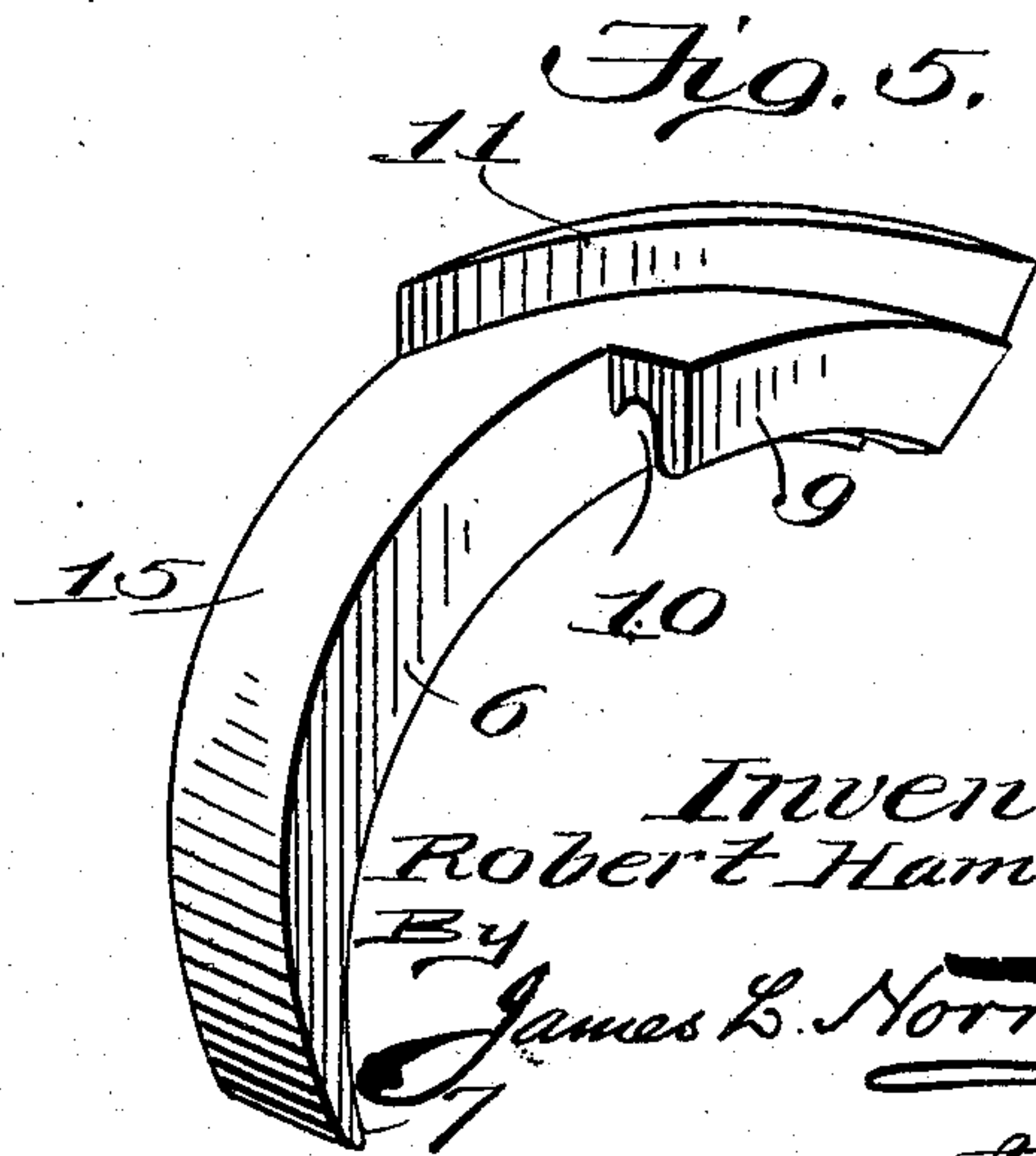
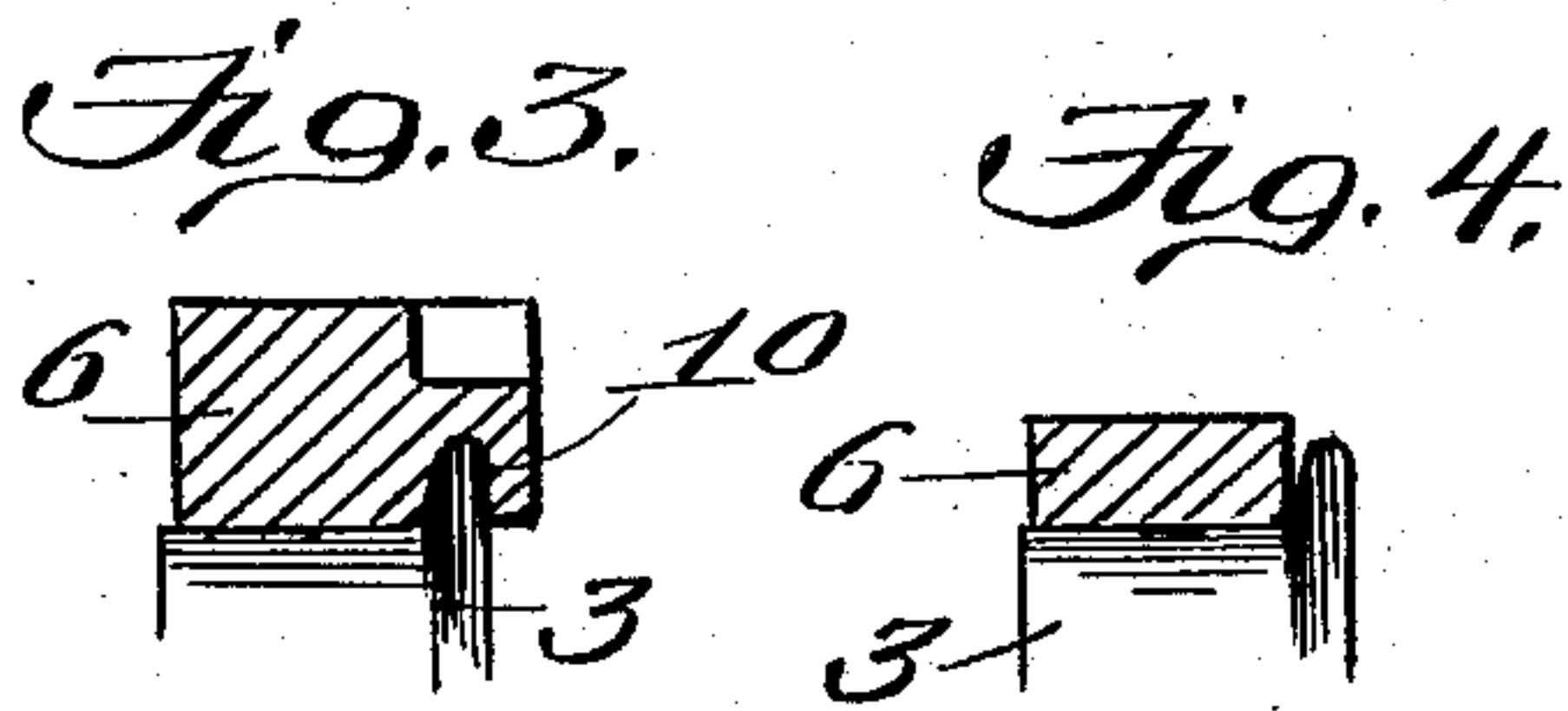
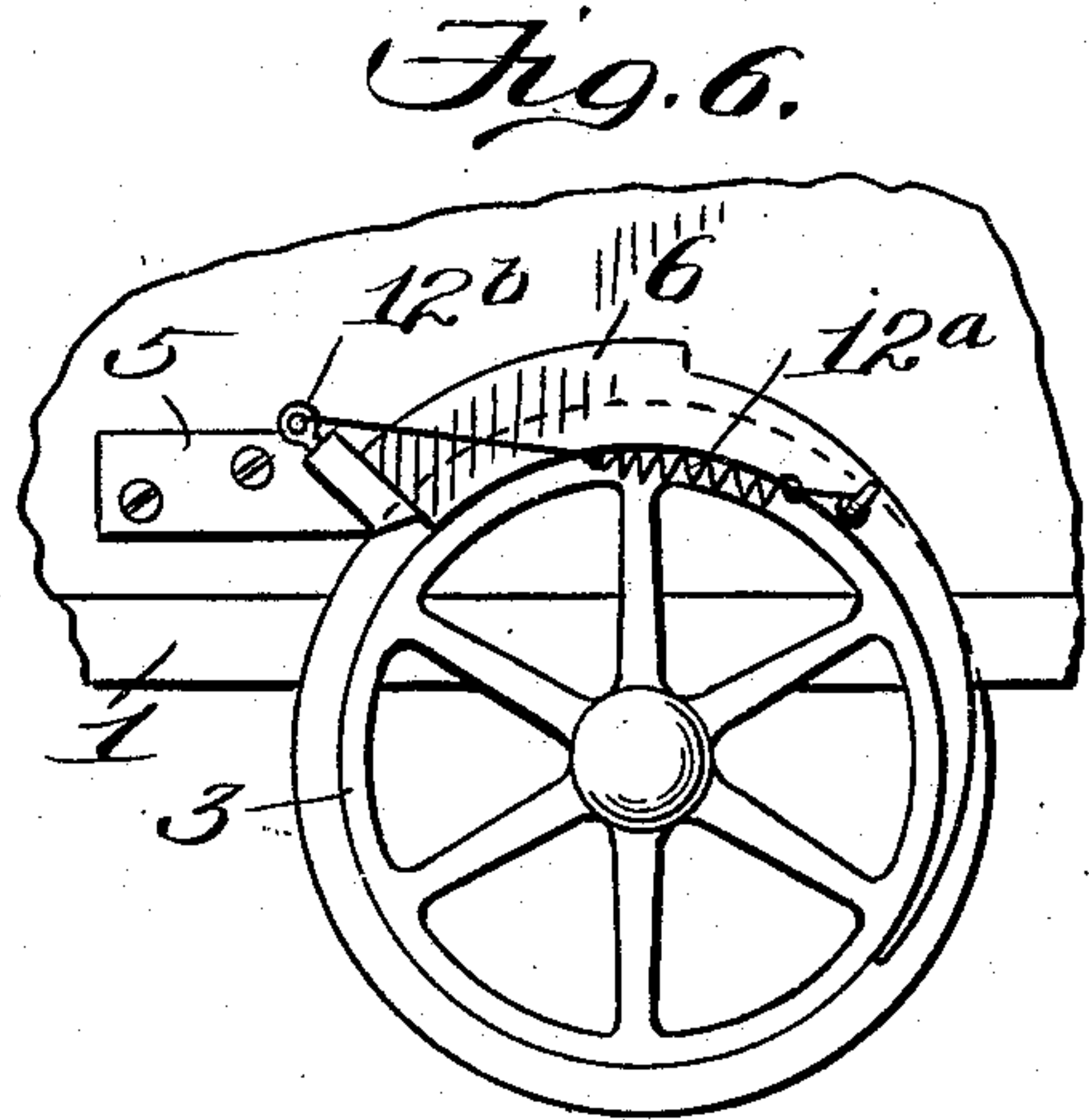
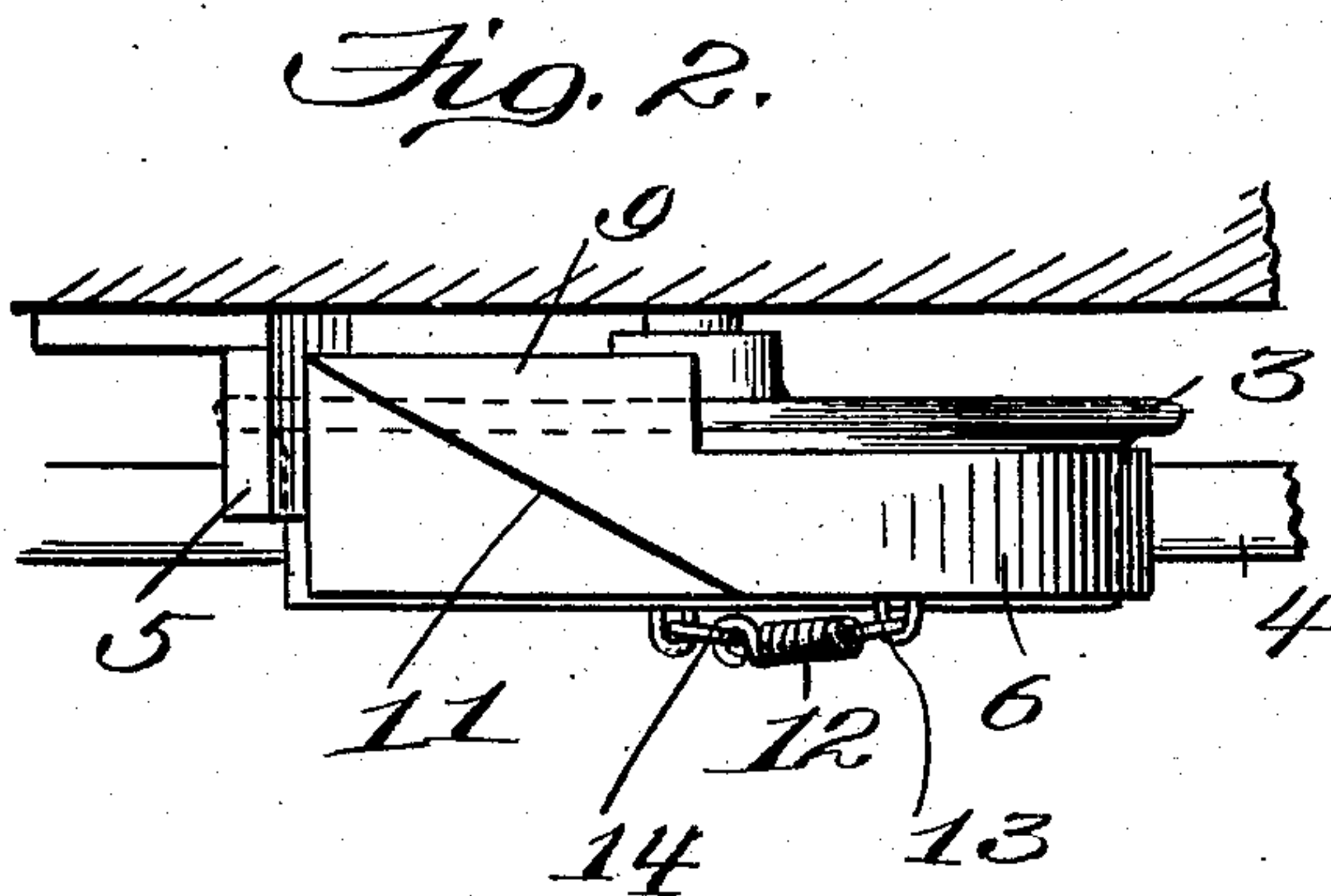
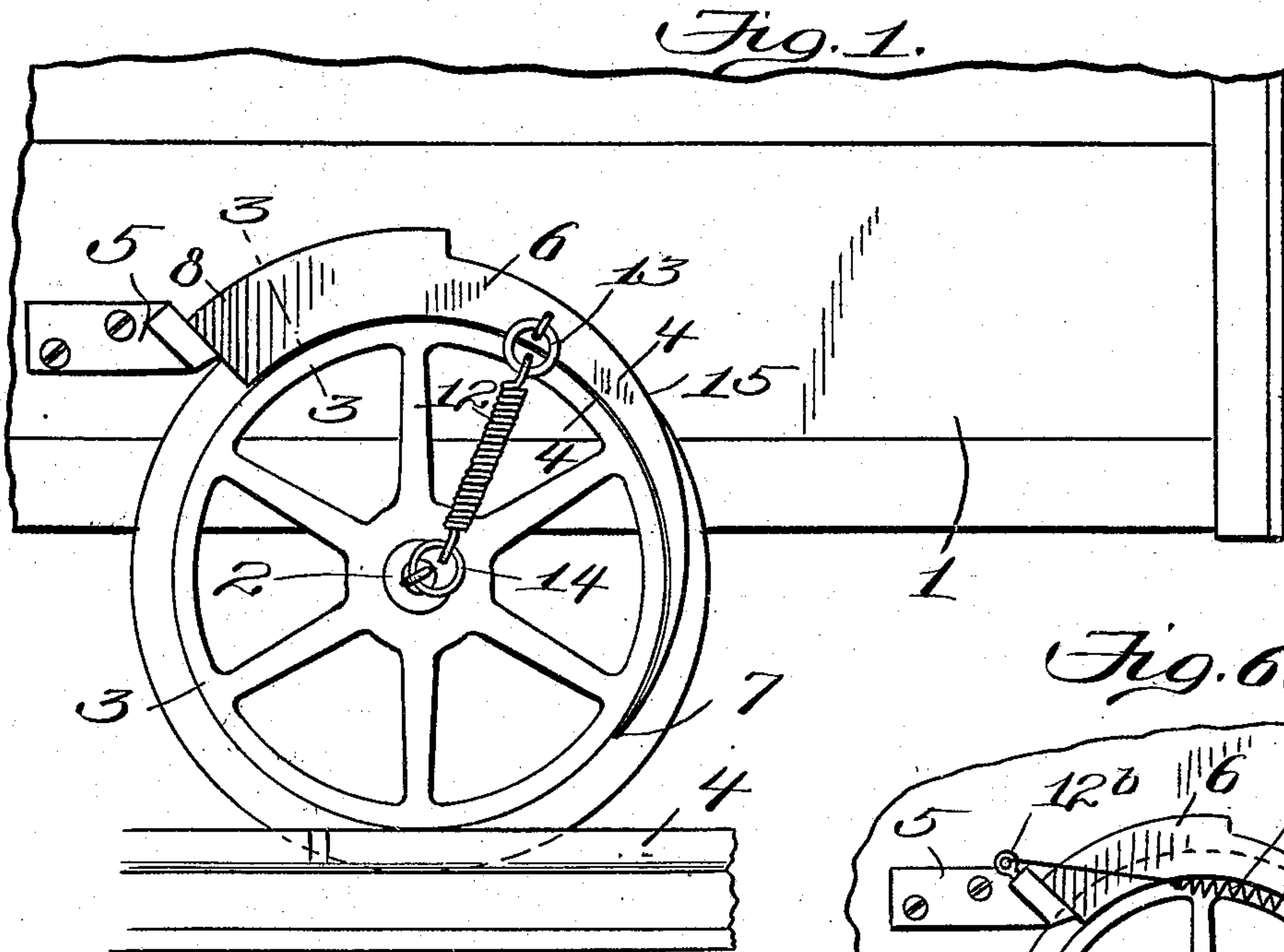


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DERAILER.

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911,021.

Patented Jan. 26, 1909.



Witnesses:
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UNITED STATES PATENT OFFICE.

ROBERT HAMILTON, OF BIRMINGHAM, ALABAMA.

DERAILER.

No. 911,021.

Specification of Letters Patent.

Patented Jan. 26, 1909.

Application filed July 20, 1908. Serial No. 444,372.

To all whom it may concern:

Be it known that I, ROBERT HAMILTON, a citizen of the United States, residing at Birmingham, in the county of Jefferson and State of Alabama, have invented new and useful Improvements in Derailers, of which the following is a specification.

This invention relates to a car derailer of that type having an automatic action and associated with a car wheel. In the use of the term "car" it will be understood that not only the device generally known under the term "car" is contemplated, but any equivalent vehicle or any wheeled part that is capable of traveling along rails or similar or substantially analogous guiding means is intended to be included in such term.

The improved derailer or derailing member has such individual structure and is so disposed in opposite relation to the car wheel as to permit free or unobstructed forward movement of the vehicle or car, but will positively and automatically derail the vehicle on backward movement thereof or when such car or vehicle has been accidentally retracted a certain or predetermined distance.

The derailer involving the present invention is normally held out of contact with the rail or guiding means for the wheel of the vehicle and may be used on a single vehicle, but its prime utility is evidenced when it is employed in conjunction with a train or, as it is sometimes known, "trip" of mine cars. In making up a train of such cars they are frequently connected by ropes or other coupling means and cases are known where the train, while on an incline, becomes accidentally detached from the propulsive medium by breakage of the ropes or coupling means. In this contingency the train will start down an incline and without some obstructing means accident will inevitably follow.

The device constituting the present invention will obstruct the possibility of accident under the conditions just mentioned and is reliable in its operation in view of the fact that it will be automatically thrown into derailing position on the backward movement of the car. It is preferred that the derailer or derailing member be applied in cooperative relation with the rear car of a train of mine cars, though if desired it may be applied to a number of cars of each train.

A simple and effective form of embodiment of the invention is disclosed in the ac-

companying drawing, and in the latter: Figure 1 is a side elevation of a portion of the car shown equipped with a derailer or derailing member embodying the features of the invention. Fig. 2 is a top plan view of the car wheel and a portion of the car side shown in section and illustrating the derailer or derailing member in position over the wheel. Fig. 3 is a transverse vertical section on the line 3—3, Fig. 1. Fig. 4 is a transverse vertical section on the line 4—4, Fig. 1. Fig. 5 is a detail perspective view of the derailer or derailing member. Fig. 6 is a detail elevation of a portion of the car body and the derailer showing a slight modification in the structure.

Similar characters of reference are employed to indicate corresponding parts in the several views.

The numeral 1 designates a car of any preferred form or may be any other type of vehicle disposed on an axle 2 having flanged wheels 3 to cooperate with track rails or guide means 4. On the side of the body of the car 1 in advance of the upper portion of the wheel 3 an angular stop device 5 is secured to cooperate with the derailer or derailing member.

The derailing member or attachment 6 has an elongated curved tapering body, or a body of practical curved wedge shape gradually increasing in thickness from a reduced terminal 7 to a head 8 and normally supported in loose contact over the upper portion of the car wheel and also depending over a part of the rear of the said wheel, as clearly shown by Fig. 1. The derailer or derailing member is in effect a cam loosely supported in relation to the car wheel and the head 8 has an inner extension 9 with a groove 10 extending completely therethrough to fit over the flange of the car wheel, the said grooved extension preventing the derailer from having lateral movement in relation to the car wheel and thereby always maintaining the attachment in position for accurate engagement with the rail over which the wheel travels. The head 8 also has a derailing portion or obliquely disposed rib 11 which operates to move the car or vehicle sidewise during the derailing operation.

The derailer or derailing member is loosely and removably connected to the outer end of the axle 2 through the medium of a spring or yielding coupling 12 attached at opposite extremities respectively to an eye or ring 13 se-

cured to the derailer and to an eye or ring 14 movably connected to the end of the axle 2. This spring 12 performs an important function when the derailer or derailing member is thrown down in contact with the rail 4, particularly when the car wheel rides over the increased dimensions or head portion 8 of the derailer, and under the latter conditions the said spring is expanded and draws the derailer closely against the tread of the wheel and insures a retention of the attachment in connection with the car wheel and also encourages an accurate registration of the outer working surface as 15 with the rail tread or head. The retention of the derailer or derailing member in connection with the car wheel is also insured by reason of the grooved extension 9 fitting over the flange of the wheel. The advantage of making the derailer or derailing member detachable is the convenience ensuing under such conditions in applying it to opposite ends of a car or vehicle or in coöperative relation with the wheels at opposite extremities of a car.

The derailer or derailing member is normally in the position shown by Fig. 1, the head 8 forming a weighted extremity which is terminally in contact with the angular stop 5 and to one side of the vertical diameter of the wheel, and owing to the preponderance of weight to one side of the vertical diameter of the wheel, the derailer will be obstructed in having too loose application or in tending to fall back and downwardly to the rail when it is undesirable that it should assume such position. In the event that the train or a car equipped with the derailer becomes detached on an incline, the sudden rearward movement throws the derailer or derailing member over in a rearward direction and brings the working surface 15 in contact with the rail 4. The wheel rides over the curved surface of the derailer adjacent to the tread thereof for a short distance and at the same time the said wheel and body of the vehicle are lifted, and when the sidewise shifting portion or oblique rib 11 reaches the proper point under the car wheel the latter, together with the car body, will be laterally displaced and the car thrown from the track rail and almost immediately cease to move owing to the obstruction set up to the free travel of the car wheels and thereby a train will be brought to a standstill.

In the modified construction shown by Fig. 6 the spring 12^a is connected at one end to the derailing member and at the opposite end to an eye 12^b at the top of the stop device 5. The spring as shown by Figs. 1 and 2 serves as a coupling means for the derailing member when the latter is applied to an open hub wheel to which the end of the axle is exposed. In Fig. 6 the spring is shown associated with the derailing member as a coupling means when said member is associated with a wheel having a closed hub. Either one or

both of the rear wheels of a car may be equipped with the derailer, and the most effective feature is the reliability of the derailing member in causing the car to swing bodily sidewise and wholly carry the rear wheels or those lowermost on an incline out of operative engagement with respect to the rails, and thus avert serious accidents and injury to the rolling stock.

The present derailer or derailing member and the attaching means specified constitute an improvement on the derailer disclosed by my Patent 888,892, dated May 26, 1908, the essential difference being that the present derailer or derailing member has an automatic gravitating action and is simplified in its application in that it is unnecessary to apply a supporting shaft or analogous device to the car for holding the same.

Having thus described the invention, what is claimed as new, is:

1. The combination of a railway vehicle and a wheel engaging gravitating derailing member thereon serving to permit free forward movement of said vehicle and to positively derail said vehicle on the backward movement thereof.
2. The combination of a railway vehicle and a rotary wheel engaging gravitating derailing member connected to said vehicle and serving to permit free forward movement of the vehicle and to positively derail the same on backward movement of said vehicle.
3. The combination of a railway vehicle and a derailing member normally held above and over the vehicle wheel and having a gravitating movement, the member being adapted to engage a rail on which said vehicle travels and serving to normally permit free forward movement of the vehicle and to automatically and positively derail said vehicle on the backward movement thereof.
4. The combination of a vehicle and a wheel engaging derailing member having a gravitating movement and connected to said vehicle and adapted to automatically lift the vehicle on the movement thereof in a certain direction.
5. The combination of a vehicle and a curved wedge shaped derailing member gravitatingly disposed over and movable around the vehicle wheel and adapted to lift the wheel and vehicle on the movement of the latter in a certain direction.
6. The combination of a vehicle and a rotary derailing member having a gravitating movement over and around the vehicle wheel and adapted to lift and then move the wheel and vehicle sidewise during the traveling movements of said wheel and vehicle.
7. The combination of a vehicle having an axle with a wheel thereon and a derailing member gravitatingly mounted over and movable around the wheel and loosely con-

connected to the axle and having a movement to first elevate the wheel and vehicle and then to shift the latter sidewise during traveling movement thereof.

5 8. The combination of a vehicle having a stop means thereon, and a derailing member gravitatingly mounted on the vehicle over and in operative relation to the vehicle wheel.

10 9. The combination of a vehicle having an axle with wheels thereon, and a derailing member gravitatingly mounted with relation to the wheels and removably and loosely connected to the axle and having a movement to first elevate the vehicle and then to shift
15 the vehicle sidewise during the traveling movement of the vehicle.

20 10. The combination of a vehicle having an axle, a wheel on the axle, and a derailing cam gravitatingly mounted over and movable around the wheel.

11. The combination of a vehicle having an axle, a wheel on the axle, a derailing cam

rotatably and gravitatingly supported over and movable around the wheel, and a resilient connection between the cam and the axle. 25

12. As an article of manufacture, a curved wedge-shaped wheel engaging derailing cam the working surface of which is provided with a derailing portion.

13. As an article of manufacture, a curved 30 wedge-shaped wheel engaging derailing cam the working surface of which is provided with an obliquely disposed rib.

14. The combination with a rotatable car wheel and axle, of a derailing member mov- 35 ably supported over and gravitatingly shiftable under the wheel.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

ROBERT HAMILTON.

Witnesses:

W. E. MATHEWS,
THOS. G. FEAR.