

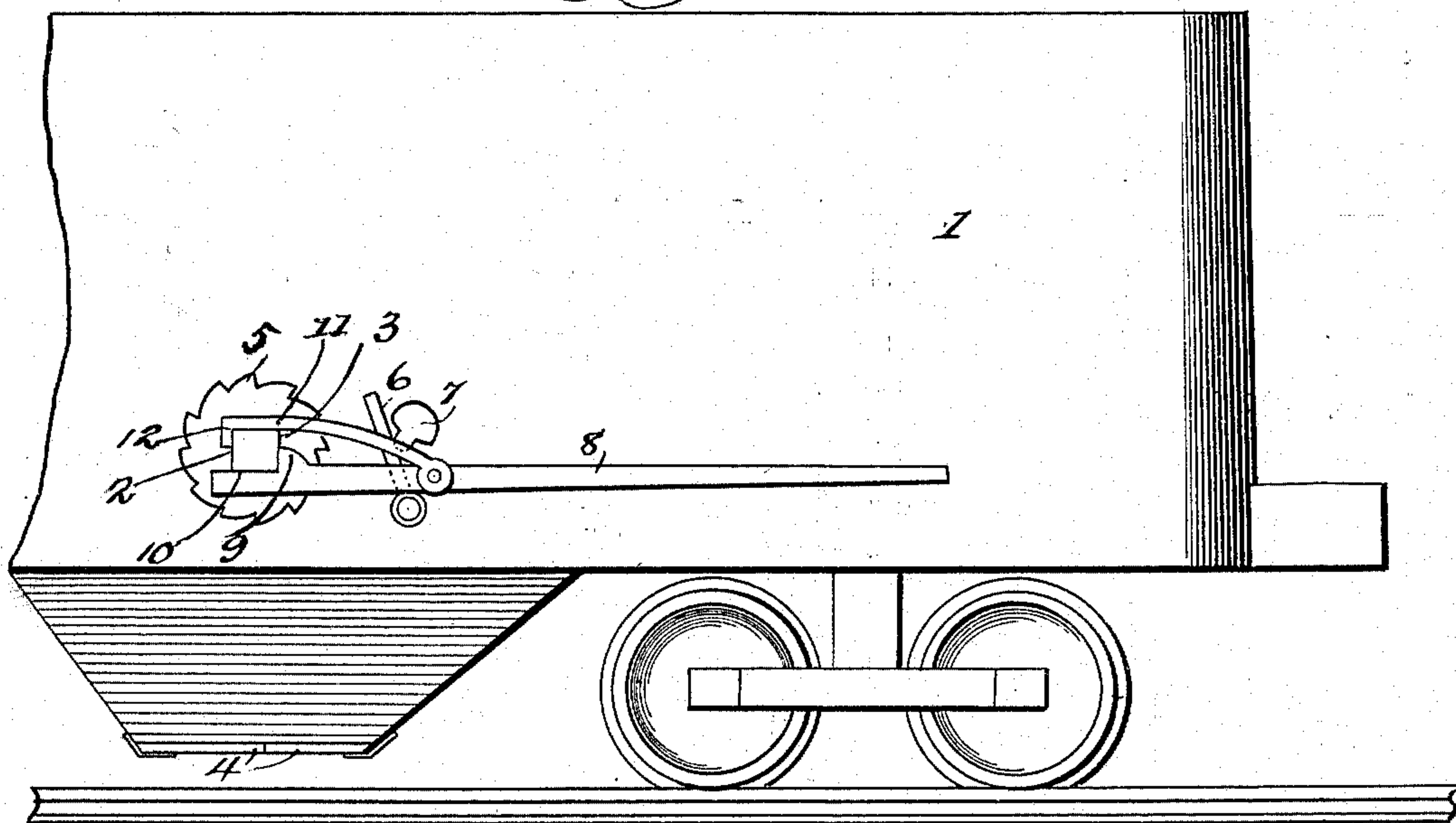
(No Model.)

T. NICHOLSON, Jr.  
SAFETY WRENCH FOR UNLOADING CARS.

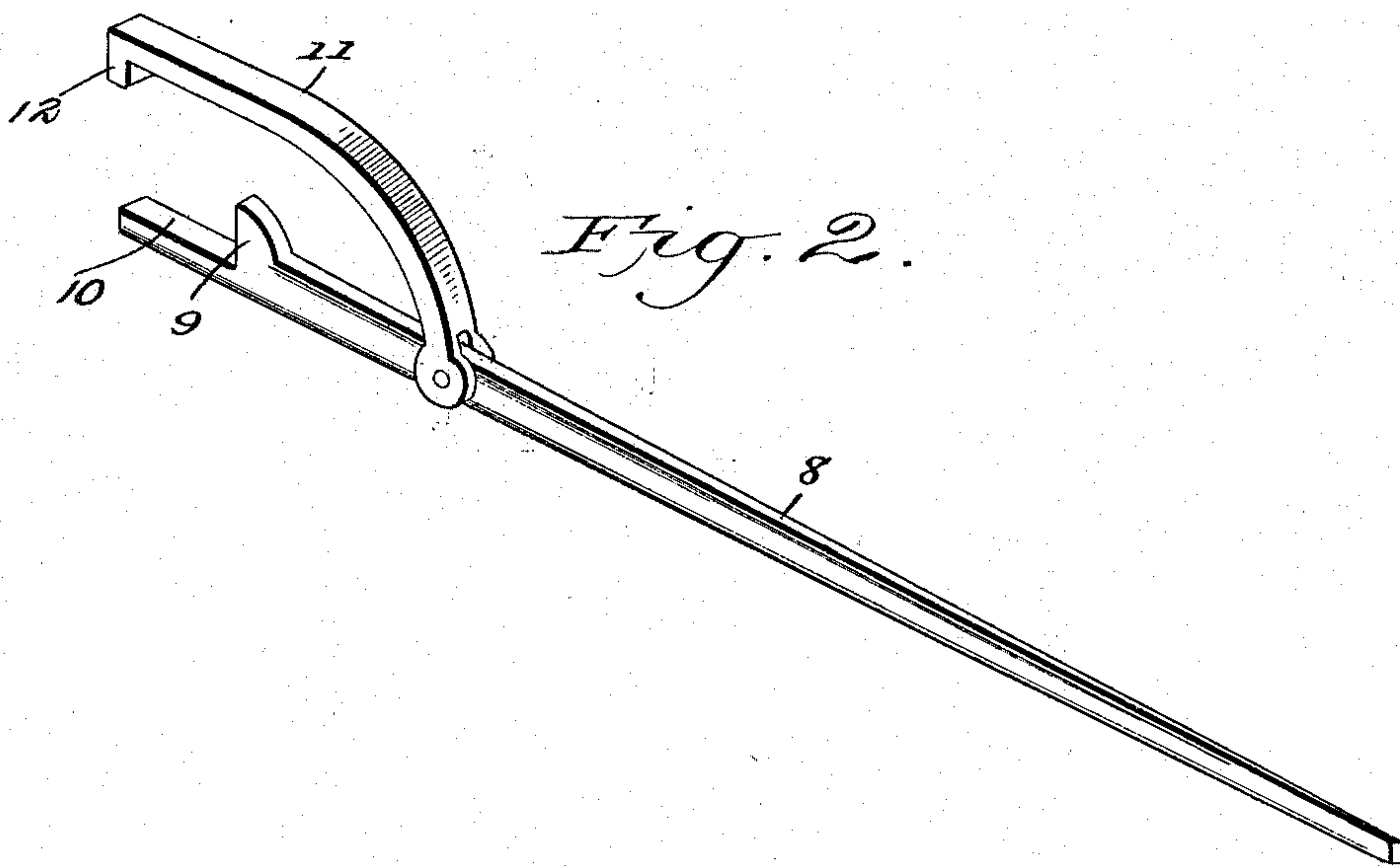
No. 518,533.

Patented Apr. 17, 1894.

*Fig. 1.*



*Fig. 2.*



Witnesses  
*W. Reynolds*  
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# UNITED STATES PATENT OFFICE.

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## SAFETY-WRENCH FOR UNLOADING CARS.

SPECIFICATION forming part of Letters Patent No. 518,533, dated April 17, 1894.

Application filed January 27, 1894. Serial No. 498,251. (No model.)

*To all whom it may concern:*

Be it known that I, THOMAS NICHOLSON, Jr., a citizen of the United States, residing at Ashbourne, in the county of Montgomery and State of Pennsylvania, have invented certain new and useful Improvements in Safety-Wrenches for Unloading Cars; 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 a safety wrench for unloading cars, and has for its object to provide simple and effective means for opening the gate of a hopper or analogous car with ease and readiness, and to prevent danger to life after the shaft has become started by a failure to disengage the wrench, as is now frequently the result.

With these and other objects in view, the invention consists of the construction and arrangement of the several parts which will be more fully hereinafter described and claimed.

In the drawings, Figure 1 is a side elevation of a portion of the car, showing the wrench applied thereto. Fig. 2 is a detail perspective view of the wrench.

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

Referring to the drawings, the numeral 1 designates a car having a shaft 2 which extends transversely across the car from one side to the other and has one end squared as at 3. Around the shaft 3 is wound the chain which is attached to the doors or gates 4 of the car and when the car is loaded with coal or other material it will readily be seen that there is considerable pressure on the said doors or gates. On the shaft adjacent to the squared end of the same is mounted a ratchet wheel 5, and adjacent to said ratchet wheel is a pawl 6 and near the pawl is a stop or guard 7 to prevent the pawl from being thrown backward its full revolution. The doors are held in closed position against the pressure that is brought to bear thereon by the engagement of the said pawl with the ratchet wheel. In unloading the car it becomes necessary to start the shaft in motion so that the chain thereon will be unwound, and the doors

or gates dropped. To do this it is necessary to use a wrench and after the shaft has become started it frequently revolves with such great rapidity that it is impossible to engage an ordinary box wrench or small tool of an analogous nature from the end of the shaft in time to obviate danger to the life of the operator unloading the car. With these difficulties in view, the present wrench was devised, and consists of a long arm 8 having at one end a lug 9 which rises therefrom, and forms with the adjacent part of the said arm an angular recess 10. This lug is adapted to be made either stationary or adjustable with the said arm, and slightly in rear thereof is pivotally secured the lower bifurcated end of a short arm 11, which rises in a curved line from the longer arm and then extends outwardly in a horizontal plane and has a downwardly projecting lug 12 formed at its outer end and which lies in a vertical plane beyond the outside of the terminating end of the long arm 8, so that the inner face of the said lug will be in line with the outer end of the said long arm. The said shorter arm may be adjustably attached to the longer arm and the adjustability of the shorter arm as well as the lug on the inner arm is clearly shown in Fig. 3 of the drawings. It will be seen that through the medium of the lug on the long arm and that on the short arm a diagonal resistance is offered to engage the squared end of the shaft 1, and by drawing downward on the lever to start the shaft a pulling action is exerted on the shorter arm against the resistance offered by the lug on the longer arm and that the moment the shaft starts to revolve, it can freely do so without carrying the wrench around therewith in view of the pivoted attachment of the said shorter arm, thereby permitting the wrench to be held in the hand with safety as the shorter arm will fly away or be thrown away from the shaft by the rotation of the latter.

The stop or guard 7 is to prevent the pawl 6 from becoming accidentally disengaged on the ratchet wheel 5 when the car is loaded or the doors are up in their normal position.

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



In a safety wrench for unloading cars, the combination of a long arm having an angular recess 10 near the outer end thereof and a vertical lug 9 at the rear of said recess, and a  
5 shorter arm 11 pivotally attached to the said longer arm in rear of the lug 9, said shorter arm having its rear end curved and bifurcated and its outer upper end straight and provided with a depending lug whose inner  
10 surface is in line parallel with the outer end of the said longer arm and formed with the

lug 12, for resistance in engaging a square ended shaft, substantially as and for the purpose specified.

In testimony whereof I have signed this  
specification in the presence of two subscribing witnesses.

THOMAS NICHOLSON, JR.

Witnesses:

GEO. W. WILSON,  
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