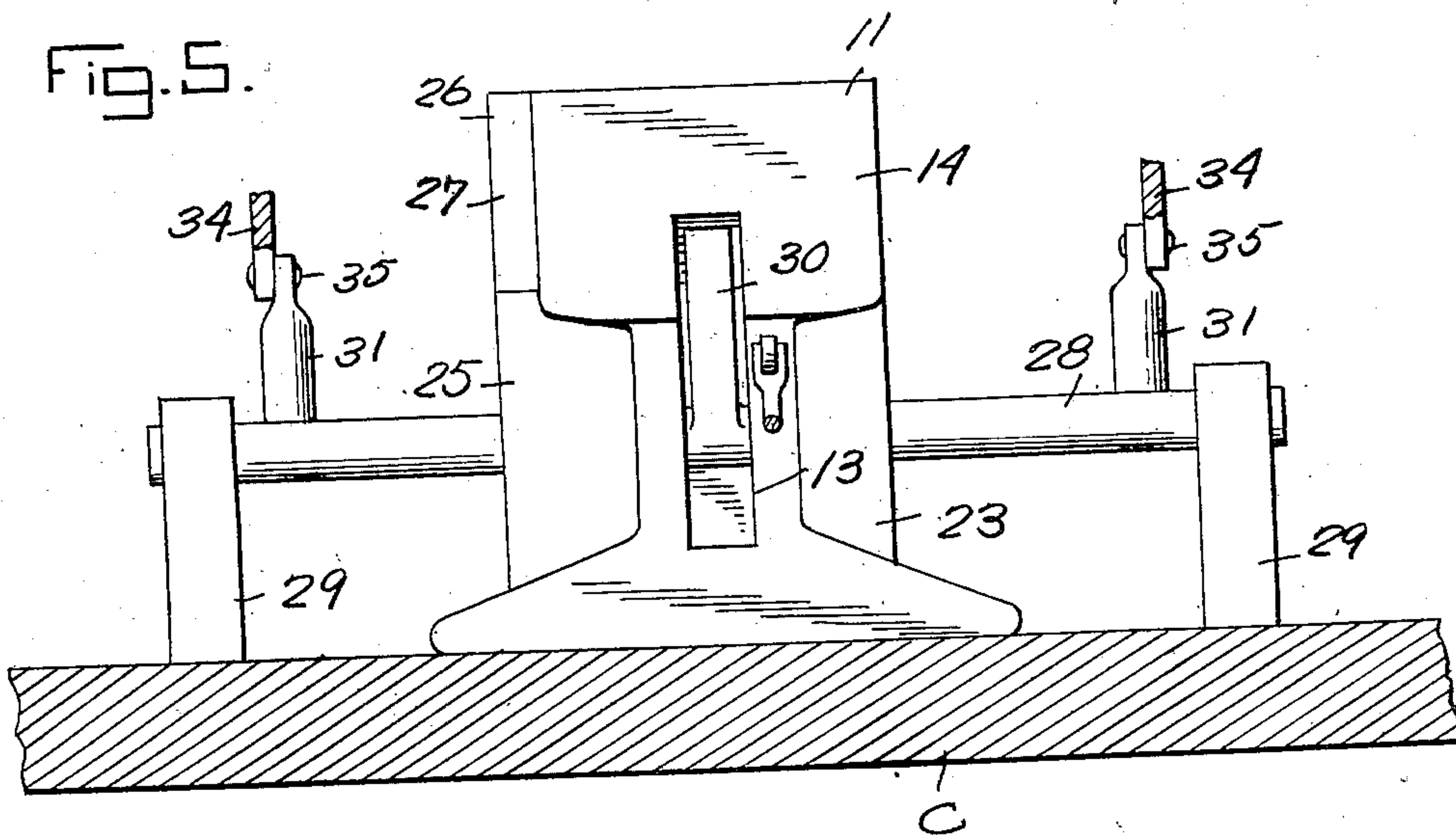


Fig. 5.



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4 SHEETS—SHEET 4.

Fig. 6.

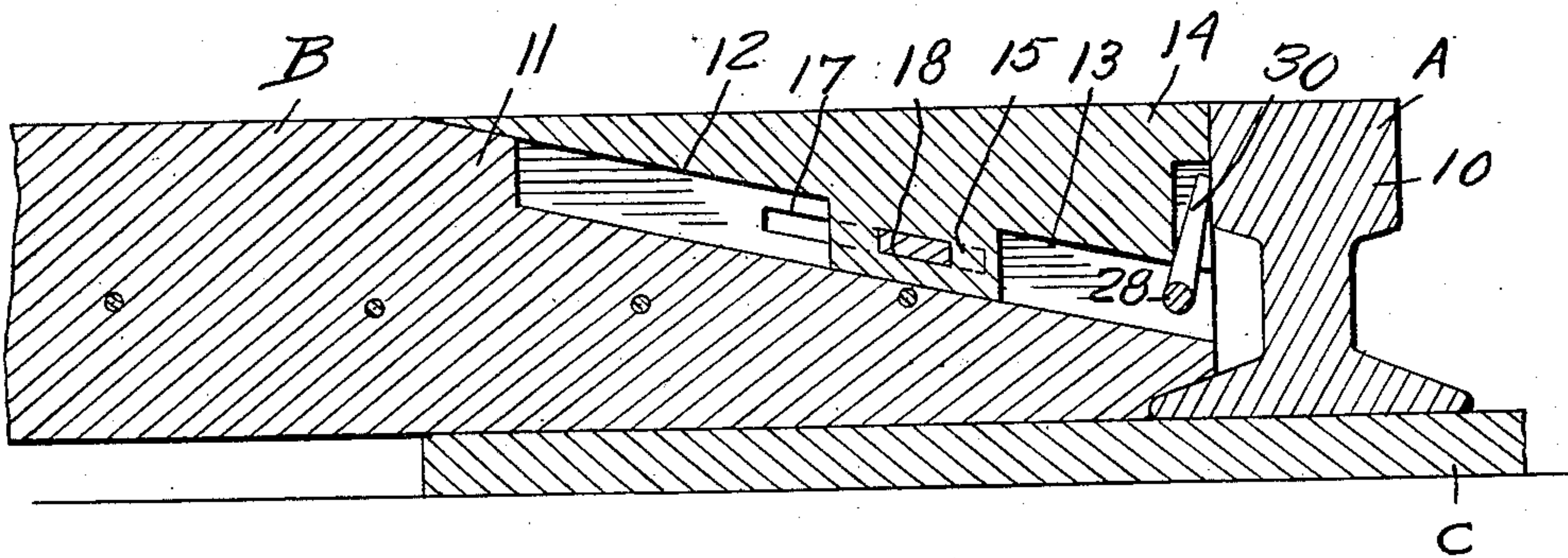
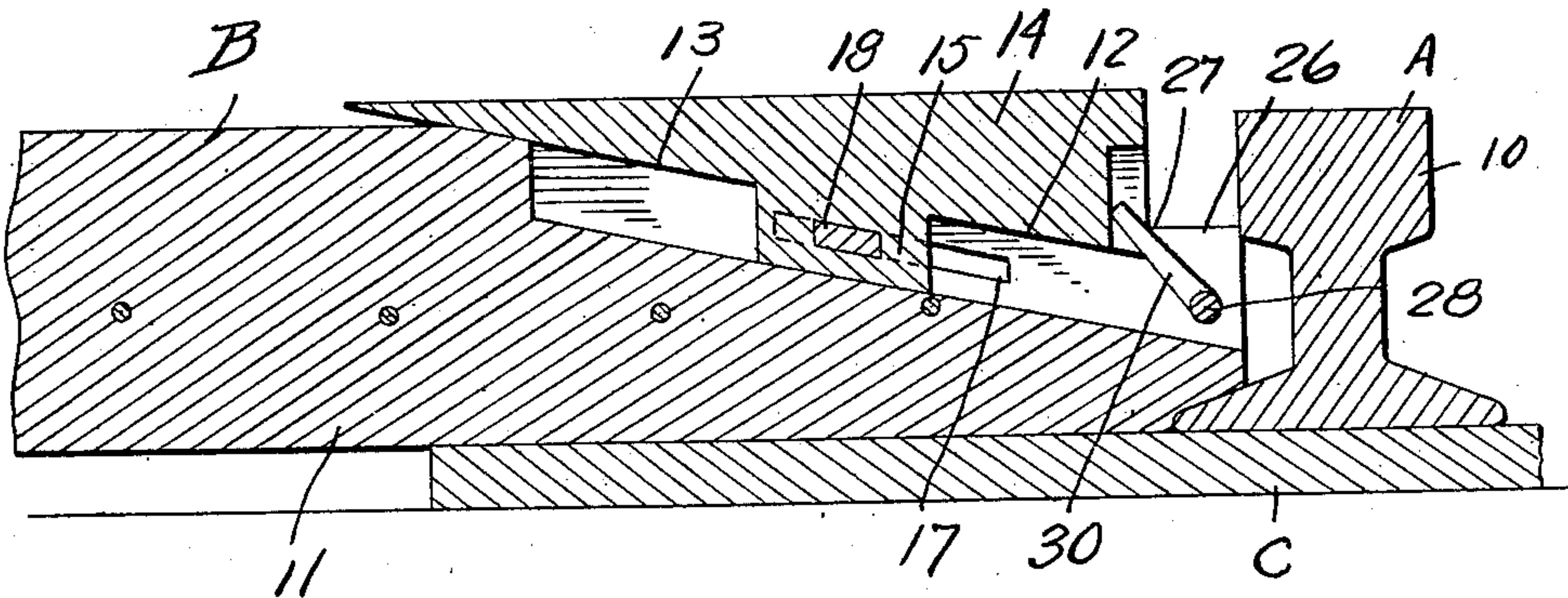


Fig. 7.



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UNITED STATES PATENT OFFICE.

JAMES W. HELMS, OF EAST ST. LOUIS, ILLINOIS.

RAILROAD-CROSSING.

No. 862,845.

Specification of Letters Patent.

Patented Aug. 6, 1907.

Application filed June 5, 1907. Serial No. 377,367.

To all whom it may concern:

Be it known that I, JAMES W. HELMS, a citizen of the United States, residing at East St. Louis, in the county of St. Clair, State of Illinois, have invented certain new and useful Improvements in Railroad-Crossings; 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 same.

10 This invention relates to railway crossings and more particularly to that class known as noiseless crossings.

In carrying out my invention I have in view the provision of a crossing of this character so constructed that a train may pass on either track and on a practically continuous and unbroken rail surface and hence without the thumping noise prevalent in the present construction of crossings. To attain this result I provide upon certain of the rails formed by the crossing, slidable rail sections which are so mounted and so controlled by the passage of a train as to slide back to permit passage of the flanges of the wheels of the train and after such passage of the flanges to be drawn back automatically into their original positions. In other words the slidable rail sections are theoretically moved by the passage of each wheel of the train but as a matter of fact, where a train is traveling at a very high rate of speed, I have found that the said rail sections remain in their shifted position practically the entire time of passage of the train owing to the fact that the operating devices for the said rail sections are struck in such rapid succession.

In the accompanying drawings, Figure 1 is a top plan view of a railroad crossing showing the application of the principle of my invention, Fig. 2 is a detail top plan view of a portion of the crossing showing two intersecting rails and showing one of the movable rail sections moved or shifted to permit passage of a train, another of the rails being shown partly in horizontal section, Fig. 3 is a view in side elevation of one of the rails, the adjacent or intersecting rail being shown in transverse section and the movable section of the first mentioned rail being shown closed, Fig. 4 is a similar view but with that side of the rail section shifted to permit passage of the flange of a wheel, Fig. 5 is a detail end elevation of one of the rails, Fig. 6 is a detail vertical longitudinal sectional view through the end portion of one of the rails of the crossing showing the shiftable rail section in lowered position, and, Fig. 7 is a similar view but showing the rail section raised.

50 In the drawings one of the intersecting track sections is indicated in general by the reference character A and the other by the reference character B.

The rails of the track section A are indicated by the numeral 10 and the rails of the track section B by the numeral 11. The rails of the two track sections 55 which form the hollow square of the crossing are provided each at their ends with shiftable rail sections which are movable to permit of passage of the flanges of the wheels of the train passing on either section. As each of these shiftable rail sections is supported and 60 operated in a manner identical with the others, it is thought that a description of two adjacent ones of the rail sections together with their operating means will be sufficient to clearly illustrate the invention.

At their points of intersection, the rails 10 and 11 are 65 supported upon plates C to which the rails are bolted, it being understood that this plate forms a solid foundation for the said ends of the rails. At one of its ends, one of the rails 10 is cut on an incline as at 12 and is slotted vertically as indicated at 13, the said slot open- 70 ing through the end of the rail and also through its top. A rail section including a tread portion 14 and a web 15 has its web portion extending into the slot 13 and its tread portion normally lying in alinement and flush with the tread of the rail proper. The web 16 of the 75 rail proper is provided with alining slots 17 in its portions which form the walls of the slots 17 and these slots 17 extend in an inclined plane and receive a cross pin 18 which is passed through and secured to the web portion 15 of the rail section above described, the said 80 rail section being in this manner adapted for sliding movement but being prevented from direct vertical movement in such a manner as to disengage from the slot 13. The under face of the tread 14 of the rail section is beveled to correspond to the bevel 12 of the rail 85 10 and as the slots 17 are inclined in a plane parallel to the plane of the bevel 12, the rail section may have a vertical sliding movement toward and from the adjacent rail portion of the intersecting rail 11. A rod 19 is connected with the end of the web portion 15 of the 90 rail section which opposes the intersecting rail section 11 and this rod passes through the web of the rail 11 and into a casing 20 and has engaged upon it, within the casing, a compressible spring 21 it being understood that this spring serves to normally hold the rail section 95 with its tread portion flush with the tread portion of the rail proper 10.

Secured by means of bolts 22 to the inner face of the web 16 of the rail 10 is a plate 23 which plate has its upper edge portion inclined for a portion of its length 100 as indicated at 24 so as to register with the bevel 12 of the rail 10. This plate 23 aids in upholding the rail section and a similar plate 25 is secured by the same bolts 22 to the outer face of the web 16 on the said rail

and has an upwardly directed extension 26 which extends directly beside the outer side face of the tread 14 of the rail section and serves to prevent the section being forced outwardly by the weight of a train. From 5 the foregoing it will be observed that not only is the rail section guided by the extension of its web portion 15 into the slot 13 but also by the extended portion 26 of the plate 25. In order, however, that the wheel flanges may pass the plate 25 and its extension 26, the 10 extension is at one end cut-away as at 27. In order that this rail section may be shifted vertically and in a direction from the intersecting rail 11, there is journaled in the web 16 of the rail 10 a rock shaft 28, this rock shaft being also supported, at its ends, upon bear- 15 ings 29 which are fixed in any suitable manner upon the base plate C. An arm 30 is formed integral with the rock shaft at its middle and projects upwardly and against the adjacent end of the web portion 15 of the rail section it being understood that when the shaft is 20 rocked in one direction this arm will be swung so as to shift the said rail section away from the intersecting rail 11 and thereby permit passage of the flanges of the wheels of the train. A pair of arms 31 are also formed integral with the rock shaft and extend at an angle 25 thereto, one of the said arms 31 being located upon each side of the rail 10. Pivoted as at 32 to the web of the intersecting rail 11 upon opposite sides of the rail 10 and with their ends opposed and directed toward the rail 10 are trips 33 these trips normally having their 30 free ends elevated so as to be struck by the flange of a passing car wheel whereby they will be depressed, and pivoted to the trips adjacent their free ends are rods 34 which rods are also pivoted as at 35 to the free ends of the respective or adjacent arms 31 whereby when the 35 trips are depressed, the shaft 28 will be rocked and the arm 30 swung so as to shift the rail section upon the rail 10. As there are two of the trips 32 the rail section will be shifted by a train passing in either direction. There is of course a stub shaft similar to the shaft 28 40 mounted transversely through the rail 11 and in order to prevent the said stub shaft interfering with the shaft

28 it is preferably located slightly above the plane occupied by the said shaft 28.

What is claimed, is—

1. A railroad crossing comprising intersecting track 45 rails, each of the rails at its point of intersection with one of the other track rails being cut on an incline and provided with a vertical slot which opens through its inclined face, a rail section including a tread portion and a web portion which latter is slidably received in the slot, 50 the tread portion of the rail section being normally flush with the corresponding portion of the rail proper, and the said rail section being shiftable upon the said rail proper, a rock shaft journaled through the web of the rail proper and having formed thereon an arm which works in the 55 slot and abuts the end of the rail section, an arm formed integral with the rock shaft and extending upwardly at an angle therefrom, a trip pivoted to the web of the intersected rail, connection between the trip and the last mentioned arm whereby when the trip is depressed the rock 60 shaft will be rocked and the rail section shifted in a direction away from the intersected rail, and means for holding the said rail section normally against the intersected rail.

2. A railroad crossing comprising intersecting track 65 rails, each of the rails at its point of intersection with one of the other track rails being cut on an incline and provided with a vertical slot which opens through its inclined face, a rail section including a tread portion and a web 70 portion which latter is slidably received in the slot, the tread portion of the rail section being normally flush with the corresponding portion of the rail proper and the said rail section being shiftable upon the said rail proper, a rock shaft journaled through the web of the rail of the rail proper and having formed thereon an arm which works in 75 the slot and abuts the end of the rail section, an arm formed integral with the rock shaft and extending upwardly at an angle therefrom, a trip pivoted to the web of the intersected rail, connection between the trip and the last mentioned arm whereby when the trip is depressed 80 the rock shaft will be rocked and the rail section shifted in a direction away from the intersected rail, a rod connected with the rail section and extending through the web of the intersected rail, and a spring engaged upon the rod, said spring exerting a pull upon the rod to normally 85 hold the rail section against the intersected rail.

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

JAMES W. HELMS.

Witnesses:

JOHN W. ZIEGLER,
HENRY EVELD.