

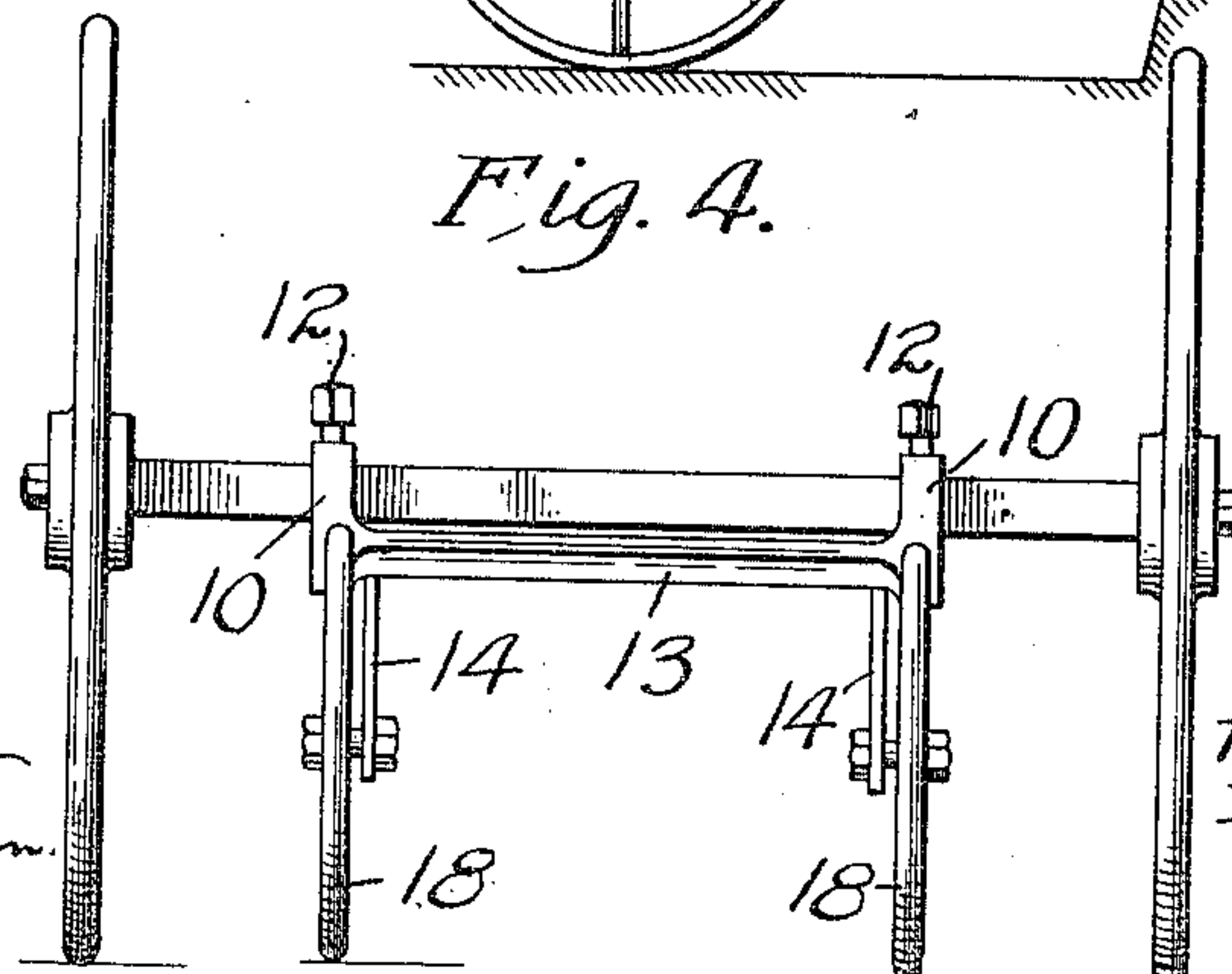
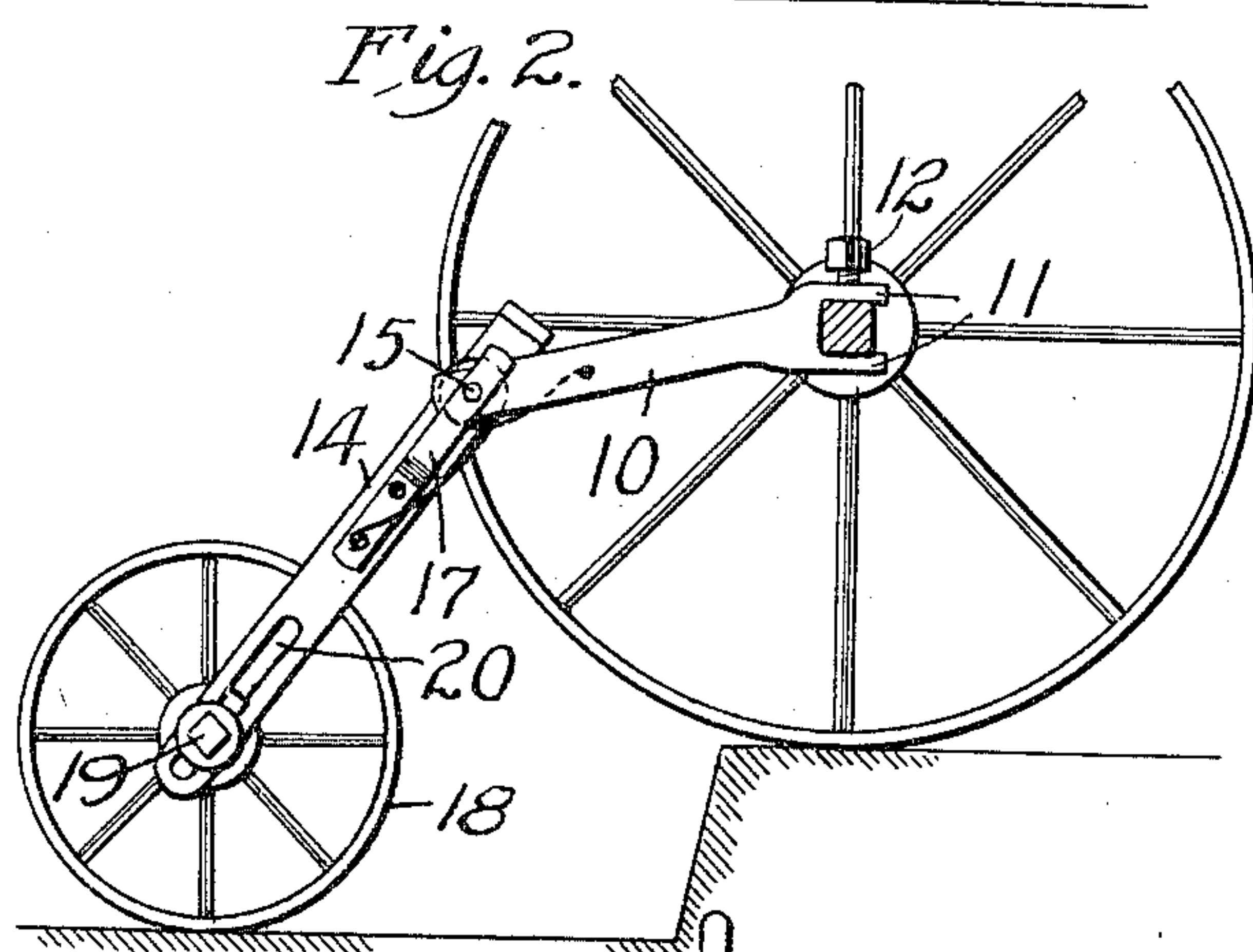
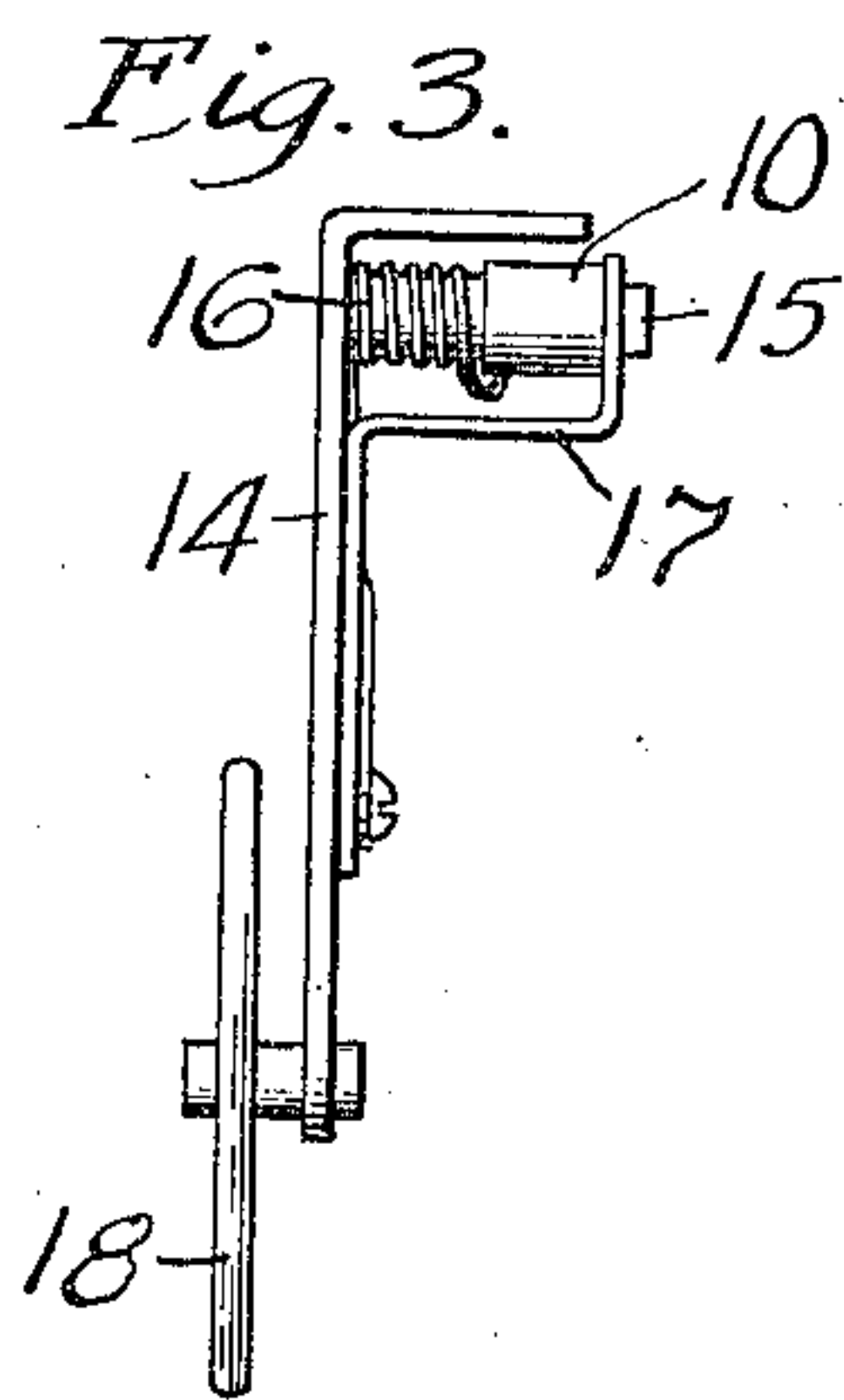
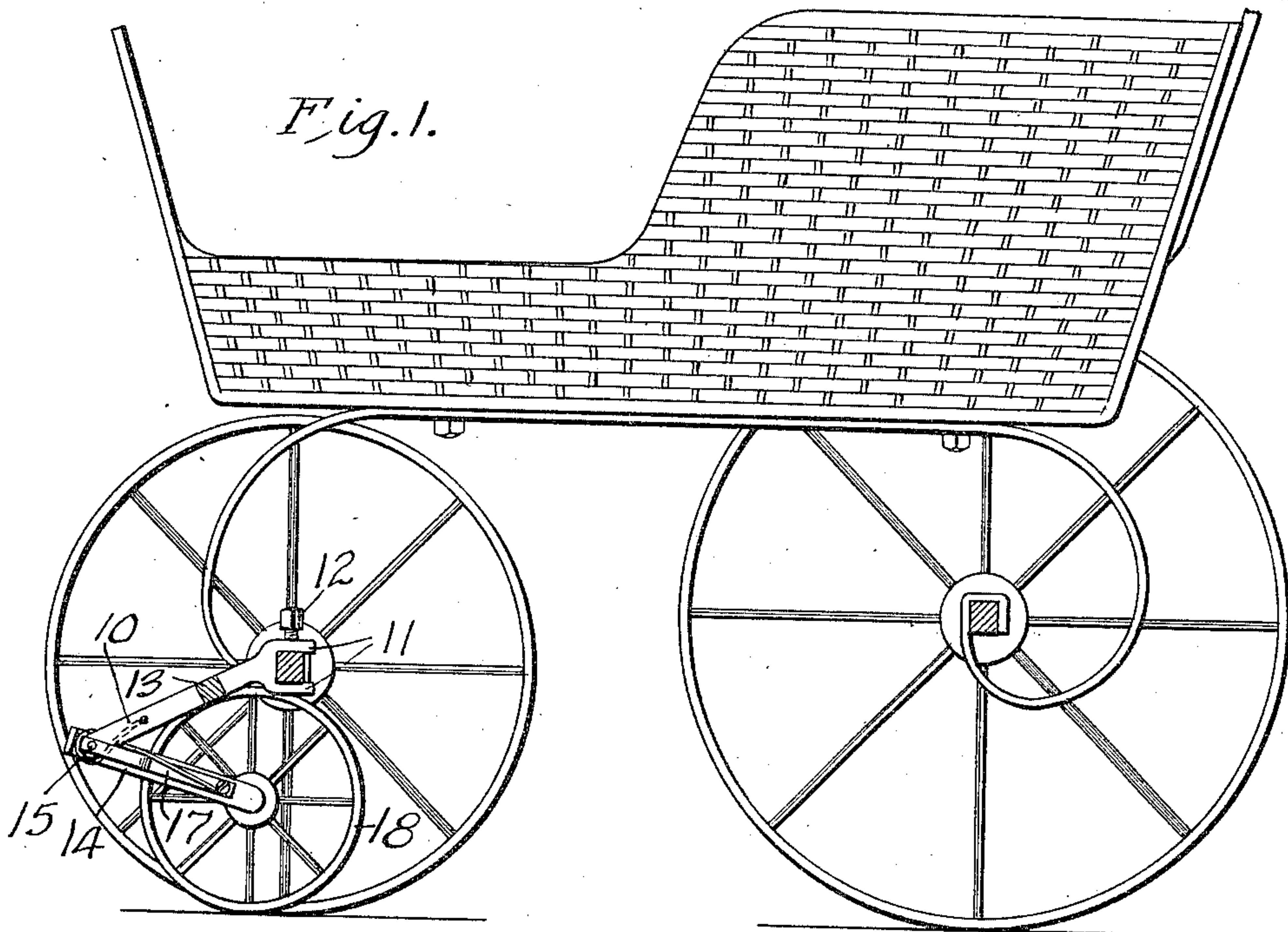
R. L. HERMAN & L. L. LOEB.
SHOCK REDUCER.

APPLICATION FILED DEC. 9, 1909.

998,771.

Patented July 25, 1911

2 SHEETS—SHEET 1.



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Fig. 5.

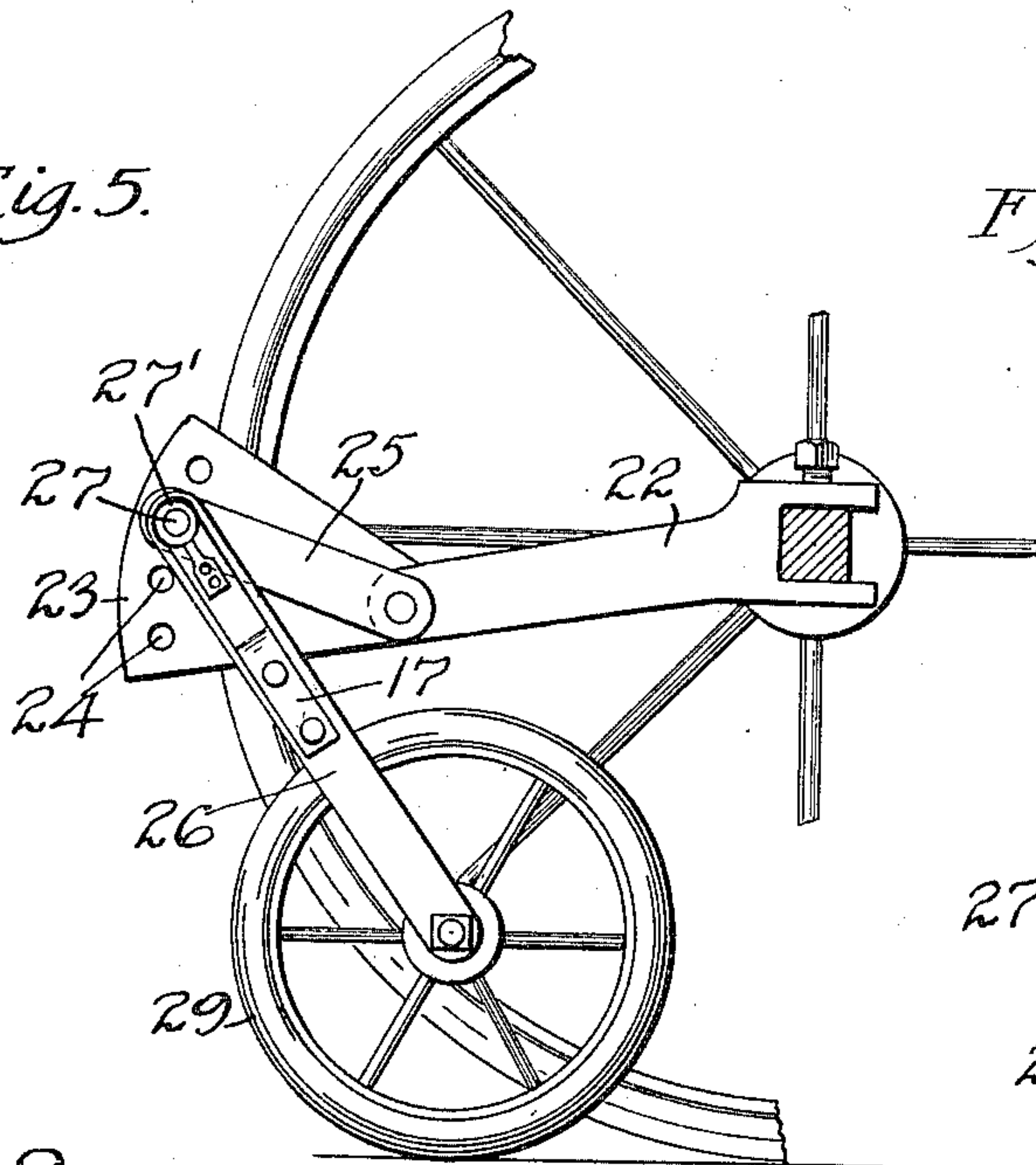


Fig. 6.

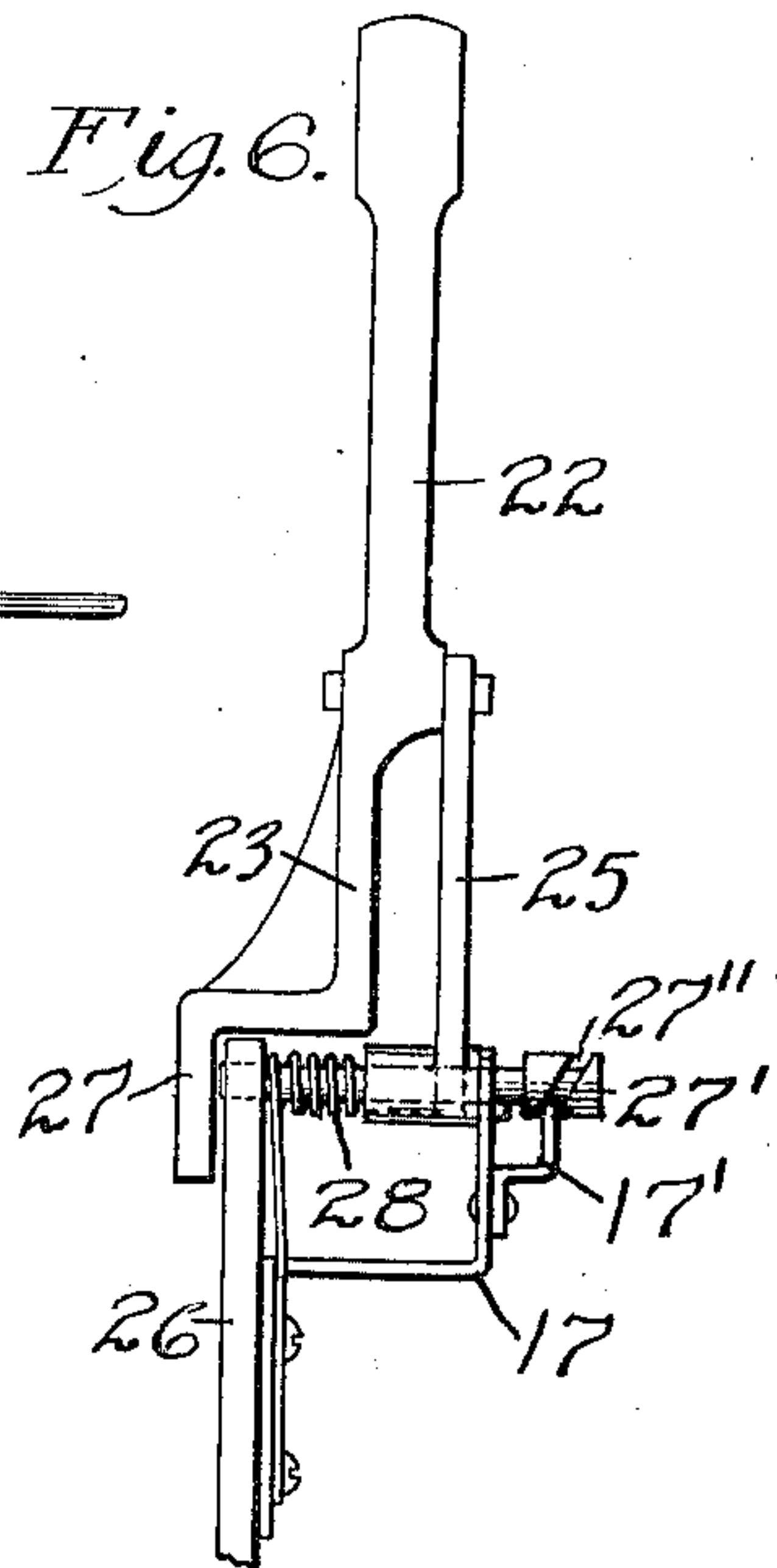


Fig. 9.

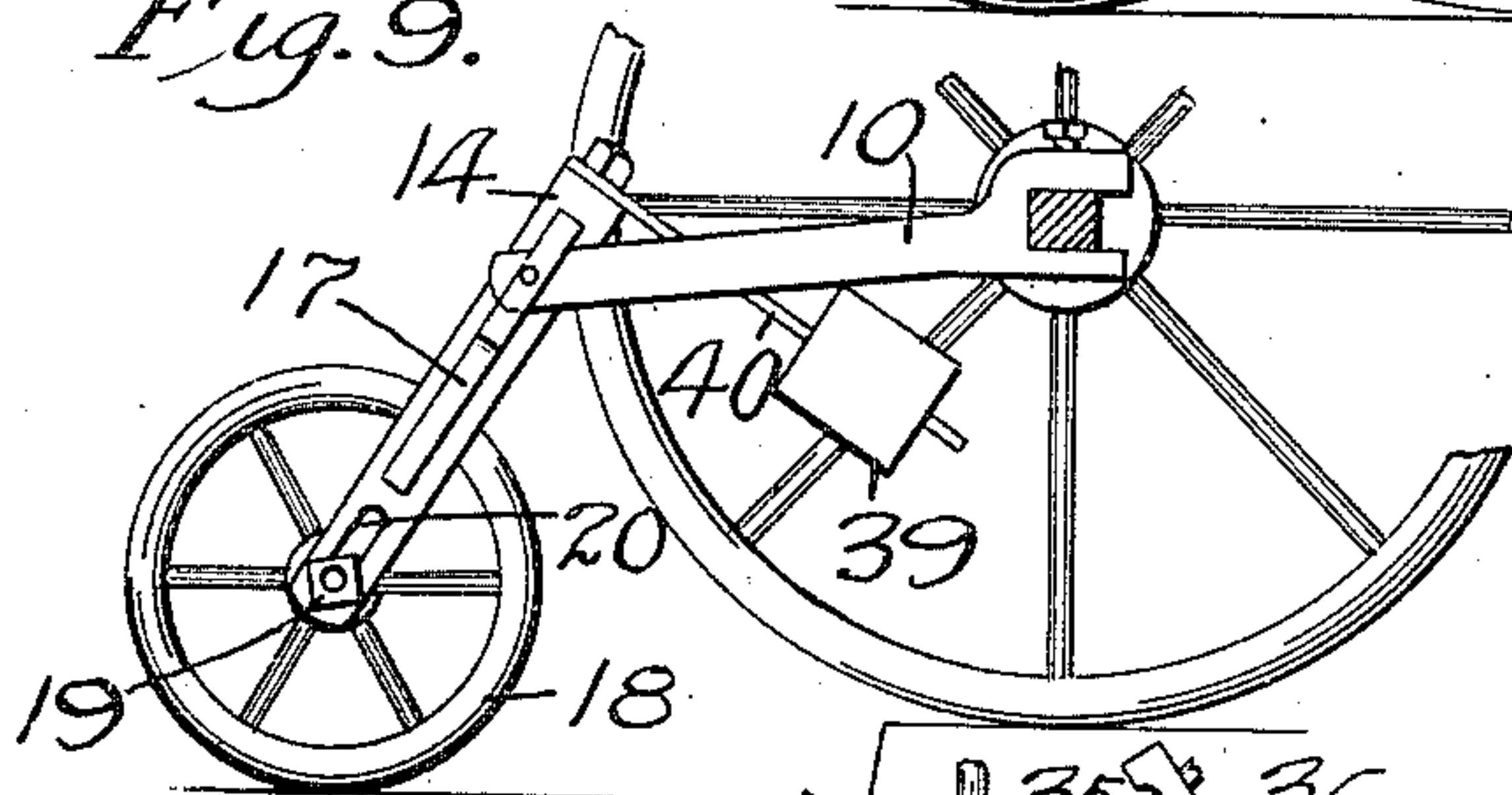


Fig. 8.

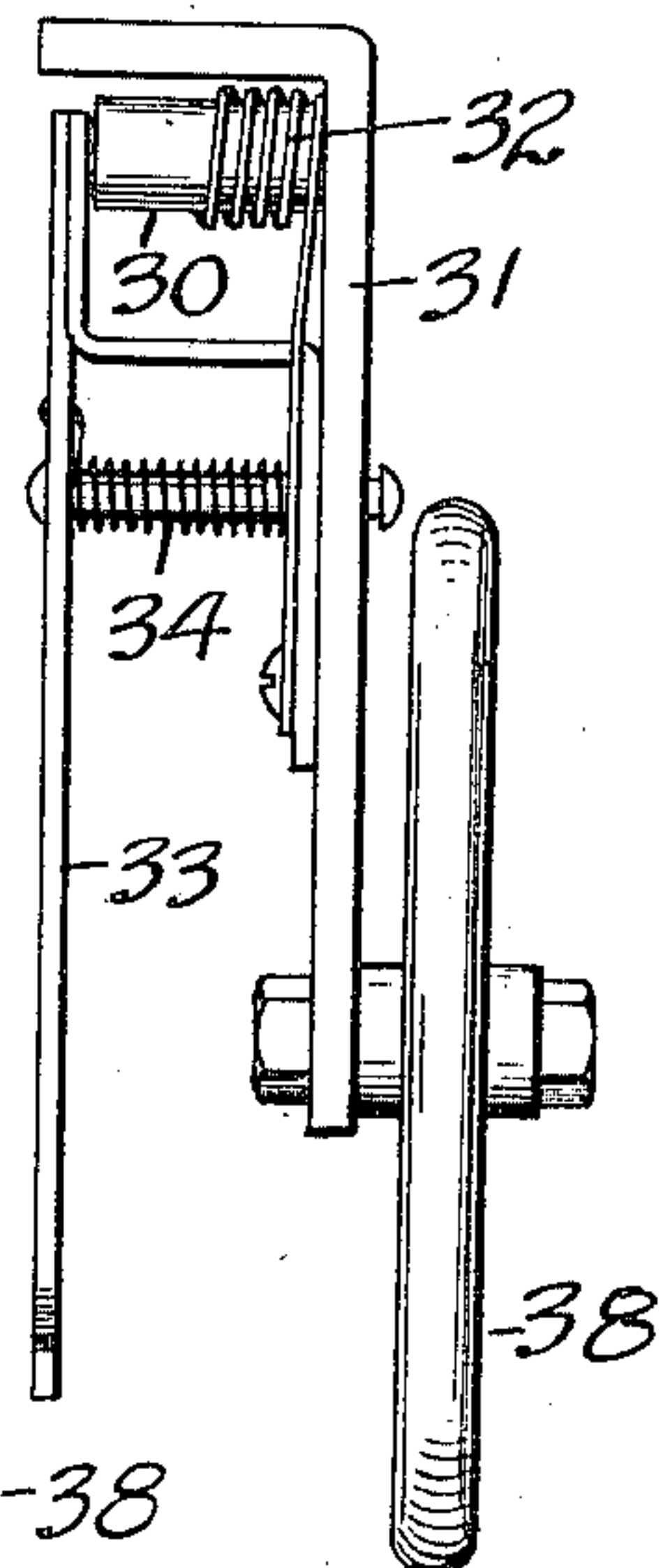
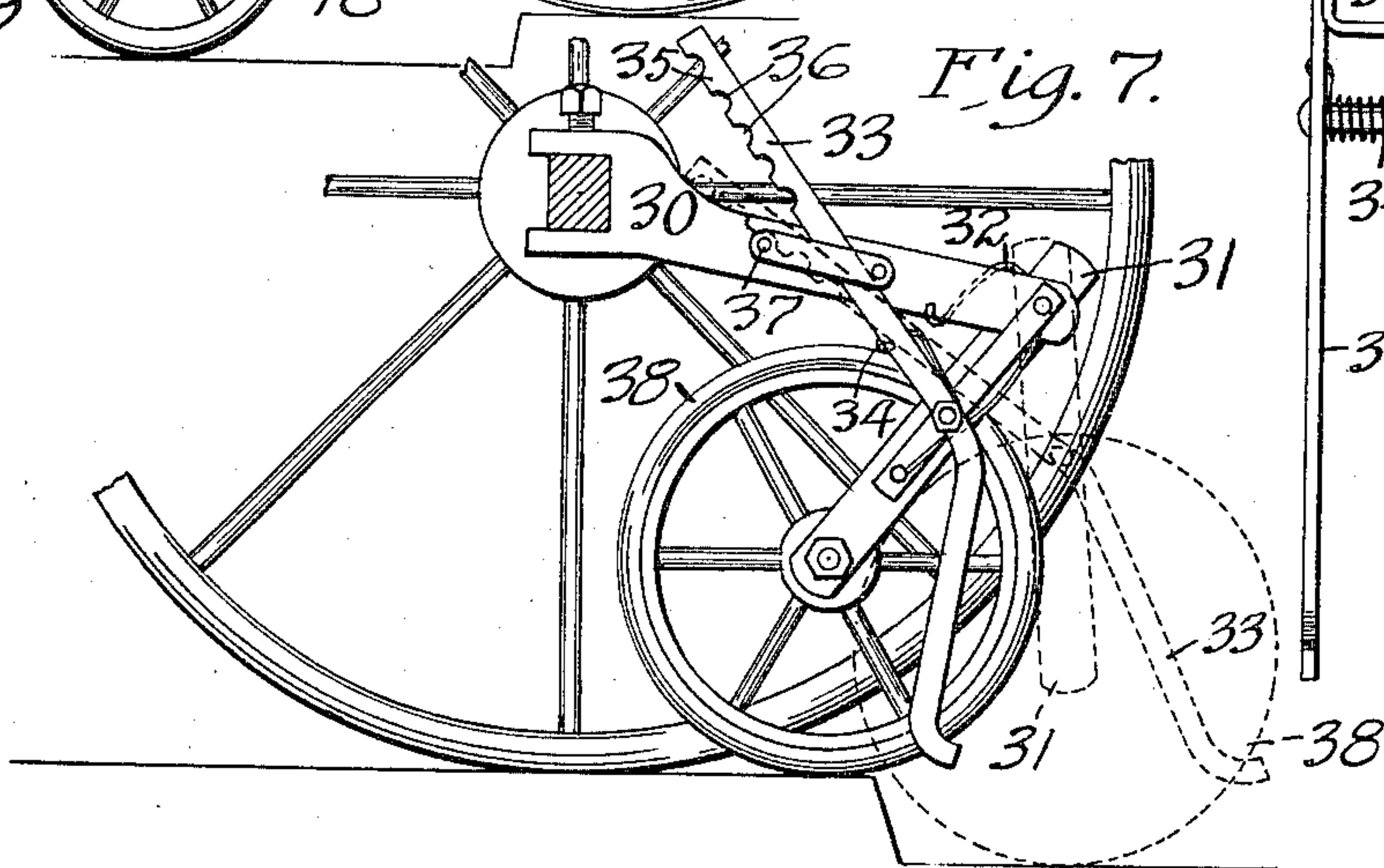


Fig. 7.



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UNITED STATES PATENT OFFICE.

RAYMOND L. HERMAN AND LOUIS L. LOEB, OF NEW YORK, N. Y.

SHOCK-REDUCER.

998,771.

Specification of Letters Patent.

Patented July 25, 1911.

Application filed December 9, 1909. Serial No. 532,284.

To all whom it may concern:

Be it known that we, RAYMOND L. HERMAN and LOUIS L. LOEB, citizens of the United States, residing at New York, New York county, New York State, have invented certain new and useful Improvements in Shock-Reducers, of which the following is a specification.

This invention relates to jar reducers for vehicles and is especially applicable to baby carriages, and it consists of a wheel or wheels which may be attached to the axles of the carriage or to the body or to any part of the body so as to have the wheel or wheels of the attachment, when at rest, in a position slightly in front of either the front wheels of the carriage or the rear wheels of the carriage or in front of both front and rear wheels of the carriage as it may be desired to act on the front or rear wheels, or both.

This device is especially serviceable in crossing the streets as, on leaving the side-walks, the wheel on the attachment becomes released when leaving the curb and the attachment is immediately thrown downward and forward resting on the street so that when the front wheels of the carriage leave the side-walk the carriage rides on the front attachment and goes on the same level as it had on the side-walk and prevents the sudden drop of the front wheels of the carriage into the gutter. The attachment on the rear part of the buggy acts the same way. When reaching the other side of the street the attachment on the front part of the buggy strikes the curb and is pushed back into its normal position by which it allows the front wheels of the carriage to strike the side-walk and ride on its proper level on the said front wheels. The attachment on the rear of the buggy operates the same way when striking the curb.

These and other objects and details of the invention are more fully described in the following specification, set forth in the claims and illustrated in the accompanying drawings, where:

Figure 1 is an elevation of a baby carriage partly in section. Fig. 2 is a detail view showing the carriage about to cross a street and the reducer sprung forward to support it. Fig. 3 is a front view of one of the reducer wheels and its carrier lever. Fig. 4 is a front view of the forward axle with the reducer applied thereto. Figs. 5

and 6 are views of a modified form of reducer showing the means for automatically adjusting the same. Figs. 7 and 8 illustrate another modified form of reducer. Fig. 9 is a view showing how a weight may be substituted for the spring to operate the reducer.

The device is made separate from a carriage and applied to either or both the front or rear axle of same but in practice it has been found preferable, if attached to only one axle, to attach it to the front axle for the purposes hereafter specified.

The reducer comprises an arm or a pair of arms having their rear ends forked as at 11 to fit over the axle of the carriage and be secured thereto by means of the bolt 12, when two arms are used as shown in Fig. 4 they are united by a cross piece 13, thus forming a solid and compact frame secured to the axle of the carriage.

Each of the arms carries at its outer end the lever 14 pivoted thereto by means of the pin 15 around which is coiled a spring one end of which bears against the lever 14 while the other is secured to the arm 10, the pin 15 being secured at one end to the lever 14 and at its other end to a clip 17 carried by the lever, the lever and clip forming bearings, and between the two bearings, the arm and the spring are located. In the lower end of the lever 14 is journaled the wheel 18 which is smaller than the wheels of the carriage and of sufficient size to permit of its location below the axle upon which it is located and, as shown in Fig. 2, the wheel may be made adjustable by having its stud 19 passed through a slot 20 at the lower end of the lever so that it can be located at any point in the lower end of the lever and in this way the length of drop may be regulated.

When the carriage approaches the curb stone of a side-walk, and just before the forward wheels leave the side-walk, the reducer wheels 18 being slightly in advance of the wheels of the carriage, are caused to spring forward as shown in Fig. 2, the instant they clear the curb stone and reach the gutter almost instantly, supporting the carriage at its front end and permitting the carriage to ride on a level with the side-walk it has left. When the carriage reaches the other side of the street, the reducer wheels strike the curb stones first and as the carriage is pushed forward they are pushed backward into the po-

sition shown in Fig. 1, the forward wheels of the carriage landing upon the pavement while this operation is being performed and moving forward to support the carriage as the rear wheels are still located on the street.

In Figs. 5 and 6 will be seen other adjusting means whereby the arm 22, which is similar to the arm 10 has at its outer end the segment 23 with perforations 24, and near the outer end of this arm, is pivoted a link 25 which is adapted to swing over the face of the segment and has pivoted at its forward end the lever 26 identical with the lever 14. The lever 26 is pivoted on a pin 27 which is splined in a hub at the end of link 25 but is adapted to move longitudinally so as to be thrust into one of the perforations 24. The movement of this pin is controlled by a finger 17' carried by the arm 17 on the lever 26 and plays in a cam groove 27'' in the head 27' of the pin 27. While the lever and the wheel 29 are in their normal position, as shown in Fig. 5, the pin is retracted but as soon as the lever swings around past the vertical line and forward of the carriage, the finger 17' moves up the groove 27'' and forces the pin into one of the perforations 24 and locks the link 25, the lever 26 and the wheel against further movement. This device is especially applicable for the automatic adjustment of the wheel so that it may accommodate itself for the differences in height of various curb stones.

Another means for automatically adjusting the device is shown in Figs. 7 and 8 where it will be seen that the arm 30 is secured to the axle as above described and has at its outer end the lever 31 and spring 32. To the lever is pivoted a second lever 33 with a spring 34 at its pivot to cause its rear end 35 to be thrown downward so that notches 36 will engage a cross pin 37 and hold the lever 31 in the position shown in dotted lines in Fig. 7. Normally the end 35 of the lever is raised and the wheel 38 follows the pavement and its irregularities but when the curb is reached and the wheel 38 allowed to spring forward the end 35 then drops and one of the notches 36 engages a pin 37, locking the wheel in the position shown in dotted lines, and below and in advance of the supporting front wheels of the carriage. After crossing the street the lever 33 strikes the curb and thereby causes notch 36 to lift from off pin 37 releasing arm 31 and the wheel 38 is forced to the position shown in the full lines in Fig. 7 and the front wheels of the carriage allowed to drop to the side-walk.

In the modification shown in Fig. 9, the weight 39 is carried at the outer end of an arm 40 secured to the upper end of the lever and always exerts the pressure to throw the lower end of the lever downward, and the wheel 18 forward.

When attached only to the front wheels of the carriage, this reducer permits of its going from side-walk to side-walk in passing over a street without changing the level of the front part of the carriage and if it is then necessary to handle the carriage this work need only be confined to the rear wheels. When attached to the rear part of the carriage but in front of the rear wheels, this jar reducer acts on the rear part of the carriage in the same way as above described on the front part. The great difficulty in handling a baby carriage is in the control of the front wheels when they leave the side-walk to go to the street and again when they leave the street to return to the opposite side-walk and the same difficulty again occurs when the rear wheels leave the side-walk to go to the street and again when they are to leave the street to return to the side-walk. This device is adapted to relieve the person handling the carriage from any anxiety or work other than if the carriage rode on an even level at all times. In crossing the street the contact with the curb is sufficient to release the reducer and throw it back to its normal position in front of the forward axle and wheels, and permits the latter to continue on the even plane.

When the attachment is used on the rear part of the carriage and in crossing the street when it comes in contact with the curb, the contact is sufficient to release the jar reducer and throw it back to its normal position in front of the rear axle and wheels and permit the rear wheels to continue on the even plane. It is obvious that the attachment may also be applied to the body of the carriage instead of the axles.

In case that the carriage is used in hilly regions, the jar reducer may be made to practically level the body of the carriage when going up hill by momentarily raising the rear part of the carriage and releasing the rear jar reducer when the rear end of the carriage would then ride on the rear jar reducers in place of the rear wheels and thus raise the rear of the carriage to an even level with the front part. In coming down a hill, by momentarily elevating the front part of the carriage, the jar reducer on the front part would be released and the carriage would then ride on the jar reducer in place of the front wheels and, the front part being elevated, would ride on an even level with the rear part of the carriage.

The adjustment of the reducer wheel may be regulated to conform with curbs of various heights so as to provide for the use of the carriage in communities where the curbs may be of certain heights as it is obvious that different communities have different height of curbs and depths of gutters, but each community as a rule has its curbs of a uniform height.

It is obvious that other modifications and arrangement of the parts may be resorted to without departing from the essential features above described.

5 What we claim as new and desire to secure by Letters Patent is:

1. In a shock reducer, the combination with a vehicle having permanently located supporting wheels, of an arm secured to the vehicle, and a lever under tension carried by the arm and having a wheel at its lower end adapted to be swung from one side of a vertical line to the other side thereof when meeting a depression in the road.

15 2. In a shock reducer, the combination with a vehicle having permanently located supporting wheels, of an arm secured to the vehicle, a lever with a wheel at the outer end and pivoted to the arm, and tension means to press the wheel against the ground and throw it past a vertical line and forward of the wheels of the vehicle.

25 3. In a shock reducer, the combination with a vehicle, of wheels supporting same and permanently located, an arm attached to the vehicle, a lever having one end pivoted to the outer end of the arm, a wheel at the other end of the lever, and tension means at the upper end of the lever to force the wheel against the ground or in advance of the vehicle and past a vertical line when meeting a depression.

35 4. In a shock reducer, the combination with a vehicle having permanently located supporting wheels, of an arm secured to the vehicle, a lever pivoted to the outer end of the arm and adapted to be folded beneath the same, a wheel at the lower end of the lever, and a spring at the upper end of the lever and adapted to force the wheel downward and forward of the front supporting wheels of the vehicle and past a vertical line when meeting a depression.

40 5. In a shock reducer, the combination

with a vehicle having permanently located supporting wheels, of arms secured to the vehicle and extending toward the front of the supporting wheels, levers pivoted at the outer end of the arms, wheels at the outer end of the levers and adapted to be adjusted thereon, and springs carried by the pivot of the levers to force same downward and away from the arms to advance the levers past a vertical line and beyond the front wheels of the vehicle.

55 6. In a shock reducer, the combination with a vehicle having permanently located wheels, of arms extending in front of the wheels, levers pivoted at their upper ends to the arms, wheels adjustable in the other ends of the levers, pivots, and springs, about pivots and adapted to operate the arms and levers to throw them past a vertical line and ahead of the front wheel of the vehicle to partly sustain it when meeting a depression.

70 7. In a shock reducer, the combination with a vehicle having permanently located supporting wheels, of an arm extending forward of the said wheels, a lever on the arm, a pivot connecting the lever and the arm, a spring carried by the pivot and adapted to separate the arm and the lever, a wheel at the end of the lever, and a latch adapted to hold the arm and lever together and be released when striking an obstruction or when the load is removed from the front wheels of the vehicle.

80 In testimony whereof, we have signed our names to this specification in the presence of two subscribing witnesses, this 24th day of November, 1909.

RAYMOND L. HERMAN.
LOUIS L. LOEB.

Witnesses:

JAMES F. DUHAMEL,
GEO. A. SENIOR.