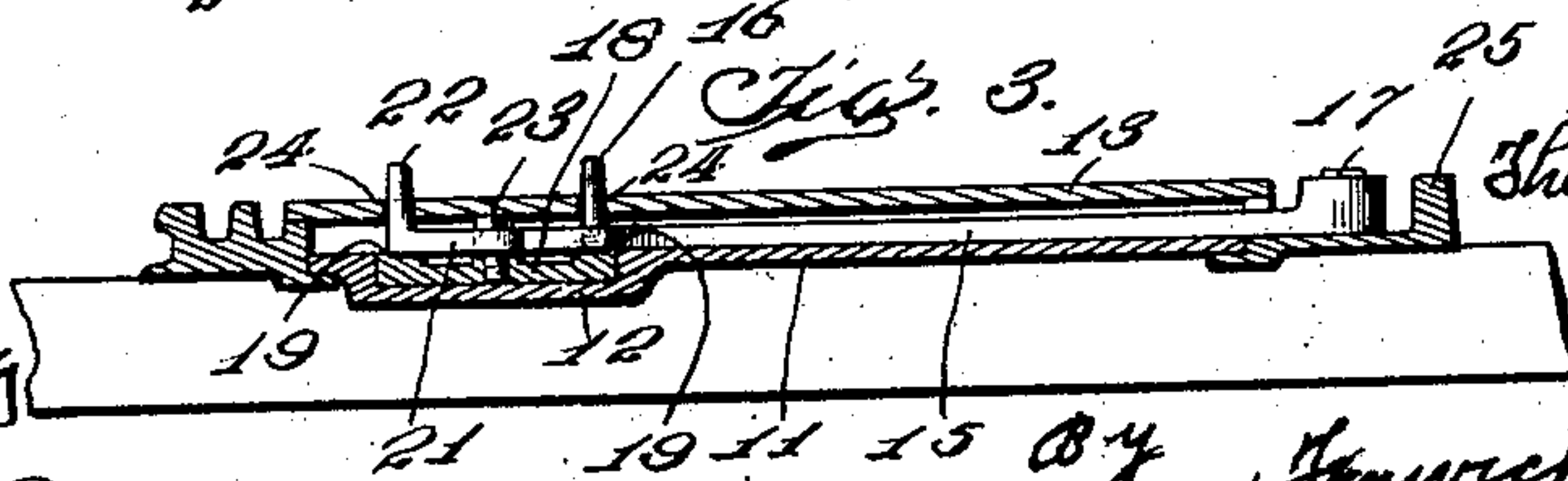
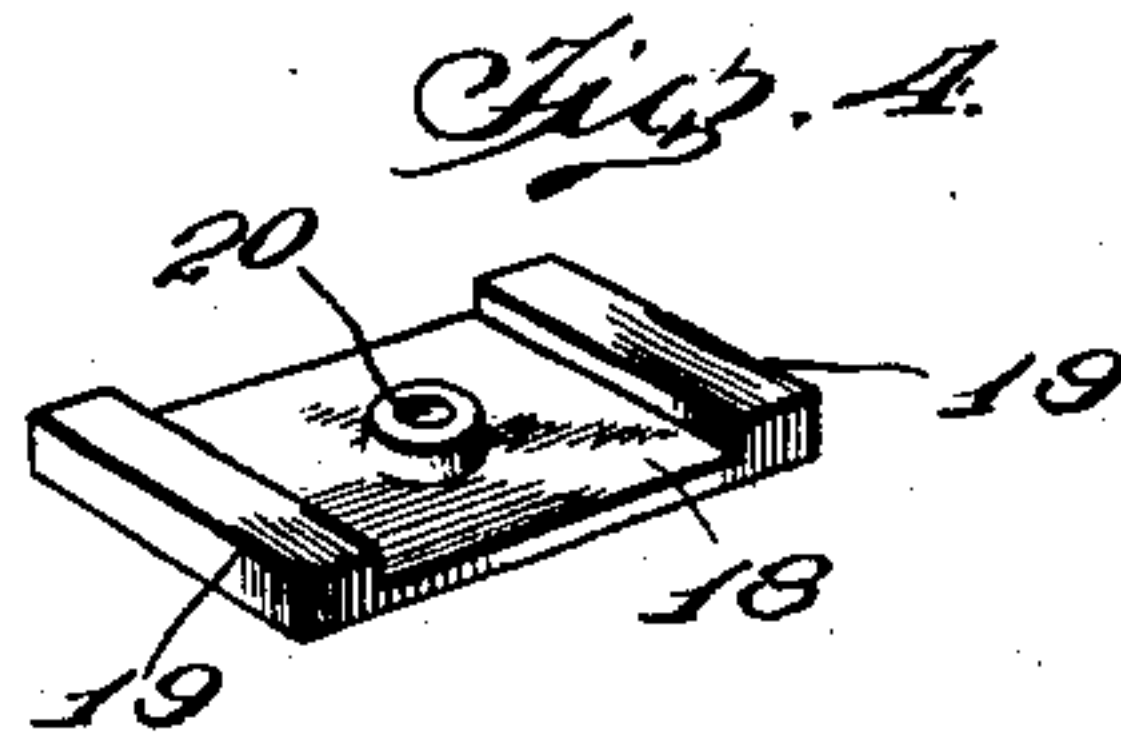
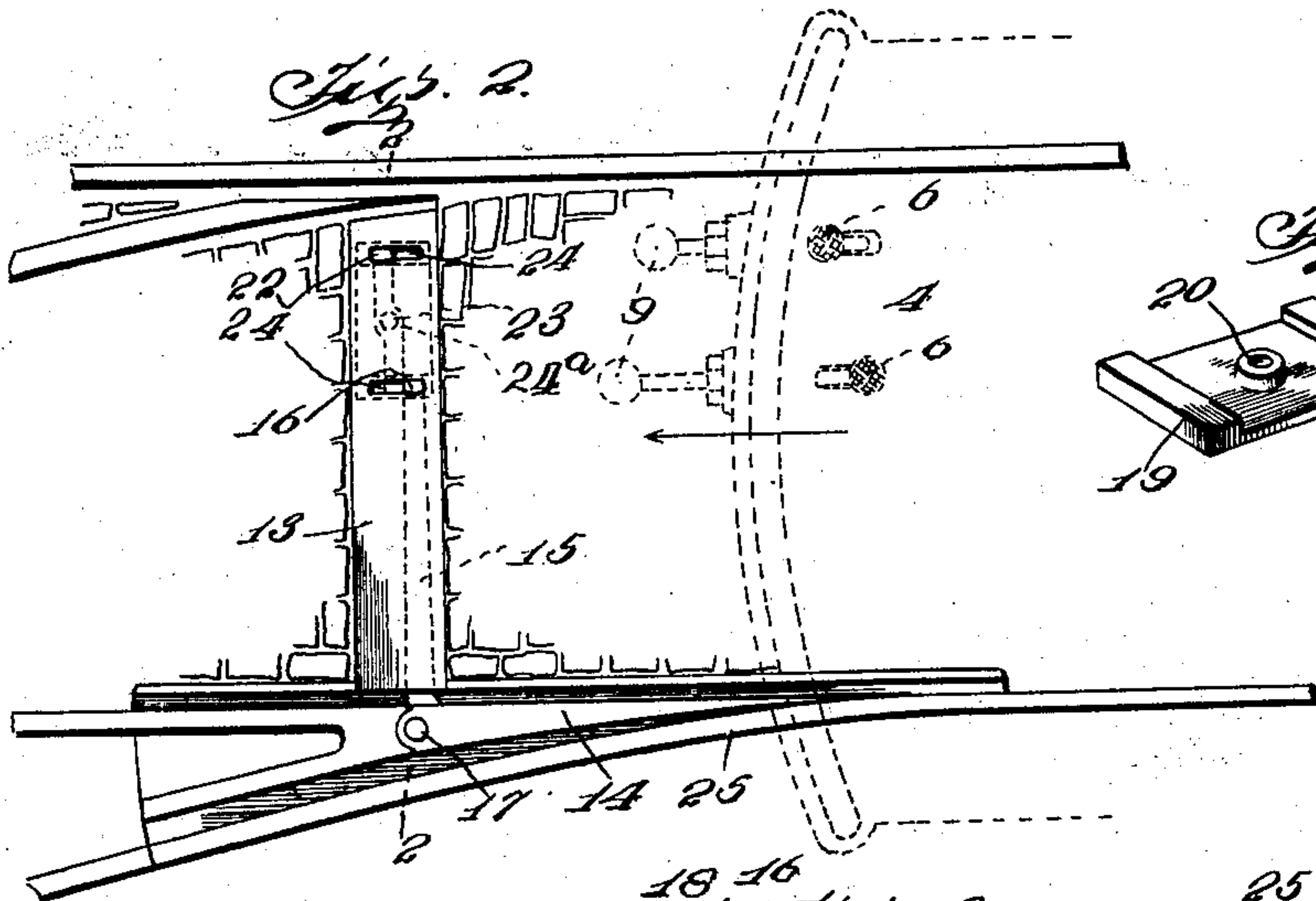
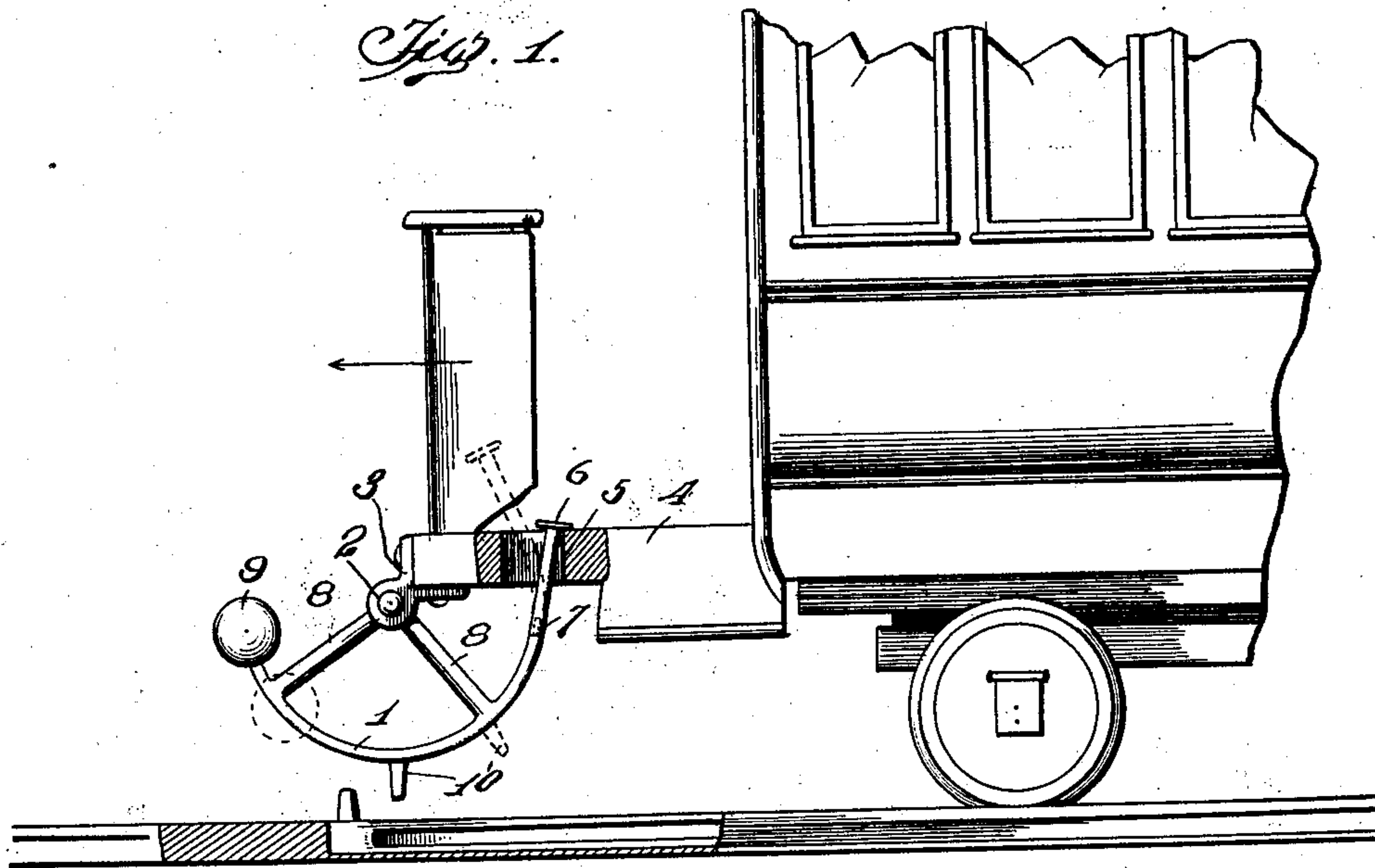


No. 746,170.

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**T. RUNDORFF.**  
**SWITCH OPERATING MECHANISM.**  
APPLICATION FILED SEPT. 26, 1903.

NO MODEL.



Inventor

Theodore Randorff

Witnesses

L. E. Hardy

Edwin C. Crooman

5 By Marion Fenwick Lawrence  
Attorney

Attorney



# UNITED STATES PATENT OFFICE.

THEODORE RUNDORFF, OF BURLINGTON, IOWA.

## SWITCH-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 746,170, dated December 8, 1903.

Application filed September 26, 1903. Serial No. 174,794. (No model.)

*To all whom it may concern:*

Be it known that I, THEODORE RUNDORFF, a citizen of the United States, residing at Burlington, in the county of Des Moines and State of Iowa, have invented certain new and useful Improvements in Switch-Operating Mechanisms; 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.

This invention relates to improvements in switch-operating mechanisms.

The object of the invention is to provide means carried by the car and operated by the motorman or the operator thereon for actuating suitable mechanisms for throwing the switch bar or tongue.

Another object of the invention is to construct a switch mechanism inclosed in a casing below the level of the rails for actuating the switch-bar when it is desired to do so by suitable means carried upon a car.

With these and other objects in view the invention consists in certain novel constructions, combinations, and arrangements of parts, as will be hereinafter fully described and more particularly pointed out in the appended claims.

In the drawings, Figure 1 is a side elevation of one end of a car showing my improved switch-operating mechanism mounted upon the platform thereof, a portion of the top of a step and platform of the car being broken away to more clearly show the operation and construction of the device. Fig. 2 is a plan view of a switch-casing containing the mechanism for controlling the actuation of the switch-point. Fig. 3 is a vertical sectional view of the switch mechanism, taken on lines 2-2, Fig. 2. Fig. 4 is a detail perspective view of the bed-plate.

Like numerals of reference indicate corresponding parts throughout all the figures of the drawings.

This invention relates to a class of switch-operating mechanisms in which a switch-engaging member is carried by the platform of a car so arranged that the motorman of the car may depress the said mechanism by foot so as to operate the switch when desired, the mechanism, as illustrated in the accompanying

drawings, which show a practical form of the device, comprising a pivoted member 1, which is journaled at 2 to a bracket 3, secured to the platform 4 of a car. The pivoted member is preferably made in the form of a sector, one end of which projects upwardly through an elongated slot 5 to a suitable distance above the platform 4, this end of the sector 4 being provided with a removable step or foot-engaging portion 6, which may be reached by the foot of the car-driver or motorman for depressing the sector. The foot-engaging member 6 of the sector 1 is provided with a hollow portion at 7, which is adapted to inclose a tongue formed upon the main portion of the sector 1. It will be apparent that the said member 6 can be easily detached from the sector when it is desired. The sector 1 is preferably weighted, as shown in Fig. 1 of the drawings, by means of a weight 9 secured to the outer end thereof. The sector may be made of a solid piece, if desired; but it is preferably formed with a portion connected with the pivotal point by spokes, as at 8. The sector carries a projection 10 upon its portion, which when the sector is depressed extends to a point in suitable proximity to the track to engage a portion of the switch.

The switch mechanism is mounted within a suitable casing 11, which is provided with a depressed portion 12 and a removable cover 13, which is provided with a plurality of elongated slots 24. The switch bar or tongue 14 is provided with a laterally-extending arm 15, which extends into the casing 11 and is provided at its end with a projection or extension 16. The bar 14 and its arm 15 are pivotally mounted at 17. Within the depressed portion of the casing 11 is removably mounted a bed-plate 18, which is provided with parallel vertically-extending projections or guides and with a centrally-arranged extension 20, said extension being provided with an internally-screw-threaded aperture. A lever member 21, provided with a vertically-extending projection 22, is pivotally mounted, by means of a bolt 23, upon the bed-plate 18. The said bolt 23 is adapted to retain the said lever member 21 in a movable position upon the said bed-plate. The end of the lever-extending arm 15 carrying the projection 16 is adapted to bear upon one of the parallel extensions of



the bed-plate 18. A portion of the lever member 21 provided with the extension 22 is also adapted to bear upon one of the parallel members of said bed-plate, and its opposite end is adapted to normally engage the inner end of the arm 15. The said lever 21 is preferably provided with a twisted portion 24<sup>a</sup>, which causes the extensions on either side of its pivotal point to project therefrom in different transverse planes. The projections or studs 16 and 22 preferably project a short distance above the rails of the track, so that when the foot-bar 6 of the sector 1 is depressed the projection 10 on that particular sector will be brought into the position as shown in Fig. 1—that is, in the path of its corresponding extension 22 or 16, engaging said extension or stud and moving the switch-bar 14 to one side or the other, according to which way it is desired to set the switch. It will be obvious upon examining Fig. 2 of the drawings that each car is provided with a plurality of these operating-sectors, which are adapted to control the actuation of the switch mechanism. One of the sectors mounted upon the car-platform is adapted to engage the projection 16, formed upon the lateral extending arm 15 of the switch-bar 14. Another sector mounted upon the said platform 4 is also adapted to engage the projection 22, formed upon the lever member 21. A car approaching the switch, as shown in dotted lines in Fig. 2, and having to run to one side upon the switch, the motor-man or driver will depress the sector carried by the platform 4 of the car which corresponds to the extension 16, formed upon the laterally-extending arm 15 of the switch-bar 14, so that its projection 10 will engage said extension or stud 16 and pivot said switch-bar upon its pivotal point 17 until the switch-bar is thrown against the inner guard-rail 25. As soon as the switch-bar has been forced thus far by the sector the stud or extension 10 will be removed from engagement therewith if the car continues in motion, or if it is desired to move the said extension from contact with the point extending from the arm 15 the same operation can be produced by the operator removing the pressure which is upon the member 6 of the sector 1, and thereby permit the said weighted member to return to the position shown in dotted lines in Fig. 1. If the switch is opened and it is desired to continue upon the main or straight track, by depressing the corresponding sector, which is adapted to engage the projection 22, secured to the lever-arm 21, the said switch will be closed. It will be apparent upon considering the drawings that when the stud 22 is engaged the lever member 21 will be caused to pivot. As the opposite end normally engages the inner end of the arm or bar 15 the said bar will be moved within the casing 11. It will thus be seen that the position of the switch can be entirely controlled without the operator getting down from the car or even stopping the car.

The mechanism can be applied to street-

cars, railroads, or other places where it is novel or useful to throw a switch without having to dismount from the platform of a car. The casing, and also the mechanism mounted therein, can be easily placed upon any road-bed for the actuation of the switch tongue or bar. The switch mechanism and its actuating member carried by the car is exceedingly simple in construction and efficient in operation.

Although I have described the preferred form of my invention in the foregoing description, I reserve the right to make such modifications and alterations as shall fairly fall within the scope of the invention.

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

1. A switch mechanism comprising a pivoted member journaled upon the platform of a car, a detachable end portion of said member projecting above the platform, a projection carried by said member and arranged in the path of a portion of the switch to be operated upon, and weighted means for normally holding the said projection out of the path of said switch portion.

2. A switch mechanism comprising a pivoted sector, a foot-engaging portion detachably secured to said sector at one end thereof and a weight formed integral with said sector at the opposite end thereof, a switch-bar provided with a laterally-extending arm, auxiliary means engaging said arm and actuated by the sector carried by the car.

3. A switch-operating mechanism comprising a casing, a switch-bar provided with a laterally-extending arm projecting into said casing, a lever projecting into said casing, a lever member pivotally mounted with said casing, and means for pivoting said lever member and thereby actuating the switch-bar.

4. In a device of the character described, the combination of a casing provided with a depressed portion, a switch-bar pivotally mounted adjacent to said casing and provided with a laterally-extending arm projecting into and slidably mounted within said casing, said arm formed with an extension, a lever member provided with an extension pivotally mounted within said casing and normally engaging said arm secured to the switch-bar and means for imparting motion to said lever and the arm of the switch-bar.

5. In a device of the character described, the combination with a casing provided with a depressed portion, a cover removably mounted upon said casing and having a plurality of apertures, a switch-bar secured in an adjacent position to said casing and provided with a laterally-extending arm projecting into the casing, said arm formed integral with the vertically-extending projection which is adapted to project through one of the apertures formed in the cover, a lever member pivotally secured within said casing and provided at one end



with a vertical projection normally extending through an aperture formed in the cover, and means for pivoting the lever member and thereby pivoting the arm of the switch-bar.

5 6. In a device of the character described, the combination of a casing provided with a removable cover, a pivoted arm mounted within said casing and secured to a switch-bar, a bed-plate mounted within said casing, a lever member pivotally mounted within said casing, a projection extending from said lever member, and means for pivoting the said lever member and imparting motion to the arm mounted within the casing of the switch-bar.

15 7. A switch mechanism comprising a casing provided with a cover, a bed-plate secured therein comprising a base, parallel extensions secured thereto, a central portion formed integral with said base, a twisted lever pivotally mounted upon said bed-plate, a switch-bar formed integral with a laterally-extending arm mounted in a position adjacent to said casing, said laterally-extending arm projecting into said casing and normally engaging the lever member mounted therein, and means for actuating said arm carried by the switch-bar or the lever member.

8. A switch-operating mechanism comprising a switch-bar provided with a laterally-extending arm, a projection extending in a vertical position secured to said arm, a lever member provided with a vertical extension normally engaging said arm, and means for moving said lever or the arm carried by the switch-bar.

9. A switch-operating mechanism comprising a switch-bar formed integral with an arm,

a casing secured in an adjacent position to said switch-bar and partly inclosing said arm, a bed-plate secured within said casing, said bed-plate provided with a parallel extension, a projection formed upon the inner end of said arm and normally engaging one of said projections formed upon the bed-plate, a lever member pivotally mounted upon said bed-plate, a projection formed integral with said lever member at one end, said projection mounted upon one of the parallel extensions of the bed-plate, at its opposite end mounted upon a parallel projection of the bed-plate carrying the projection formed upon the arm of the switch-bar, and independent means adapted to actuate the said lever member or arm for imparting motion thereto.

10. A switch-operating mechanism comprising a casing, a bed-plate mounted therein, a lever detachably secured to said bed-plate, said lever provided with a vertical extension at one end thereof, a switch-bar secured in an adjacent position to said casing and formed integral with a laterally-extending arm, said arm slidably mounted within said casing, and provided with an extension at its inner end, said end normally engaged by the lever member, and means for engaging the projections formed upon the lever member or the arm carried by the switch-bar for pivotally adjusting the said switch-bar.

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

THEODORE RUNDORFF.

Witnesses:

VERA SEWING,  
M. J. MERCER.