

(No Model.)

W. R. McLAIN.

APPARATUS FOR REMOVING OBSTRUCTIONS.

No. 489,541.

Patented Jan. 10, 1893.

Fig. 1.

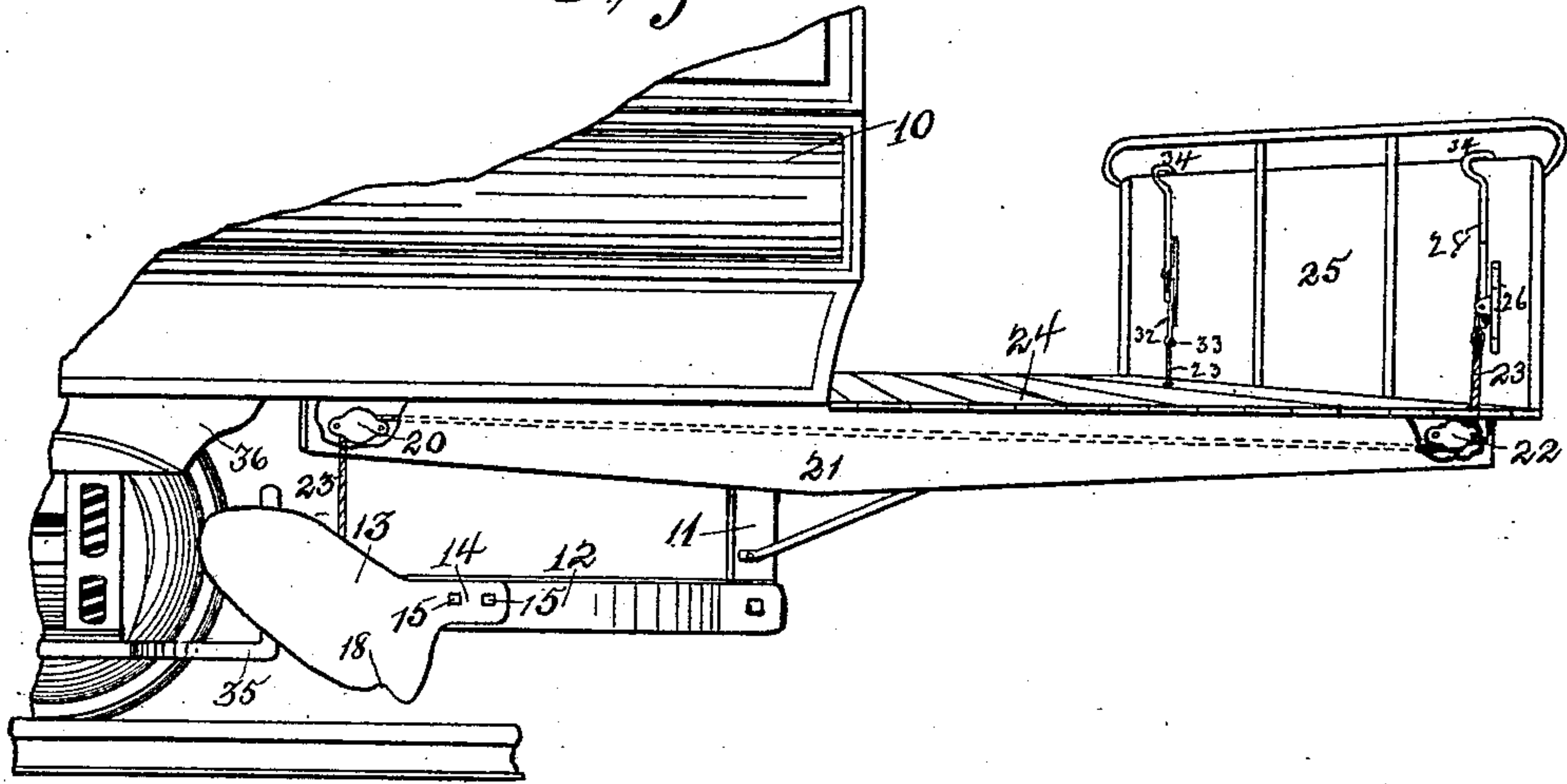


Fig. 2.

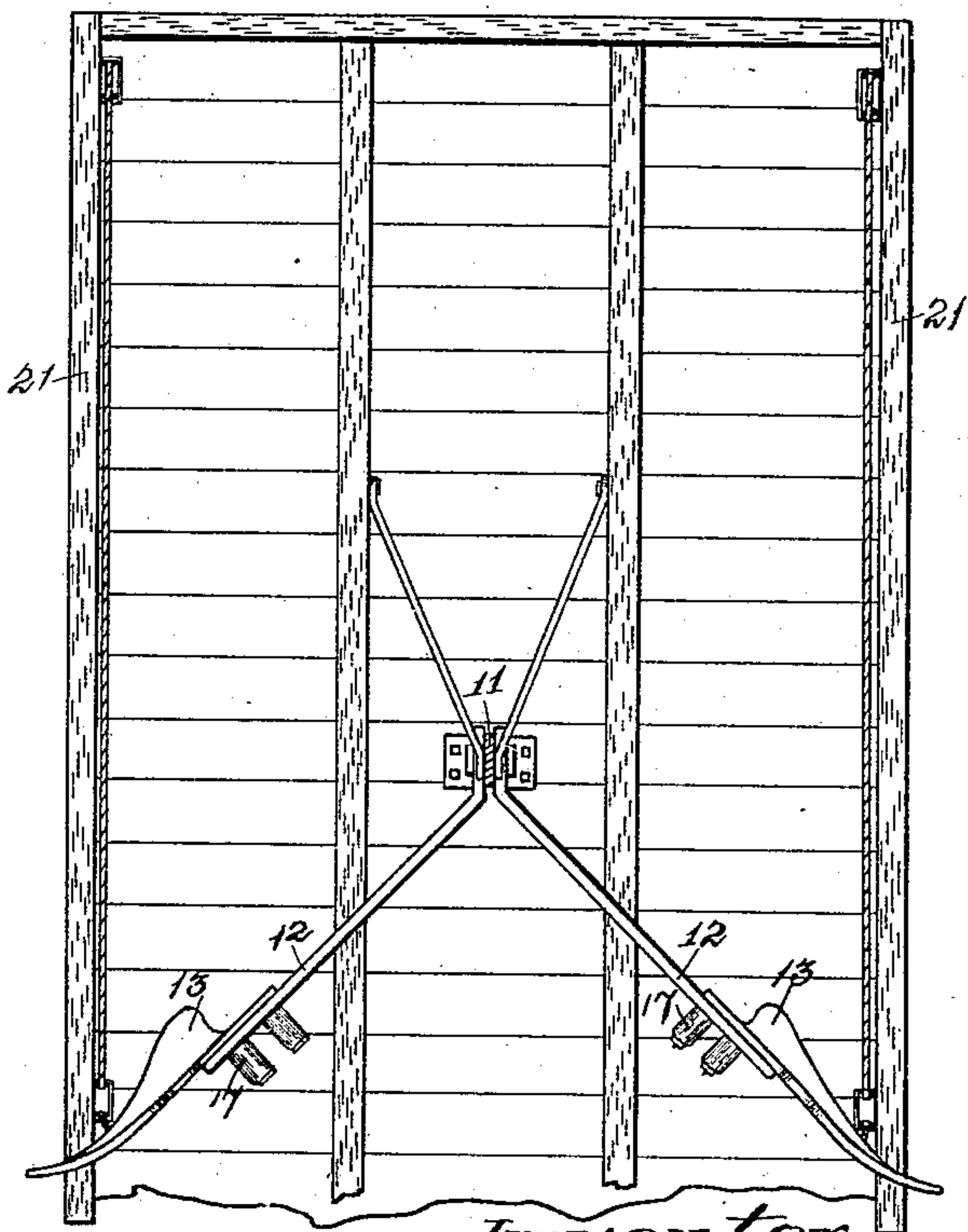


Fig. 3.

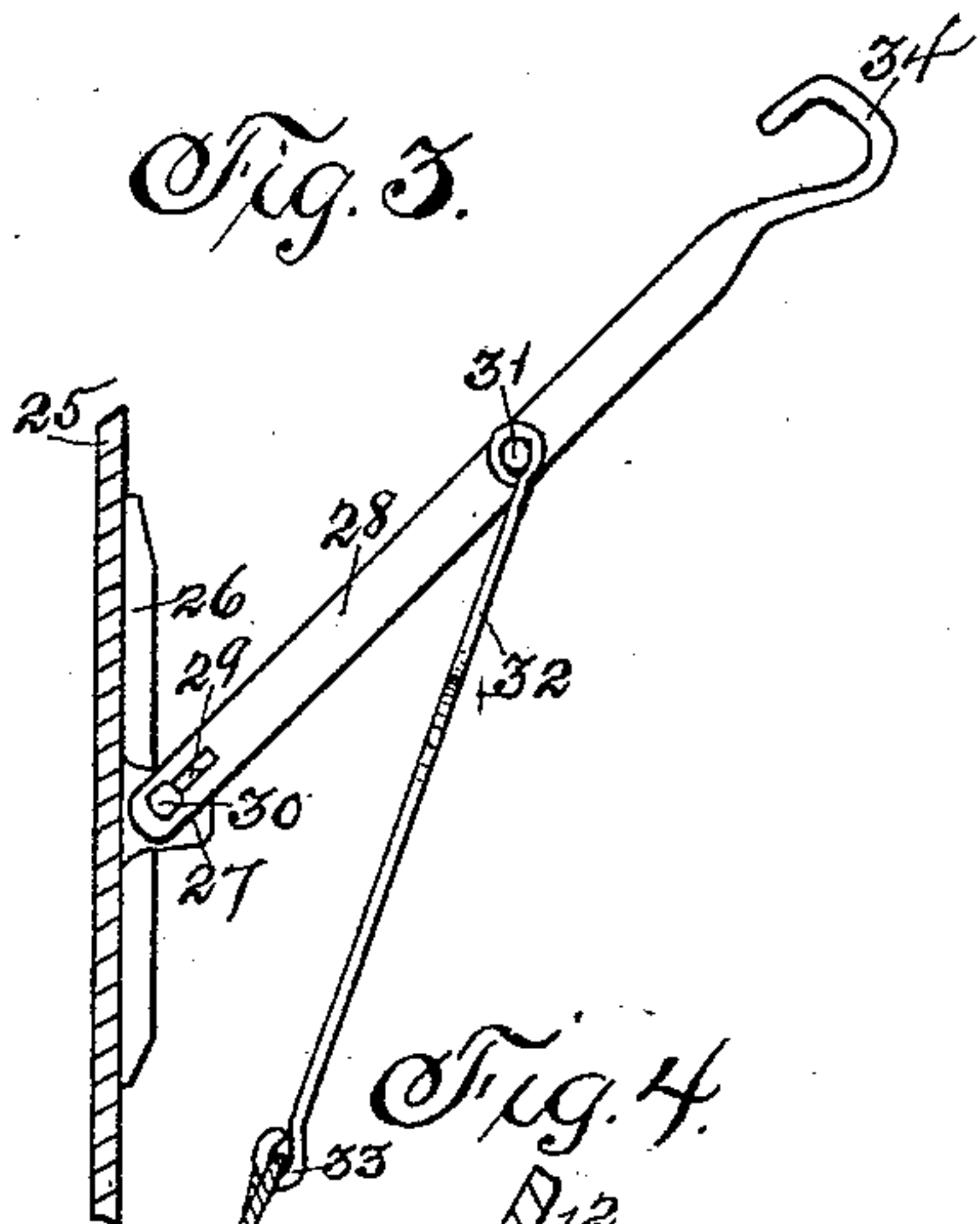
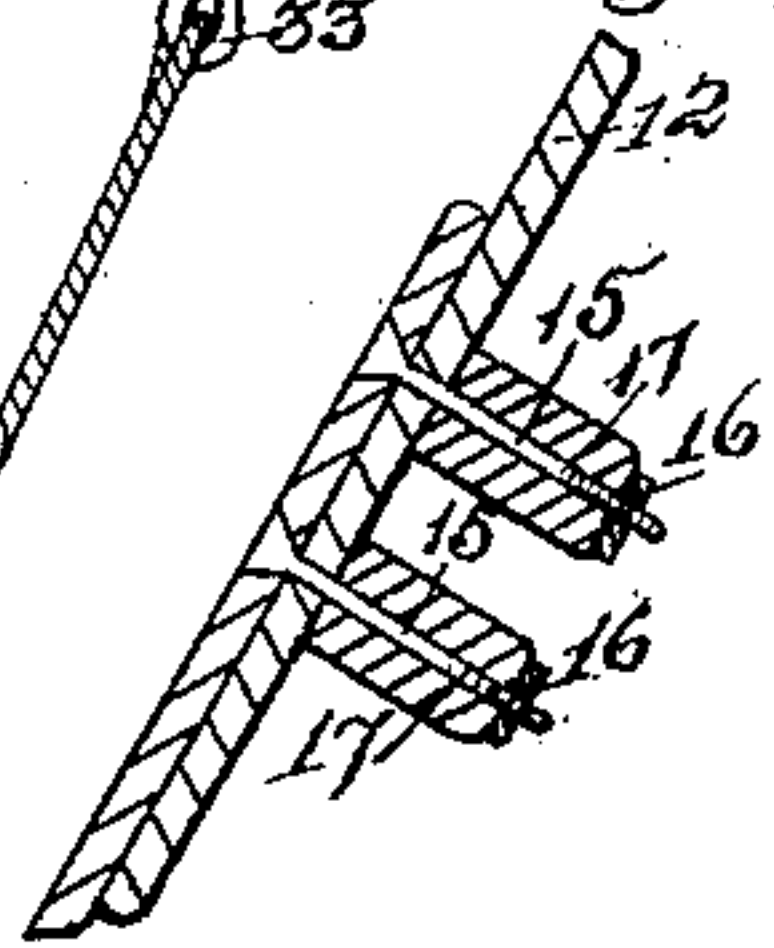


Fig. 4.



Witnesses
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UNITED STATES PATENT OFFICE.

WILLIAM R. McLAIN, OF DES MOINES, IOWA.

APPARATUS FOR REMOVING OBSTRUCTIONS.

SPECIFICATION forming part of Letters Patent No. 489,541, dated January 10, 1893.

Application filed September 17, 1891. Serial No. 405,969. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM R. McLAIN, a citizen of the United States of America, and a resident of Des Moines, in the county of Polk and State of Iowa, have invented a new and useful Apparatus for Removing Obstructions, of which the following is a specification.

My invention relates to that class of devices in which an apparatus is employed in conjunction with a street car or other propelled vehicle, by means of which obstructions in the path of advancement of the vehicle are removed.

The object of this invention is to provide means for accomplishing the desired result in removing obstructions, which at the same time will yield upon the instant of impact with an obstruction, offering such a resistance as would otherwise cause damage to the apparatus, and yet affording a pressure that increases in direct proportion to the resistance offered eventually effects a removal of the obstruction, that portion of the apparatus impacted against the obstacle being brought automatically again into a normal position.

A further object of my invention is to be found in the provision of means by which those immediate parts of the apparatus designed to remove obstructions on opposite sides of the vehicle are caused by the operator to perform their functions independently or conjunctively.

To this end my invention consists, in conjunction with a vehicle propelled along a roadway, of a scraper or set of scrapers or plows which are pivotally connected with the vehicle, which scrapers or plows are so acted upon by yielding pressure as to present an approximately vertical or broad face to an obstruction located in the path of advancement of the vehicle, and which scrapers or plows are so arranged as to turn torsionally upon coming in contact with the said obstruction against the resilient force of the yielding pressure, so that when the obstruction is removed or passed the scrapers or plows automatically return into position again to engage another obstruction.

My invention consists further in certain arrangements of parts and construction as that either of the scrapers or plows may be inde-

pendently operated from a convenient point relatively to the operator of the vehicle.

My invention consists further in the details of construction, and combination of parts, hereinafter set forth, pointed out in my claims, and illustrated by the accompanying drawings, in which;

Figure 1 is a perspective view of a portion of a car to which my device is attached. Fig. 2 is a bottom view showing the device attached to the under side of a car. Fig. 3 is a detail view showing the lifting lever and the means for attaching the same to the dashboard, and the connections with the scrapers or plows. Fig. 4 is an enlarged detail sectional view on the indicated line X—X of Fig. 1.

In the construction of the device as shown, the numeral 10 designates a portion of a car body to the under side of which is secured a depending arm 11.

The numerals 12, 12, designate plow beams, which are pivotally secured to the depending arm 11 by one of their ends, and extend rearwardly and outwardly therefrom as shown in Fig. 2.

A scraper or plow, comprising a blade 13 and shank 14, is fixed to each of the beams 12 by means of bolts 15 which are passed through coinciding perforations in the beams and the shank adjacent thereto. The heads of the bolts 15 are countersunk in the shank 14, and said bolts extending through the beam 12 are each provided with a nut 16 on its screw-threaded end portion. Blocks of india rubber 17 are interposed between the nuts 16 and the beam 12, and said nuts are screwed down tightly against said rubber blocks, thus providing a yielding connection between the scrapers and the beams. A notch 18 is formed in the lower edge of each of the blades 13 at the point where the said blade travels on the rail 19 of the track over which the vehicle is advanced. Sheaves 20 are fixed to each of the boot-legs 21 of the vehicle, at points approximately vertically above the respective scrapers. Sheaves 22 are fixed to each of the boot-legs 21 at the forward ends thereof. Ropes 23 are each fixed by one end to one of the blades 13 and extending through the sheaves 20 and 22 are carried upward through

the platform 24 of the vehicle to a point of attachment with elevating devices located on the dash-board 25 at opposite sides of said platform. The elevating devices (Fig. 3) comprise an angle plate 26 fixed to the dash-board 25, which angle plate has an integral portion 27 extending therefrom, to which portion 27 the lever 28 is fulcrumed. The lever 28 is provided with an elongated slot 29 in one end, through which slot a bolt 30 is passed, which bolt is also secured to the portion 27 of the plate 26 and serves as a fulcrum for the lever 28. A stud 31 is fixed to and projects from the central portion of the lever 28, to which stud a connecting rod 32 is pivotally connected, the other end of said rod having an eye 33 formed therein by means of which attachment is made to one of the ropes 23. A hook 34 is formed on the upper end of each of the levers 28, which hook serves as a handle for the lever and at the same time is adapted to engage the upper edge of the dash-board 25 when desired. Angle-irons 35 are fixed to the trucks 36 of the vehicle, and extending forward therefrom serve as stops to limit the rearward movement of the scrapers.

In the operation of my apparatus, the several parts being in the position shown in Fig. 1, it being desired to remove an obstruction from the path of the advancing wheels, either or both of the scrapers are placed in an operative position by the operator who grasping the hook 34 on one or both of the levers 28 as desired, lifts the said hook out of engagement with the dashboard 25 and carries the same rearward and downward until the said levers assume a vertical position depending from the fulcrum. During the movement just described, the sustaining power having been relaxed, the scrapers descend and rest upon the rails 19, thus assuming a position to engage with and remove any obstruction offered to the wheels of the advancing vehicle. The scrapers being now in an operative position, the blades 13 will remove any ordinary obstruction from the rails, and in the event of an object being forcibly struck by one of said blades, the said blade will turn torsionally relatively to the beam supporting the same, the rubber spring yielding on one side to permit of said movement torsionally and again expanding after the obstruction has been removed. It is obvious that the greater the yield of the scrapers the greater will be the resilient power exerted by the springs to hold the scrapers stationary and remove the obstruction, and the advancing movement of the vehicle acting in an opposite direction to the resistance offered by said obstruction sets up a vibratory or tremulous movement of the scrapers which imparts a series of initial movements to the obstructing substance preliminary to finally depositing the same at one side of the path of the advancing vehicle. In the event of the scrapers meeting an obstruction which offers a resistance greater than the resilience of the rubbersprings, said

scrapers will turn torsionally until they come in contact with the angle-irons 35, which angle-irons serve to hold the scrapers against the resistance of the obstruction and force the same to one side of the advancing vehicle.

A superior advantage of the construction of my apparatus resides in the arrangement of the parts in such positions relative to each other as that they are adjustable independently of each other, thus making possible the clearance of obstructions which are located on one side of the track only, without necessitating the employment of the scraper on the opposite side of the track, the unnecessary use of which scraper would simply add to the friction of the advancing vehicle without performing any beneficial result.

Having thus described my invention, what I claim as new therein, and desire to secure by Letters Patent of the United States, therefore, is:

1. In an apparatus for removing obstructions, the combination with a propelled vehicle, of a scraper or scrapers pivotally connected to said vehicle, and yielding pressure acting upon said scraper or scrapers and so disposed relative thereto as to permit a torsional movement of said scraper or scrapers relatively to the normal position of the same.

2. In an apparatus for removing obstructions, the combination with a propelled vehicle, of a plurality of scrapers pivotally connected to said vehicle and positioned forward of the supporting or traction wheels in the path of advancement of the same, together with yielding pressure disposed in the rear of said scrapers and normally acting thereon to cause them to present an approximately vertical or broad face to the meeting obstruction, which said scrapers yield torsionally upon impacting with the obstruction and remove the same by a tremulous movement.

3. In an apparatus for removing obstructions, the combination with a propelled vehicle, of a plurality of plow beams attached to and depending from said vehicle, plows or scrapers fixed to said beams, yielding pressure disposed in proximity to the point of connection between said plows and beams and so acting upon said plows or scrapers as to cause them to normally present an approximately vertical or broad face to the meeting obstruction, said yielding pressure permitting a torsional movement of said plows or scrapers relative to the supporting beams and returning them to their normal position after they have effected a removal of the obstruction.

4. In an apparatus for removing obstructions, the combination with a propelled vehicle, of a plurality of plow beams pivotally connected to said vehicle, plows or scrapers fixed to said beams, a lever or levers fulcrumed on said vehicle in proximity to the operator thereof, each of said levers having a slot in one end through which the fulcrum passes, and a hook on the opposite end

adapted for engagement with a fixed portion of the vehicle, and flexible connections between said lever or levers and the said scrapers.

5 5. In an apparatus for removing obstructions, the combination with a propelled vehicle, of a plurality of plow beams pivotally connected to said vehicle and diverging rearwardly therefrom, plows or scrapers fixed to said beams, yielding pressure acting upon
10 said plows or scrapers to cause them to normally present an approximately vertical or

broad face to the meeting obstruction, said yielding pressure permitting of a movement of the plows or scrapers independently of the beams, together with means for adjusting
15 said plows or scrapers in or out of operation as desired.

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Witnesses:

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