

(No Model.)

D. V. CASH.
WRENCH.

No. 436,647.

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Fig. 1.

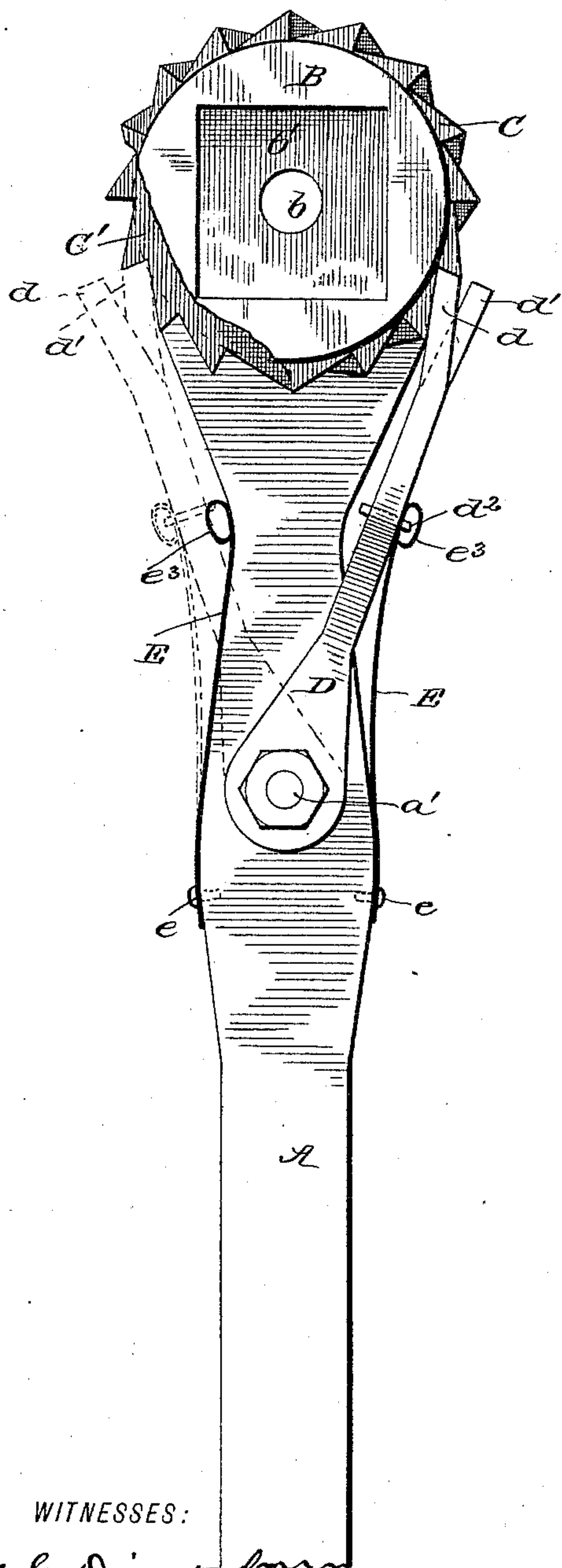
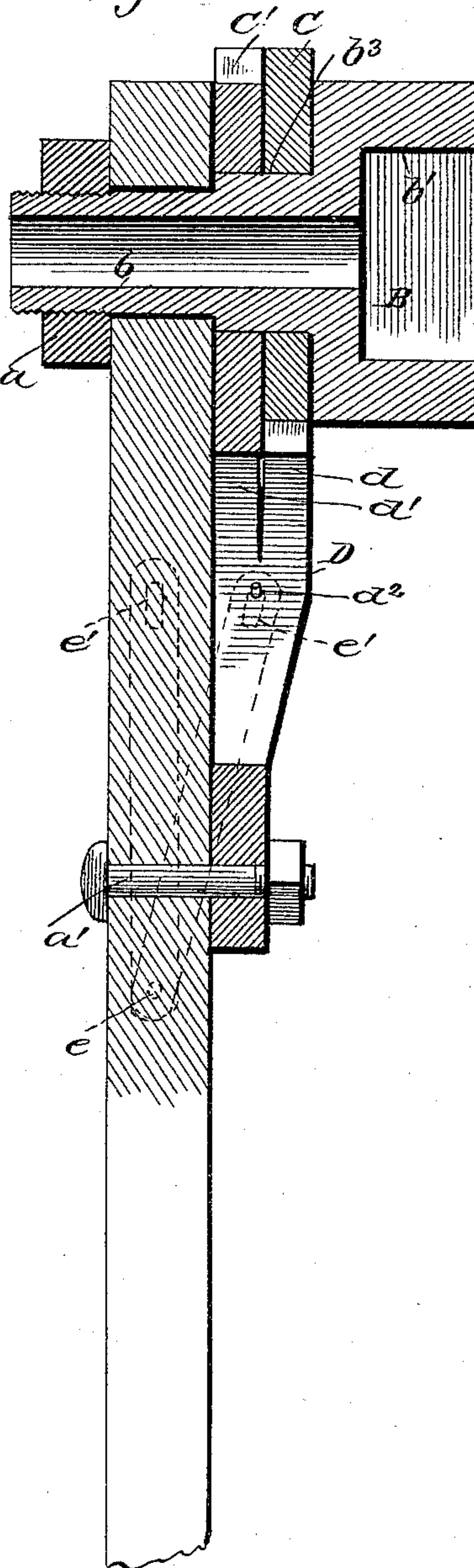


Fig. 2.



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To all whom it may concern:

Be it known that I, DAVID V. CASH, of Johnson City, in the county of Washington and State of Tennessee, have invented a new and useful Improvement in Wrenches, of which the following is a specification.

My invention relates generally to wrenches and particularly to that class thereof known as "ratchet-hub" or "nut" wrenches, and is particularly well adapted for railroad and bridge building purposes; and the object of my invention is to provide a device of the character described that shall be simple, durable, and safe in its operation; and with these objects in view my invention consists in the peculiar construction of various parts and the novel manner which they are combined, as shown in the accompanying drawings and referred to hereinafter.

In the drawings forming a part of the specification, Figure 1 is a top plan view of my device, and Fig. 2 is a vertical longitudinal section of the same.

In carrying out my invention I employ a handle or lever A, one end of which is apertured and receives the tubular portion *b* of the socketed hub B, said handle turning freely upon the said portion, and is secured thereon by means of the nut *a*. The hub B is provided with a socket or recess *b'*, which may be made any preferred shape to receive any style of nut. The portion *b* upon which the handle turns is made tubular, the bore of the same opening into the recess *b'*, whereby an opening is had for the portion of the bolt projecting through the nut held in the socket or recess *b'*. Square shoulders *b³* are formed upon the tubular portion *b* just beneath the socket *b'*, and upon said squared portion between the socket and handle are arranged two ratchet-disks C and C', the peripheries of which have ratchet-teeth cut upon diagonally-opposite bevels, as shown. The ratchet-disks fit snugly upon the shoulder *b³* and move with the same.

An operating-pawl D is pivoted to the handle A by the bolt *a'*, said pawl being arranged upon the same side of the handle as the ratchet-disks. The pawl is thicker near its forward end and is bifurcated horizontally, thus forming the upper and lower legs *d* and *d'*, said

legs being spread, as clearly shown, the leg *d* being adapted to engage the disk C and the leg *d'* to engage the disk C'.

The pawl D is provided with a pin *d²*, which extends entirely through the same and projects laterally on each side, and upon each side of the handle A are secured the leaf-springs E, said springs being secured at *e*, and at their opposite ends are slotted longitudinally, as at *e'*, said spring being adapted to bear upon the pawl and hold the same in engagement with its respective disks, the slotted end fitting over the pin *d²*. The springs are provided with finger-pieces *e³*, by means of which they can be lifted in and out of engagement with the pin.

The operation of a wrench constructed as described is as follows: The nut to be run on or off is placed in the socket *b'*, the bolt of said nut extending into the bore of the hub, as shown in dotted lines. The pawl is then swung around upon its pivot until one of its legs engages its respective disks. The spring on the adjacent side of the handle is then lifted upon the pin and the wrench is ready to turn the nut, and by simply vibrating the handle backward and forward the nut is run either on or off, according to the position of the pawl.

In Fig. 2 the pawl is shown in solid lines in position for running on a nut and in dotted lines in the position for turning off a nut, said latter position being attained by simply releasing the spring E, turning the pawl entirely around upon its pivot, and throwing the opposite spring E' in place upon the pin *d²*.

Having thus described my invention, what I claim as new is—

1. In a wrench, the combination, with a handle, of a socketed hub upon which the said handle turns, a pair of ratchet-disks between the handle and socketed hub, said disks having their teeth arranged in reverse directions, and a rotatably reversible pawl pivoted to the handle and having oppositely-disposed prongs adapted to engage their respective ratchet-disks, substantially as shown and described.

2. In a wrench, the combination, with a handle, of a socket having a shouldered tubular hub upon which the handle turns, a pair

of ratchet-disks arranged upon the shouldered portion of the hub, a rotatably reversible pawl pivoted to the handle and having oppositely-disposed prongs adapted for engagement with their respective disks, and
5 the springs pivoted to the sides of the handle and adapted to be swung up to press upon

either side of the pawl, substantially as and for the purpose described.

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Witnesses:

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