

No. 633,276.

Patented Sept. 19, 1899.

E. T. ROBERTSON.

WAGON BRAKE.

(Application filed June 8, 1899.)

(No Model.)

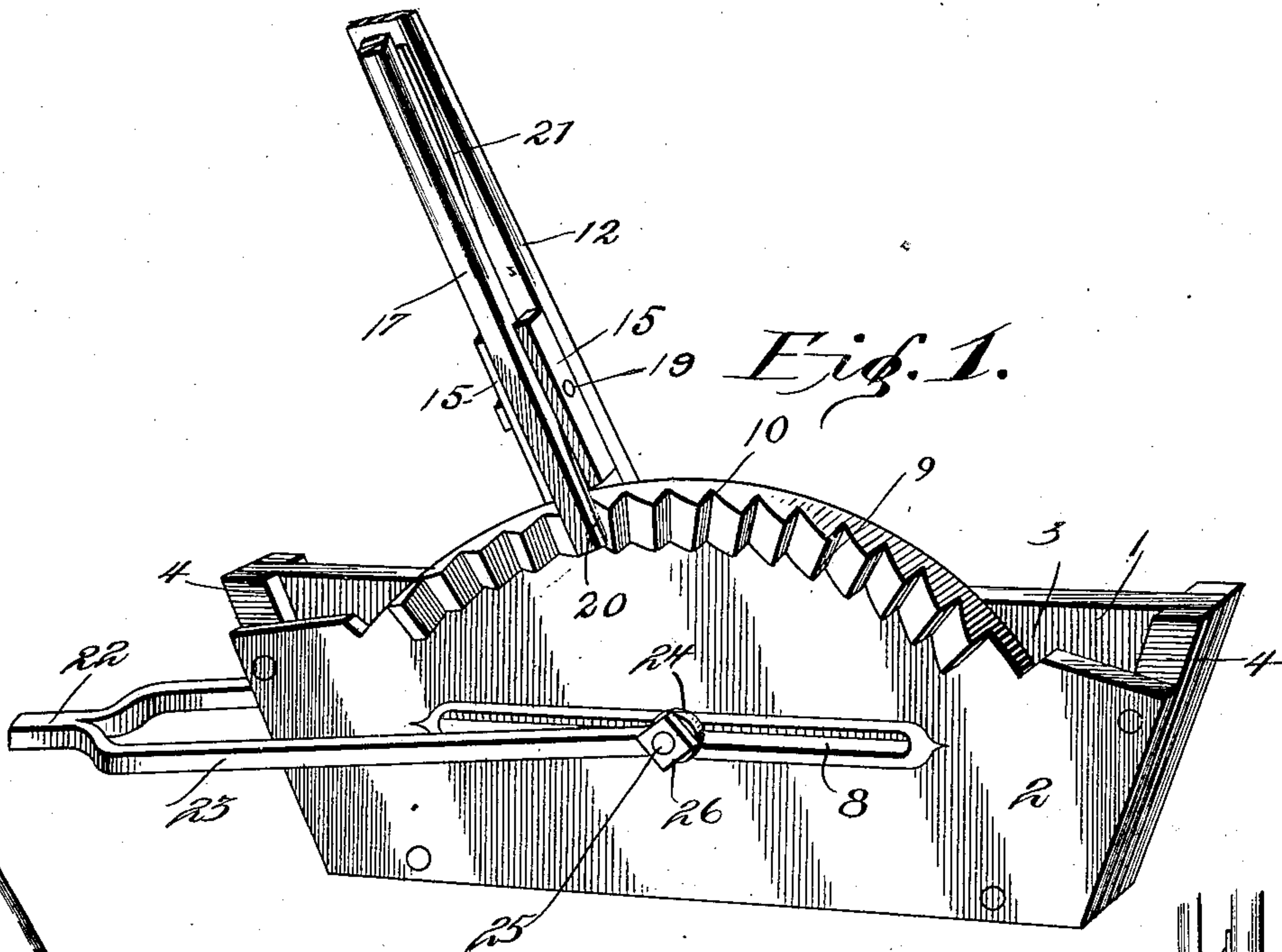


Fig. 1.

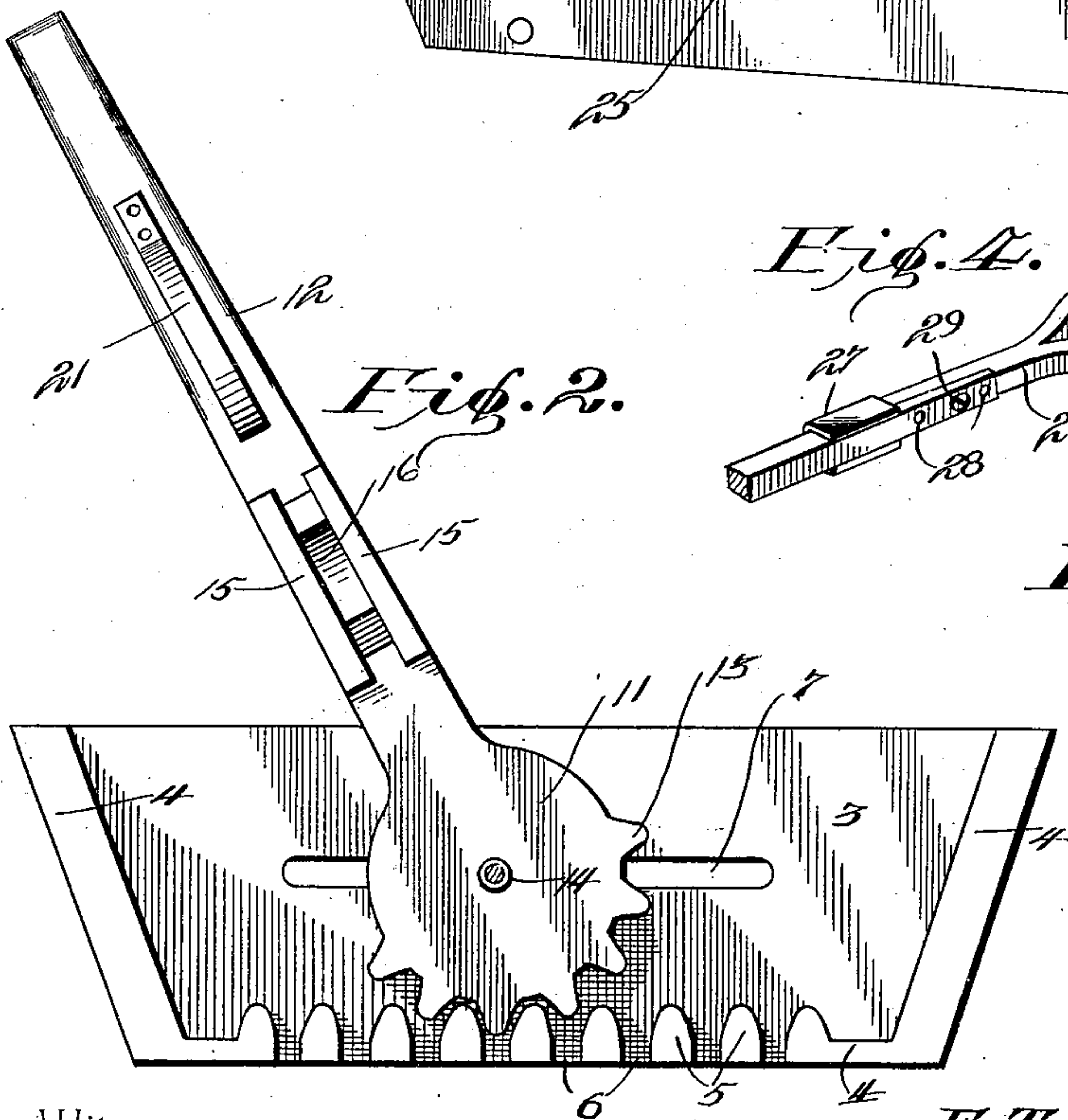


Fig. 2.

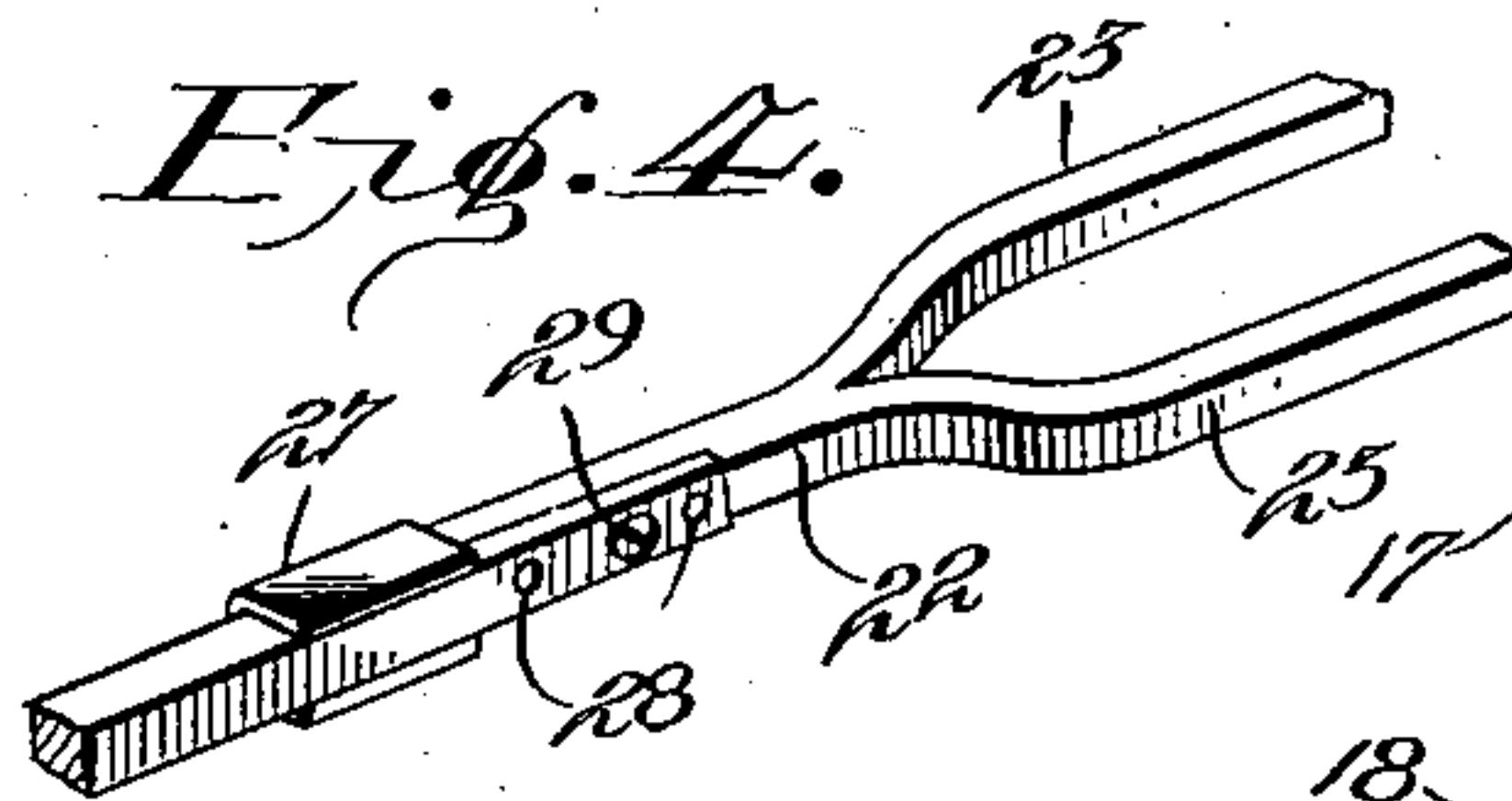
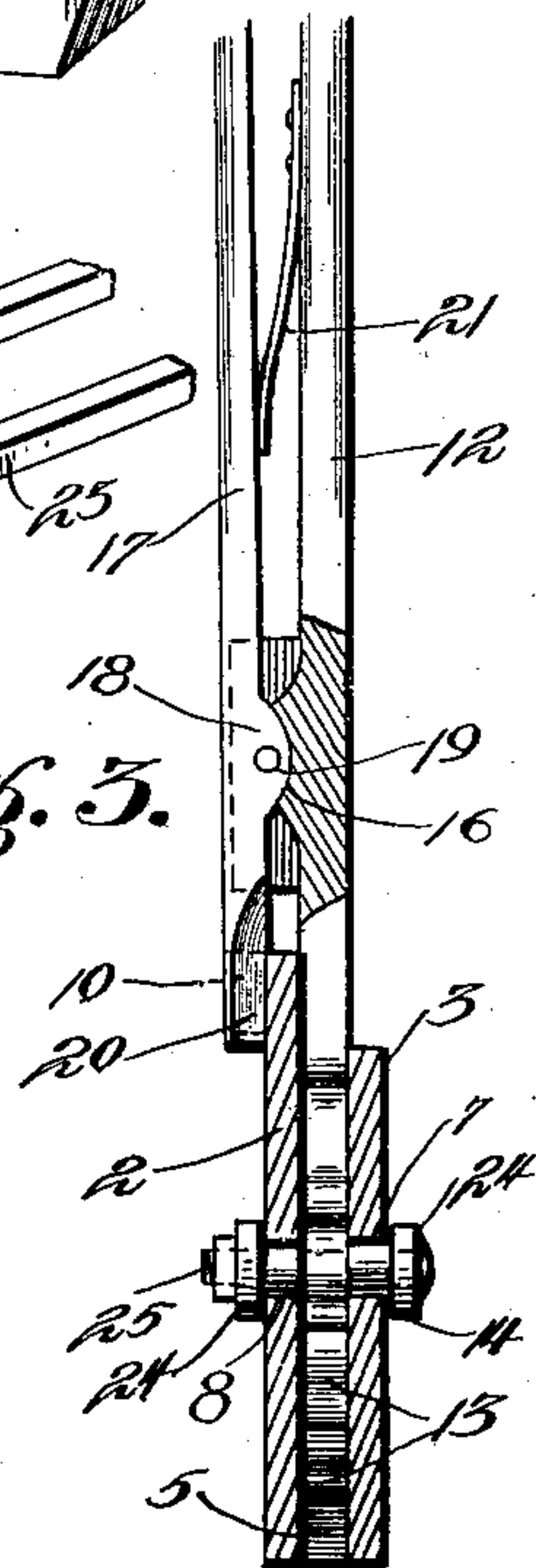


Fig. 4.

Fig. 3.



Witnesses

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# UNITED STATES PATENT OFFICE.

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## WAGON-BRAKE.

SPECIFICATION forming part of Letters Patent No. 633,276, dated September 19, 1899.

Application filed June 8, 1899. Serial No. 719,802. (No model.)

*To all whom it may concern:*

Be it known that I, ENOCH T. ROBERTSON, a citizen of the United States, residing at El Dorado Springs, in the county of Cedar and State of Missouri, have invented a new and useful Wagon-Brake, of which the following is a specification.

This invention relates to wagon-brakes, and more particularly to locks therefor, and the aim of the same is to provide means for adjusting the brake-shoes to and from the carrying-wheels to avoid the congregation or collection of mud on the said shoes from the wheels, and, further, to relieve the strain from the fulcrum of the brake-lever incident to such levers having pivot pins or bolts in fixed relation to their support, and also to thoroughly shield the devices connected with the brake-lever from dust and dirt of an injurious nature and always have the several devices in operative condition.

The invention further contemplates the application of the brake-shoes to carrying-wheels with equal braking pressure at all times irrespective of the worn condition of the faces of the shoes and without requiring a resetting of the fulcrum of the brake-lever or a readjustment of any of the connected parts, and, further, to adapt the application of the brake-lock to different points on a wagon or vehicle body and insure the same uniformity in the braking force exerted through the brake-lever.

The invention consists, essentially, of a lock comprising a back plate and a face-plate thereover, the back plate having a series of projections in the bottom and both plates confining between them a portion of a brake-lever having a head with teeth to engage the projections in the bottom of the back plate and also provided with a fulcrum having longitudinal movement, when desired, in slots in the opposite plates, the brake-lever being controlled as to its position through the medium of locking devices in part carried by the lever and also the upper portion of the face-plate.

The invention further consists of the details of construction and arrangement of the several parts, which will be more fully hereinafter described and claimed.

In the accompanying drawings, Figure 1 is a

perspective view of a brake-lock embodying the invention. Fig. 2 is a side elevation of a part of the device. Fig. 3 is a transverse vertical section through a portion of the improved lock. Fig. 4 is a detail perspective view of a part of the brake-lever.

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

The numerals 1 and 2 respectively designate back and face plates, the back plate being attached to the side of a vehicle or wagon body in suitable position and having a recess 3 in its outer side provided by a surrounding end and partial bottom rim 4. The back plate is held away from the part of the vehicle to which it is attached to give sufficient room for the operation of the brake-lever connection which embraces both plates in the manner which will be presently set forth. The bottom of the back plate 1 has a series of teeth or upstanding meshing projections 5 formed thereon, which have their outer surfaces flush with the faces of the rims 4, and the latter at the bottom terminate in teeth similar to the teeth 5. Between the teeth 5 openings 6 are formed to allow any dirt or other matter that may collect in the recess of the said back plate to pass downwardly to the exterior and thereby prevent the collection of material that would obstruct or have a deleterious effect on the operating parts.

In the back plate at a suitable elevation a longitudinal slot 7 is located and at a predetermined distance above the teeth or upstanding projections 5. The face-plate 2 has a similar slot 8 formed therein, which is adapted to transversely align with the slot 7 when the face-plate is applied to the said back plate. The mode of securing the face-plate to the back plate may be carried on in a variety of ways; but it will be preferably accomplished by means of bolts or machine-screws, and at the center of the upper edge of said face-plate a segmental projection 9 is located and has its outer edge provided with a series of ratchet-teeth 10, having alternate locking-shoulders and inclined faces of similar ordinary devices. The ratchet-teeth 10 stand outwardly from the outer side of the said face-plate and follow the line of the upper edge of the projection 9.



Between the assembled plates the head 11 of a brake-lever 12 is shiftably mounted. A portion of the periphery of the said head has teeth 13 thereon, which are of such dimension as to operatively mesh with the teeth 5 in the lower portion of the back plate 1. Extending centrally through the said head 11 is a tubular fulcrum 14, which projects equally on opposite sides and to provide trunnions 10 which have slidable bearing in the slots 7 and 8, respectively, formed in the back and face plates.

The lever 12 will be of such length as to project up high enough within convenient reaching distance of the driver of a vehicle to which the attachment is applied, and above the upper edges of the back plate 1 and the face-plate 2 opposite elongated bosses 15 are formed on the outer side of the lever and confine between them a concaved seat 16. Between the bosses 15 an elongated dog 17 is pivotally mounted and has a convex enlargement 18, bearing in the said seat 16, a pivot-pin 19 being transversely passed through the said bosses and the convex enlargement. The lower end of the elongated dog 17 at the inner side is reduced, as at 20, to conform to the shape of the ratchet-teeth 10 and set up a locking engagement therewith, and to maintain the said dog in locking position it is thrown outwardly under normal conditions by an interposed plate-spring 21, which is secured to the said lever and has its free end movably impinging against the said dog. The dog extends over the length of the lever 12 a sufficient distance to be grasped and pressed inward toward the said lever when changing the adjustment, and the lower edges of the bosses 15 sweep very closely to the upper curved edge of the projection 9 on the face-plate 2 during the operation of the lever.

The brake-rod 22, which extends rearwardly to the brake-beam, as will be understood, has in this instance its front end formed with a fork 23, of which the opposite parts embrace the back and face plates and have front bearing-eyes 24, which are fitted over the projecting ends of the hollow fulcrum 14 of the head 11. After the bearing-eyes are adjusted on the projecting end of the fulcrum 14 a headed bolt 25 is slipped through the said fulcrum from one side and receives a nut 26 on the opposite end to thus firmly connect the fork 23 with the head 11. At times it may be found necessary to lengthen or shorten the brake-rod, and to accommodate such adjustment the rod is made in separable parts, one of which carries a cuff 27, which embraces the other portion, and in the end of one of the sections a series of openings 28 are formed for the insertion of a clamping-bolt 29. The cuff 27 acts as a brace in this arrangement and removes the entire strain from the bolt 29.

In the operation of the brake-rod the lever 12 is shifted in a forward direction to apply the brake-shoes to the wheels of the vehicle and moved in the reverse direction to release

the said brake-shoes. A material gain is obtained in the present device by the swinging or sweep of the brake-lever by means of the gearing or meshing portions of the back plate and the head of said lever, and which gives a rolling forward movement as well as rearward movement in accordance with the direction of movement of said lever, and by this means a greater power can be acquired with the same leverage. The advantage of the greater sweep of the brake-lever is in throwing the brake-shoes farther from the wheels to prevent mud from gathering and dragging against the latter, and at times the position of the head 11 might be changed longitudinally in the slots 7 and 8 to rectify any lack of firm impingement which might be due to wear or other causes. The adjustable brake-rod 22 can also be used for the same purpose, or it will serve effectively in compensating for a change of position of the fulcrum of the brake-lever in the slots 7 and 8 without varying the distance of the brake-shoes from the wheels. Another advantage of the present form of construction is that a direct draft is obtained by means of the forked end 23 of the brake-rod engaging the adjacent ends of the fulcrum of the head 11, and wearing pull or strain on the connection of the brake-lever is overcome by this opposite side connection of the fork 23, and particularly in view of the mounting of the said fulcrum within the slots 7 and 8, which will permit a variation of position of the said fulcrum and further obviate the wear also incident to devices of this character which have a fixed position of rotation or stand in immovable relation to the support and have the brake-lever turning thereon. In the operation of the present device it will also be observed that when the dog 17 has its lower engaging end 20 in mesh with any one of the ratchet-teeth 10 it will be impossible to disengage the lock from its position as thus attained. Furthermore, in the construction of the improved brake-lock but three main parts are made necessary—namely, the back and face plates and brake-lever, to which are added the dog and spring therefor and the hollow fulcrum for the head 11. This materially reduces the expense of manufacture, and though the brake-rod 22 has been described as capable of adjustment it is not actually necessary that such feature be included, as a continuous brake-rod could be used.

The proportions and dimensions of the several parts can be changed to accommodate different applications, and the minor details might also be varied without in the least departing from the nature of the invention or sacrificing any of the advantages incident thereto.

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

1. In a brake-lock, the combination of a support having slots arranged in parallel alignment in opposite portions thereof and also



provided with outer and inner projections, a brake-lever having a fulcrum in the said slots of the support and provided with devices for engaging the said projections, and a brake-rod attached to the fulcrum of the lever.

2. In a brake attachment, the combination of a support having slots in opposite sides thereof and inner and outer projections arranged in different engaging planes, a brake-lever having a fulcrum movably mounted in the said slots and its lower end meshing with the inner projections, a movable device on the brake-lever to engage the outer projections, and a brake-rod attached to the fulcrum of the brake-lever.

3. In a brake attachment, the combination of a support having elongated slots in opposite sides thereof in parallel relation and also formed with a lower series of ratchet-teeth, a brake-lever having a tubular fulcrum mounted in said slots and also provided with a segmental toothed head, a brake-rod having a forked end movably embracing said tubular fulcrum, and a fastening movably inserted through the opposite portions of said forked end of the brake-rod and fulcrum.

4. A brake-lock, comprising a recessed back plate having teeth in the lower portion thereof with open spaces between them and also provided with a slot in the side, a face-plate having a slot in its side in parallel relation to the slot of the back plate and also formed with a series of ratchet-teeth, a brake-lever having a head with a fulcrum in the said slots and teeth on its lower edge to engage the teeth in the lower portion of the

back plate, and a dog movably attached to said lever and adapted to engage the ratchet-teeth on the face-plate.

5. A brake-lock comprising a recessed back plate having teeth in the lower portion, a face-plate provided with ratchet-teeth on the upper exterior portion, a brake-lever with a lower head having teeth meshing with the teeth of the back plate, and a fulcrum-bearing in both plates, and a dog on the brake-lever to coact with the ratchet-teeth on the face-plate.

6. A brake-lock comprising a recessed back plate having teeth in the lower portion with openings between them, a face-plate, a brake-lever having a head fulcrumed in both of said plates and provided with peripheral teeth to engage the teeth of the back plate, and means on the brake-lever to coact with the teeth on the face-plate.

7. A brake-lock comprising a support having longitudinal slots in opposite portions in parallel relation, a brake-lever having a tubular fulcrum mounted in said slots, a brake-rod having a forked end embracing said support, and a fastening extending through the opposite portions of the forked end of the brake-rod and the said fulcrum.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

ENOCH T. ROBERTSON.

Witnesses:

C. C. DAVIDSON,  
G. W. SELLS.