

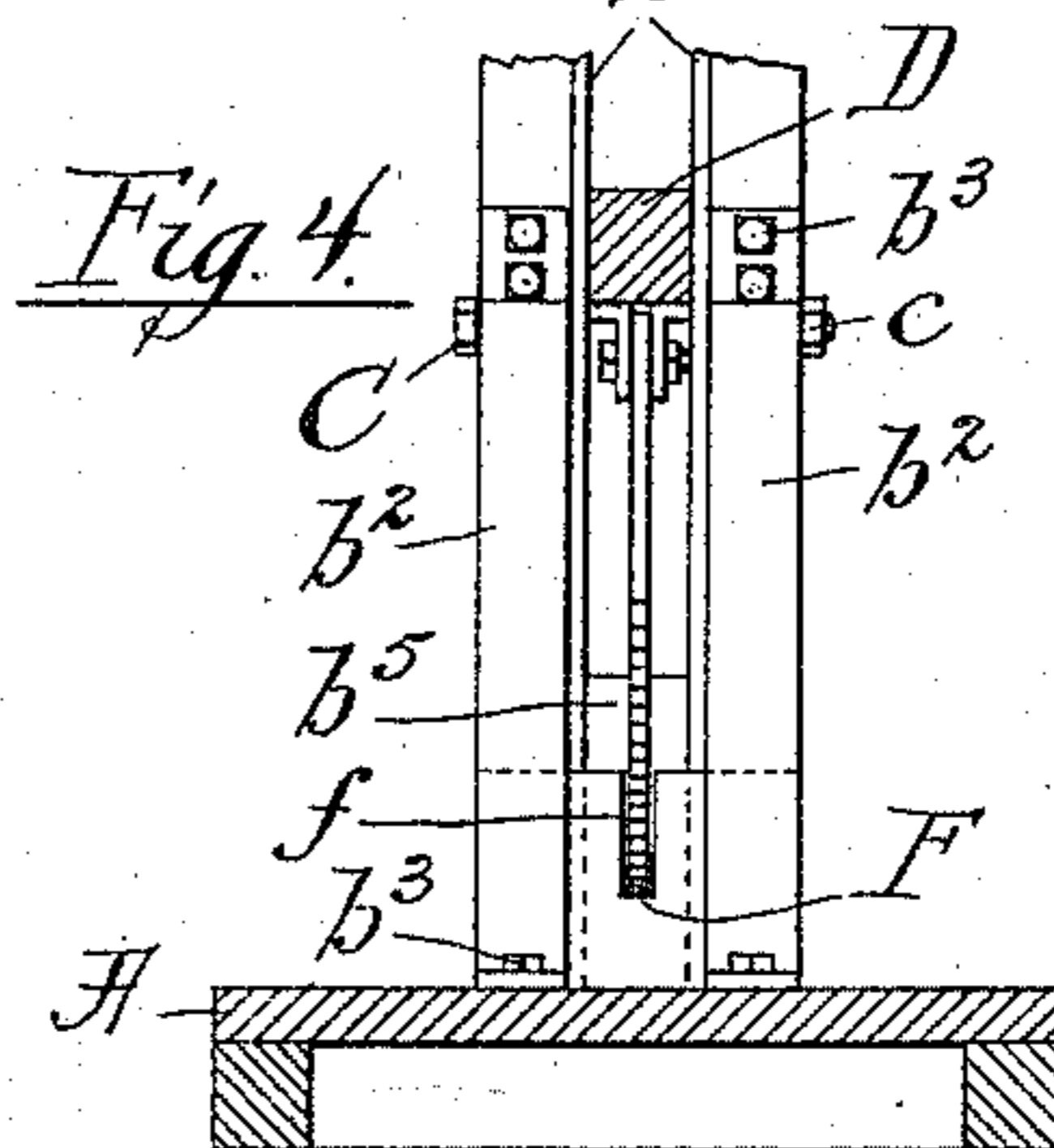
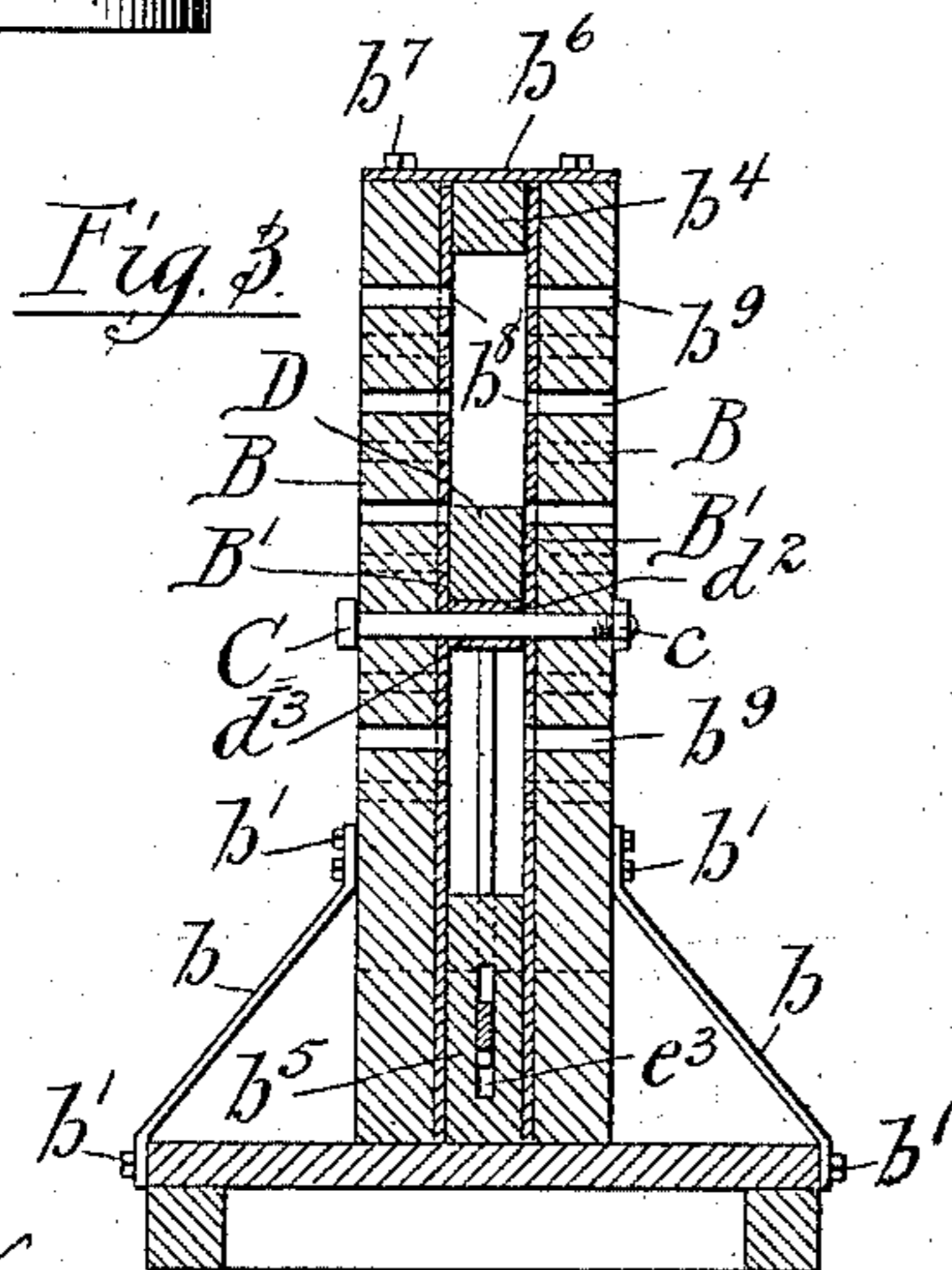
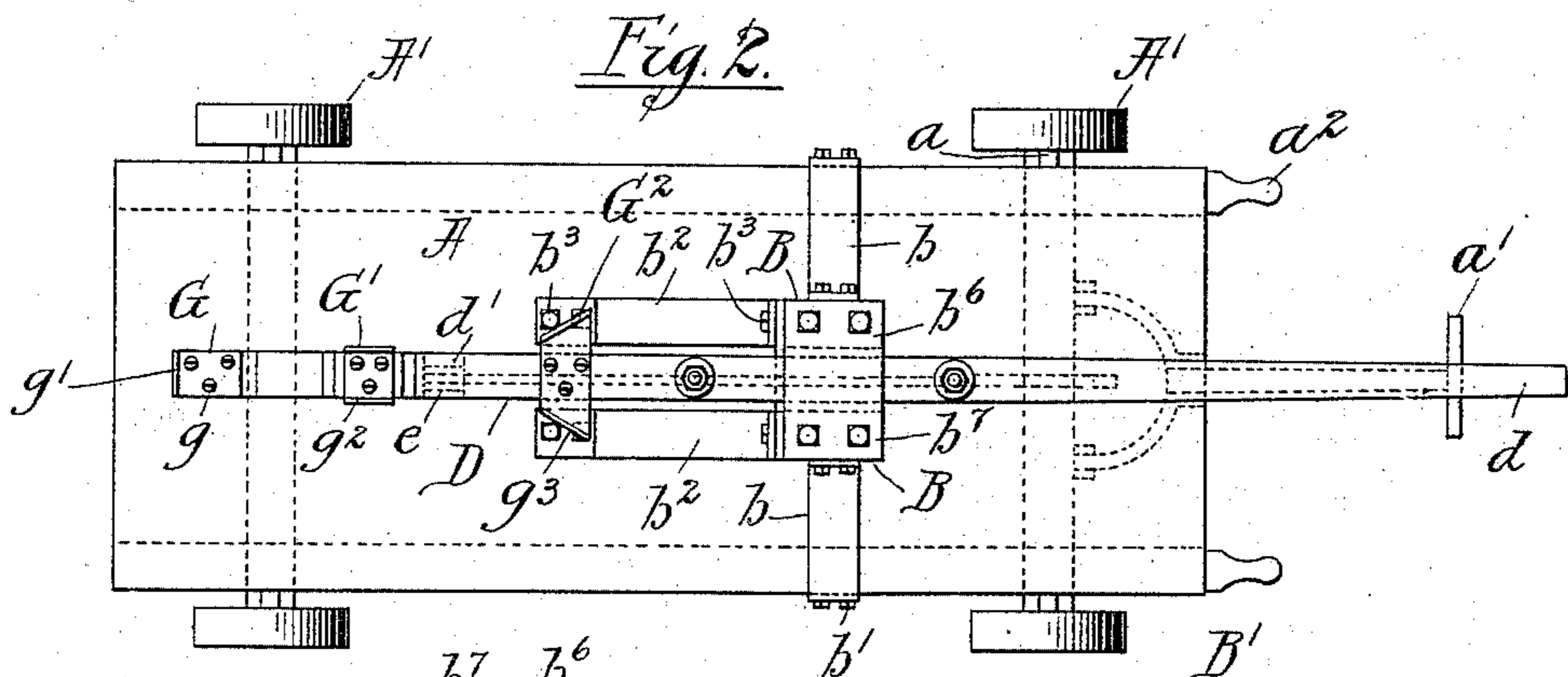
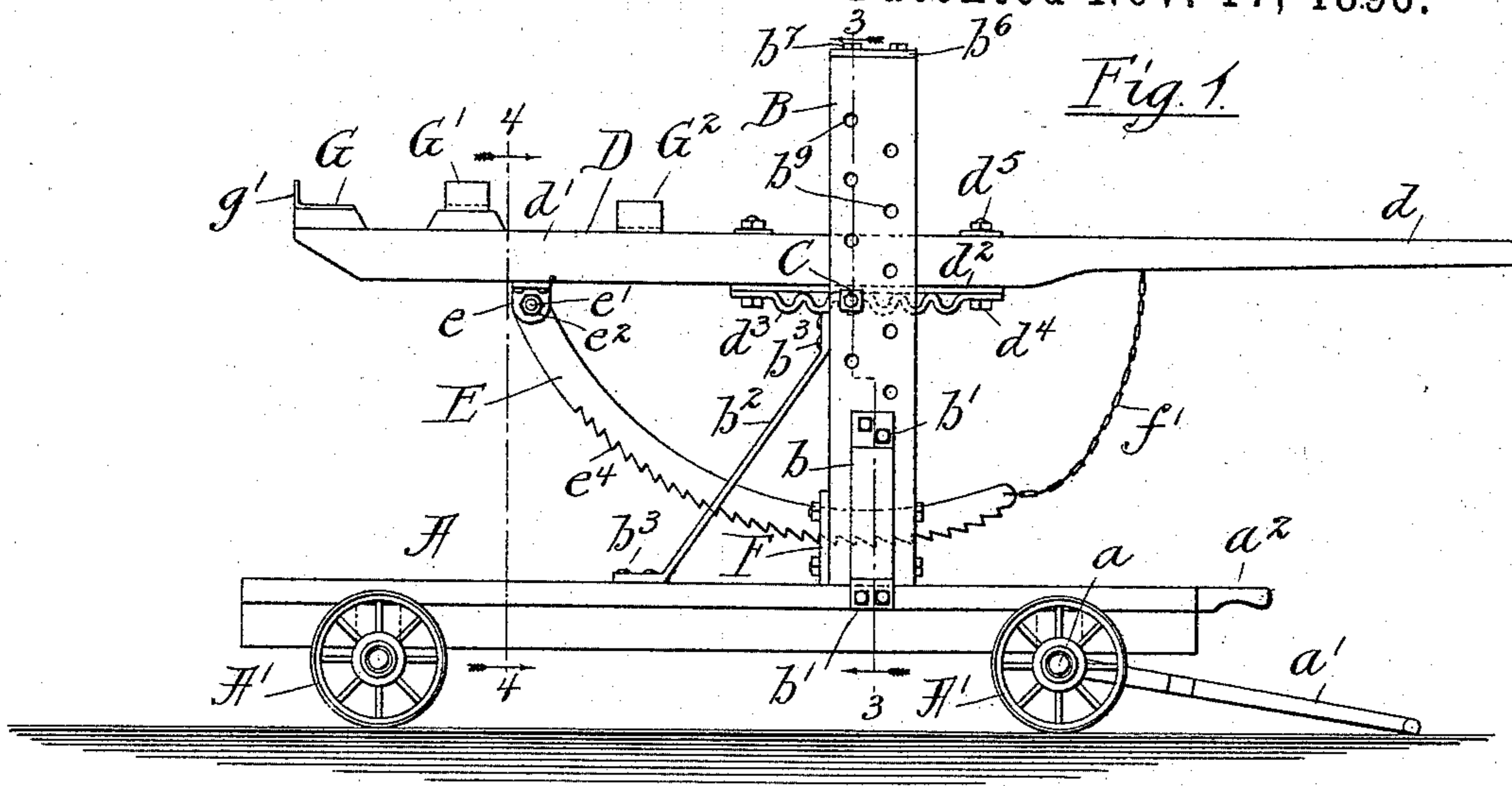
(No Model.)

2 Sheets—Sheet 1.

J. SCHULTZ.  
DRAW BAR LIFT.

No. 571,540.

Patented Nov. 17, 1896.



Witnesses:—  
John W. Adams.  
Clinton Hamlin

Inventor:—  
Joachim Schultz.  
by: Dayton, Poles & Brown  
his Attys.

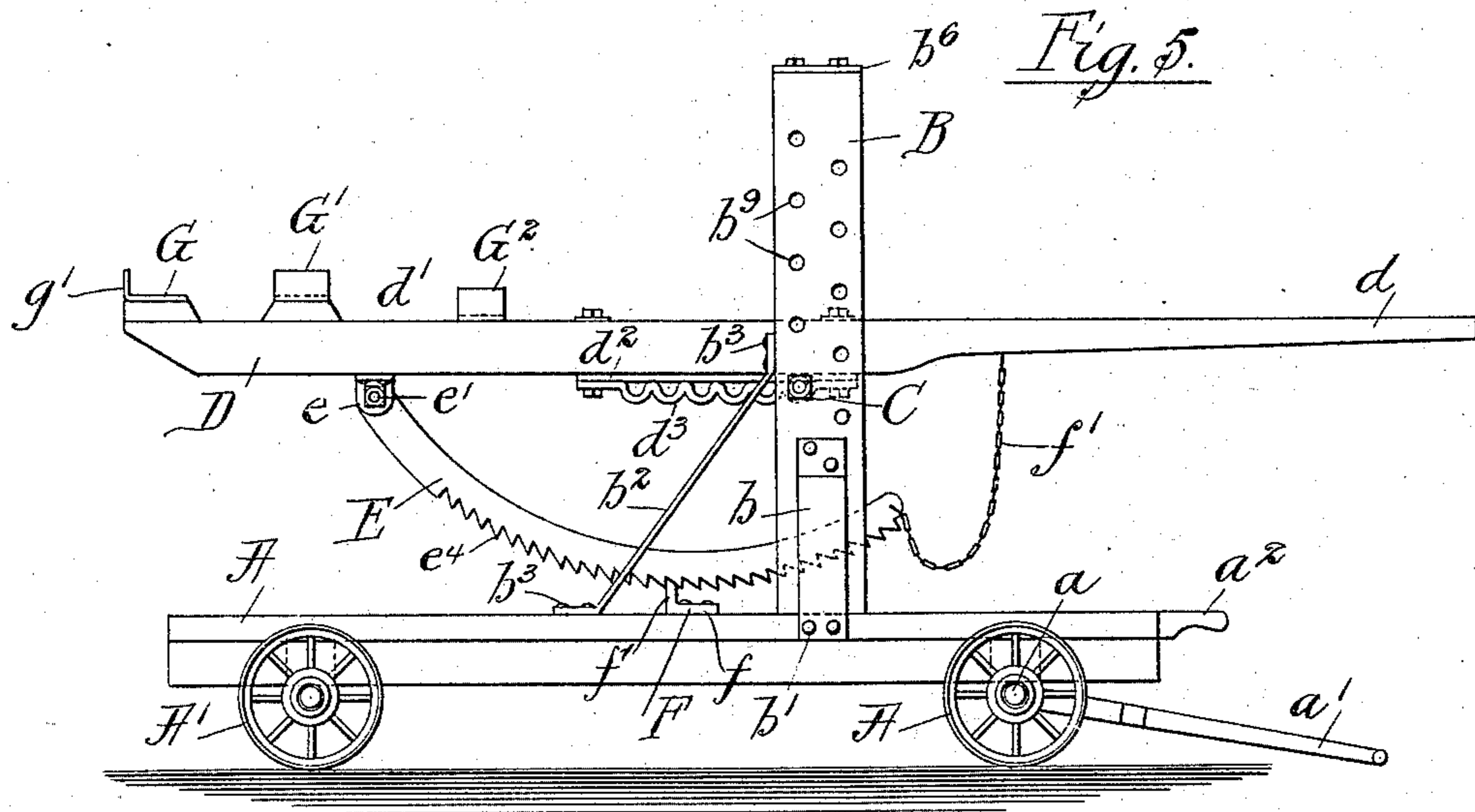
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# UNITED STATES PATENT OFFICE.

JOACHIM SCHULTZ, OF CHICAGO, ILLINOIS.

## DRAW-BAR LIFT.

SPECIFICATION forming part of Letters Patent No. 571,540, dated November 17, 1896.

Application filed February 6, 1896. Serial No. 578,183. (No model.)

*To all whom it may concern:*

Be it known that I, JOACHIM SCHULTZ, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful  
5 Improvements in Draw-Bar Lifts; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, and to the letters of reference marked there-  
10 on, which form a part of this specification.

This invention relates to means for assisting in the repair of railway-cars, and more particularly to a portable apparatus for receiving and raising the draw-bars of a car,  
15 which are very heavy and by reason of their length and conformation are extremely awkward to handle in the space within which they must be handled, to wit, beneath the car.

20 At present when it is desired to repair a railway-car, either a freight-car or a passenger-coach, it very frequently happens that the draw-bar must be taken down. To do this it is necessary to place several sets of jack-  
25 screws beneath the draw-bar, then remove the supporting pieces by which the draw-bar is held in position under the car, and then lower the jack-screws with the draw-bar on it. Frequently either by carelessness or  
30 otherwise the draw-bar slips from off the jack-screws and causes injury either to the tools or implements about or to the workmen.

When it is necessary to replace the draw-bar, the jack-screws are again called into use and  
35 it is necessary to raise this heavy piece of metal onto the jack-screws before the latter can be turned so as to receive the draw-bar into the proper position. Moreover, after being lowered from the ground by the jack-  
40 screws, the draw-bar must be removed from beneath the car pending the making of repairs and must be carried back to this position before being again placed on the lifting-jacks, all of which necessitates considerable  
45 handling and is a slow and tedious operation. To remove this practical difficulty in the handling of draw-bars, I have devised a movable platform or truck carrying a lever.

When it is desired to remove a draw-bar from  
50 a car, I run my truck underneath the car, raise the lever to beneath the draw-bar, lock

it in proper position, and then remove the supporting devices by which the draw-bar is secured to the car, and then by slightly lowering the lever I lower the draw-bar suffi-  
55 ciently to clear the floor of the car, back out the truck to some convenient place, and either allow the draw-bar to remain on my carrier until it is again wanted or deposit it in some convenient place if I desire to use the carrier  
60 for some other purpose. Of course the operation is reversed when I desire to replace the draw-bar underneath the car.

Generally speaking, my invention, then, comprises a wheeled platform, a two-part  
65 support mounted vertically thereon and suitably braced, and a carrier-lever pivotally and adjustably secured to said support. The carrier-lever is made at its operating end sufficiently wide to properly sustain the draw-bar,  
70 and is provided, preferably, with flanges and guide-plates, while the other end of the said lever is relatively long and is used as a handle by which the short arm may be raised or  
75 lowered. Pivotally secured beneath the lever is a curved arm or ratchet-pawl engaging a detent in the vertical support, whereby the height of the carrier-arm may be determined as desired. These and other features of my  
80 invention will be more readily understood by reference to the accompanying drawings and the appended claims.

Figure 1 represents in a side view a device embodying my invention. Fig. 2 is a plan  
85 view of the same. Fig. 3 is a vertical sectional view, enlarged, taken upon the line 3 3 of Fig. 1, the point of view being in the direction indicated by the arrows. Fig. 4 is a ver-  
90 tical sectional view, enlarged, of a portion of the device taken upon the line 4 4 of Fig. 1, the point of view being in the direction indicated by the arrows. Fig. 5 is a view similar to Fig. 1, showing the ratchet-bar detent  
95 arranged differently.

A represents the platform, suitably mounted  
95 upon wheels A' A', the forward wheels being preferably secured to a pivotally-arranged axle *a*, to which is attached a handle *a'*, whereby the direction of movement of the  
100 platform may be governed as desired. Short rigid handles *a*<sup>2</sup> *a*<sup>2</sup> may also be provided at the front corners of the platform, whereby

the latter may be more conveniently adjusted to exact position.

Mounted vertically upon the platform A are two supporting-timbers B B, suitably braced  
 5 from lateral movement by strap-irons  $b$   $b$ , bolted at  $b'$   $b'$  to the support and to the platform. The said vertical supports or timbers are braced against a forward movement or strain by the supporting metal straps  $b^2$   $b^2$ ,  
 10 suitably secured at  $b^3$   $b^3$  to the platform and to the forward margins of the said supports B, as shown clearly in Fig. 1. Spreader-blocks  $b^4$   $b^5$  are placed, respectively, between the upper and the lower ends of said supports B, and a  
 15 top plate  $b^6$ , secured by bolts  $b^7$ , serves to bind the upper ends of the uprights B together. Between the spreader-blocks  $b^4$   $b^5$  and the interior faces of the uprights B are metal lining-plates  $B'$ , suitably apertured at  
 20  $b^8$ , the apertures registering with corresponding openings  $b^9$ , extending laterally through the uprights B. The pivot-bolt C is adapted to be passed through the apertures  $b^8$   $b^9$  and is adjustably secured in position by means  
 25 of a nut  $c$ . It is upon this pivot-bolt C that the carrier-lever D is mounted. This lever D comprises a handle portion  $d$ , which is relatively long as compared with the short arm  $d'$ , upon which the draw-bar is to rest. The  
 30 carrier-lever D is of a width adapted to fit between the lining-plates  $B'$ , and is of sufficient dimension in the other direction to impart the necessary strength. Beneath the center portion of this lever D is a bearing-  
 35 plate  $d^2$ , and also a corrugated plate  $d^3$ , both plates being secured together and to the lever D by means of bolts  $d^4$  and nuts  $d^5$ . The corrugations in the plate  $d^3$  are such as to provide a plurality of openings sufficiently  
 40 large to encompass the pivotal bolt C. It will be obvious that upon removing the nut  $c$  and the pivotal bolt C and moving the lever D to the right or left before replacing said pivotal bolt or nut the operator may shorten  
 45 or lengthen, as desired, the short arm  $d'$  of the lever D.

Beneath the forward end of the arm  $d'$  of the lever D, I secure a lug  $e$ , to which I pivotally secure by means of a bolt  $e'$  and nut  $e^2$   
 50 the upper end of the segmental ratchet-bar E. This bar E is relatively narrow and wide and adapted to conveniently enter a suitable aperture  $e^3$  longitudinally arranged through the spreader-block  $b^5$ . The lower margin or  
 55 rather the convex surface of the arm E is provided with ratchet-teeth  $e^4$ , adapted to engage a suitable detent F. This detent consists of a plate secured to the front and lower surface of the uprights B and the spreader-block  
 60  $b^5$ , and is provided with a suitable aperture  $f$ , corresponding with the opening  $e^3$  in the spreader-block  $b^5$ , the lower margin of said aperture  $f$  constituting the detent proper or point of contact of the ratchet-teeth  $e^4$  with  
 65 said plate F. A chain  $f'$  may be suitably secured to the rear end of the ratchet-arm E,

whereby the latter may be lifted to release it from the detents.

The upper margin of the short arm  $d'$  of the lever D is provided, preferably, with three  
 70 guide-plates, which assist in holding the draw-bar in position upon the end of the said lever. These plates are as follows: The end of the plate G is suitably bent and secured by screws  $g$  to the lever. The forward margin of said  
 75 plate G is upturned to form a flange  $g'$ . The center plate  $G'$  is upturned at both sides to form flanges  $g^2$ , as shown, and these two plates G and  $G'$  are about the same width as the width of the lever. The plate  $G^2$  is longer  
 80 than the width of the lever, as shown clearly in Fig. 2, it projecting out on either side of said lever, and its margins being upturned at  $g^3$  to form flanges are bent at an angle, as shown in Fig. 2, for the purpose of more  
 85 readily engaging the different-sized heads of the draw-bars. Of course the proportions of these plates G,  $G'$ , and  $G^2$ , as well as the other parts of the apparatus, will be varied as desired. In some instances I may dispense en-  
 90 tirely with the truck-wheels  $A'$ , moving the apparatus about by hand, but I much prefer the portable arrangement illustrated.

When it is desired to take a draw-bar from beneath a car, the latter is jacked up, as  
 95 above described, and my truck is moved toward the car until the short arm  $d'$  of the lever D is entirely beneath the draw-bar, with the inner end of the latter resting upon the guide-plate G and against the flange  $g'$ , and with  
 100 the side flanges  $g^2$  of the middle plate  $G$  upon either side of the draw-bar, and with the head of the latter resting between the inclined guide-flanges  $g^3$ . This position is readily determined by shifting the lever backward and  
 105 forward, as indicated, by changing the position of the pivotal bolt C with respect to the corrugated retaining-plate  $d^3$ . A slight tension is put upon the lever D by pressing downwardly upon the handle  $d$ , and the lever  
 110 is then locked in position by some one of the teeth of the ratchet-arm E engaging the detent F. The fastenings to the draw-bar may then be loosened and the draw-bar removed  
 115 by simply backing the truck out from its position under the car, the lever remaining of course locked in position with the draw-bar upon it. The necessary repairs having been  
 120 made the truck is pushed back underneath the car until the draw-bar is in proper position, and when the latter is secured to the car the lever D will be lowered and the apparatus taken away.

If it is desired to remove the draw-bar from the truck, the ratchet-bar E is lifted from en-  
 125 gagement with the detent and the end of the lever carrying the bar lowered until it rests in contact with the platform, the end of the lever being to this end beveled off, as shown, so as to permit the latter to rest firmly upon  
 130 the platform. The end guide  $g'$  will obviously prevent the draw-bar from slipping

from the lever while it is being lowered. After it has been lowered it will be easy to tilt it over in any desired direction and lower it or allow it to fall the remainder of the distance to the ground. The placing of a bar upon the truck will be substantially the reverse of the above and may obviously be accomplished with very little exertion.

It will thus be seen that the whole operation for handling the draw-bar may be performed by a single individual, by the use of my apparatus, without the exercise of an undue amount of strength on his part and without the slightest danger to himself. The device is neat, portable, has few parts to get out of order, and is easily repaired.

In Fig. 5 I have shown a modification in which the detent  $F'$ , which engages and holds the ratchet-bar, has the form of a plate or base portion  $f$ , which is secured upon the platform at a point some distance in rear of the standard and is provided with an upturned portion or flange  $f'$ , which forms the detent proper. The bar  $D$  is also shown as adjusted differently in said Fig. 5.

I claim as my invention—

1. An apparatus for handling draw-bars comprising a wheeled main frame, an upright standard mounted upon the main frame, a lever adjustably and pivotally mounted between its ends upon said standard so as to oscillate in a vertical plane, and means for holding a draw-bar longitudinally upon one end of the lever, said means comprising lat-

eral supports upon the lever arranged to project above the supporting-surface of the latter at each side thereof.

2. An apparatus for handling draw-bars comprising a wheeled main frame, an upright standard consisting of two members held parallel with each other and at a distance apart by means of space-blocks, mounted upon said main frame, a lever arranged to extend between said standard members and provided with a longitudinal series of pivot-apertures, there being a vertical series of pivot-apertures provided through the standard members, a pivot-pin for adjustably connecting said lever with the standards, means for locking the lever at a desired angle with relation to the standards, comprising a segmental-shaped ratchet-bar connected with one end of the lever and arranged to extend between the standard members, a detent-plate mounted upon the standard, with which said ratchet-bar is adapted to engage, and means for holding a draw-bar longitudinally upon one end of the lever, comprising lateral and end bar-supports upon the lever arranged to project above the supporting-surface of the latter.

In testimony that I claim the foregoing as my invention I affix my signature, in presence of two witnesses, this 17th day of January, A. D. 1896.

JOACHIM SCHULTZ.

Witnesses:

TAYLOR E. BROWN,  
WILLIAM S. HALL.