April 14, 1925. 1,533,381

E. L. BURTON

PORTABLE DRILL

Filed June 8, 1923 2 Sheets-Sheet 1

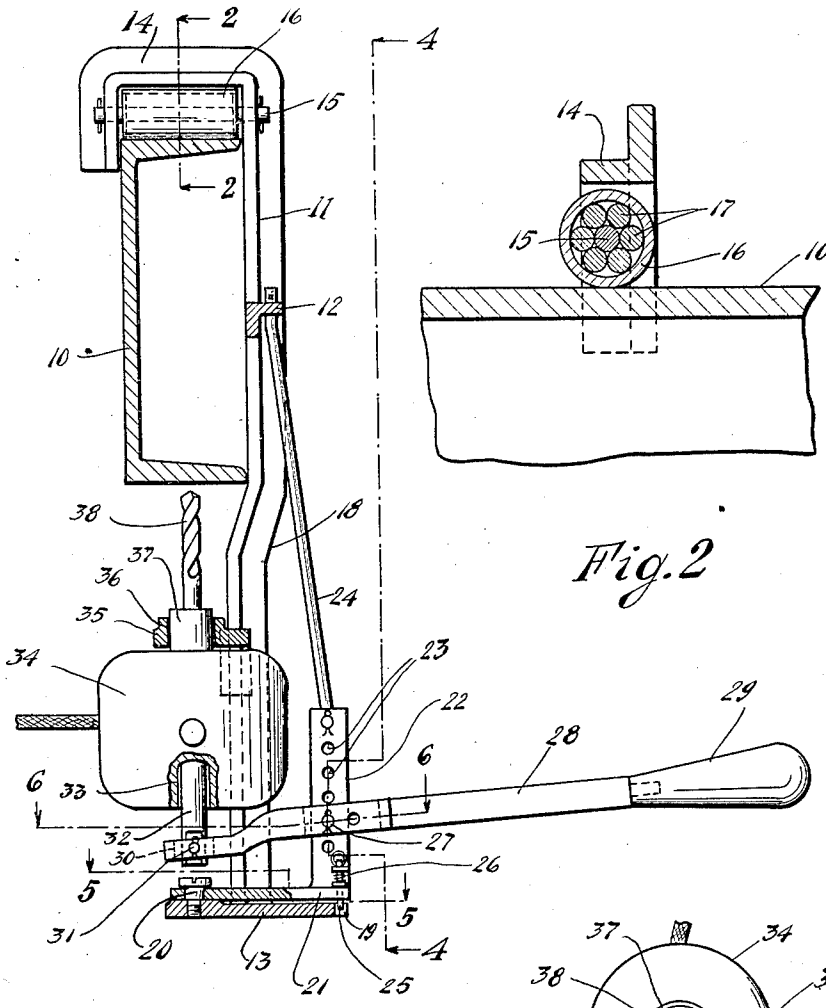



Fig. 1




Fig. 2

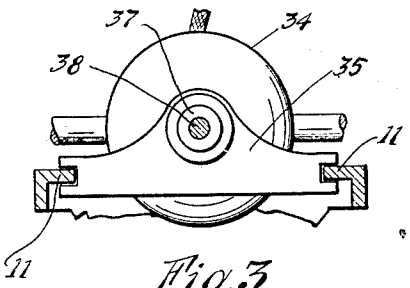



Fig. 3

Witnesses:
W. Edmund Hall
H. S. Reitman

Inventor:
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His Attorney

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PORTABLE DRILL

Filed June 8, 1923 2 Sheets-Sheet 2

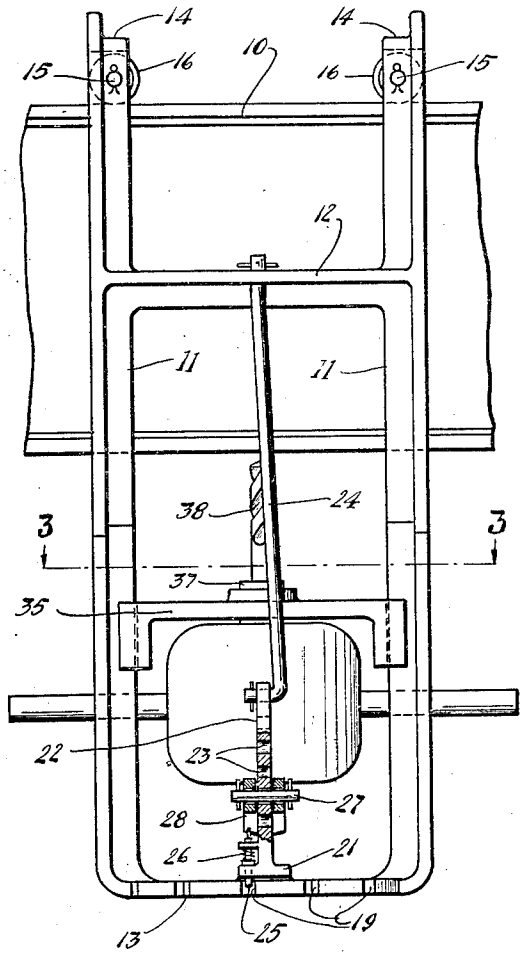



Fig. 4

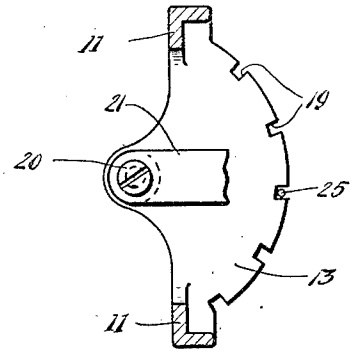



Fig. 5

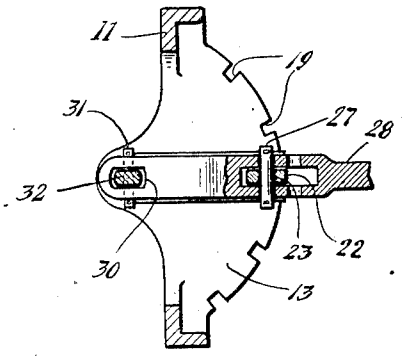



Fig. 6

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Patented Apr. 14, 1925. 1,533,381

# UNITED STATES PATENT OFFICE.

EDWARD L. BURTON, OF SANDWICH, ILLINOIS.

## PORTABLE DRILL.

Application filed June 8, 1923. Serial No. 644,112.

*To all whom it may concern:*

Be it known that I, EDWARD L. BURTON, a citizen of the United States, and a resident of Sandwich, county of De Kalb, and State of Illinois, have invented certain new and useful Improvements in Portable Drills, of which the following is a specification.

This invention relates to portable drills and more particularly to devices of this character to be used for supporting a power operated drill, so as to operate upon the under side of the center sills of railway cars, or in similar situations where it is inconvenient to drill upwardly without a support.

Other objects will appear hereinafter.

The invention consists in the combinations and arrangements of parts hereinafter described and claimed.

The invention will be best understood by reference to the accompanying drawings forming a part of this specification, and in which,

Fig. 1 is a side view partially in section of the invention as applied to a channel bar of the type ordinarily used as center sills of railway cars;

Fig. 2 is a sectional view of the invention upon the line 2—2 of Fig. 1;

Fig. 3 is a fragmentary view of the invention partially in section, upon the line 3—3 of Fig. 4;

Fig. 4 is a view partially in section upon the line 4—4 of Fig. 1;

Fig. 5 is a partial sectional view of the invention upon the line 5—5 of Fig. 1, and

Fig. 6 is a partial sectional view of the invention upon the line 6—6 of Fig. 1.

The invention is primarily intended for use in boring holes in the lower flange of the channel members which ordinarily form the center sills of railway cars, in order to apply connecting plates for strengthening purposes or otherwise, but it will be appreciated that the device is applicable in any and all situations wherein it is desired to suspend a drill in order to operate upon the under side of the work, the device including means for bodily holding the drill to its work, with the added advantage that the drill is guided in its movements.

Referring to the drawings, 10 represents a cross sectional view of a channel bar, which is of the type ordinarily used as center sills of railway cars, although it is obvious that it might be desirable to operate on similar work in many other situations. The device includes a frame preferably made of longitudinally disposed angle bars 11, a transverse bar 12, and a base 13. The ends of the bars 11 have hook portions 14 adapted to be hooked over the channel bar 10, and mounted in each of the hook portions 14 is a shaft 15 upon which is mounted a roller 16, there preferably being roller bearings 17 disposed between the inner periphery of the roller 16 and the shaft 15. The rollers 16 are for the purpose of reducing the friction incident to moving the frame along the channel bar 10. The bars 11 of the frame are preferably offset as shown at 18 so as to dispose the base 13 in a position under the member 10. The base 13 of the frame is preferably segmental in shape as shown in Figs. 5 and 6, and the edge of such base is preferably provided with notches 19. Pivotally mounted upon the base 13 as shown at 20 is a supporting member 21, said support including an upright 22 preferably provided with a plurality of adjusting apertures 23, and pivotally attached to the upper end of the upright member 22 is a brace 24, the upper end of which is pivotally and slidably engaged in the cross bar 12 as clearly shown in Figs 1 and 4, thus mounting the supporting member for swinging movement, which swinging movement may be arrested by means of a latch 25 adapted to normally engage the notches 19 under the urge of a spring 26, such latch being manually removable to permit swinging of the support 21.

Pivotally mounted upon the upright member 22, by means of a removable pin 27, is a lever 28 the outer end of which is provided with a handle 29 for operating the same. The inner end of the lever 28 is preferably provided with a slot 30, in which is pivotally mounted, by means of a pin 31, a stud 32, which is adapted to be disposed in an axial recess 33, ordinarily present in a common form of electric drill as shown at 34 when the ordinary adjusting pin has been removed therefrom, the lever through the medium of the stud 32 being adapted to bodily raise the drill 34 into working position. The movement of the drill is guided by means of a cross bar 35 slidably mounted upon the inner edges of the side bars 11, the bar 35 being provided with an aperture 36 to receive the collar or boss 37 ordinarily present upon the drill 34, the bit of the drill being illustrated at 38 in position so that

when the lever 28 is pressed downwardly, the bit 38 will engage the under surface of the channel member 10.

By the above described arrangement it will be apparent that when the lever 28 is pressed downwardly, such motion is transmitted to the stud 32 thereby bodily raising the drill 34, the cross bar 35 sliding upon the edges of the side bars 11 serving to guide the drill in its movement, and to compensate for the arcuate movement of the end of the lever 28 by reason of its pivotal mounting. The length of stroke of the drill may be varied by adjusting the pin 27 with various of the apertures 23 as will be readily understood. It is here noted that the pivotal mounting 20 is directly beneath the axis of the drill 34, and this is for the purpose of turning the support 21 so that the lever is turned partially against the side of the frame in order to avoid obstructions against which the lever might strike, this feature being particularly designed to permit the drilling of holes in the center sills of railway cars at points at the inner sides of the wheels of the trucks of the cars, it being the practice to remove the center sills and trucks of the cars from the body, when the center sills are drilled for the purpose of attaching strengthening plates thereto.

While I have illustrated and described the preferred form of construction for carrying my invention into effect, this is capable of variation and modification without departing from the spirit of the invention. I, therefore do not wish to be limited to the precise details of construction set forth, but desire to avail myself of such variations and modifications as come within the scope of the appended claims.

Having described my invention what I claim as new and desire to secure by Letters Patent, is:

1. A device of the character described comprising a frame including a base member and upright members having hook portions for suspending the frame; a power driven machine provided with a recess in its bottom; a supporting member pivotally mounted on said base member on a pin in line with the axis of said machine; an upright on said supporting member; a lever adjustably mounted on said upright and having a pin pivoted to its forward end and engaging in said recess, said lever and upright being swingable laterally towards said frame; and means slidably mounted on said frame for guiding said machine in its vertical movement.

2. A device of the character described including a supporting frame; a power driven machine adapted for connection with said frame; a supporting member pivotally mounted on a pin in line with the axis of said machine; means for moving said machine to different working positions; and means for guiding said machine during such movements, substantially as described.

3. A device of the character described comprising a supporting frame; a power driven machine adapted for connection with said frame, said power driven machine being provided with a recess and a bit receiving collar in alinement therewith; and means for moving said machine and collar axially to different working positions, said means including a lever mounted on said frame, there being a pin pivotally mounted on said lever and arranged to be loosely disposed in said recess to support said machine, substantially as described.

4. A device of the character described comprising a supporting frame; a power driven machine adapted for connection with said frame, said power driven machine being provided with a recess and a bit receiving collar; means for moving said machine and collar axially to different working positions, said means including a lever mounted on said frame, there being a pin pivotally mounted on said lever and arranged to be loosely disposed in said recess; and a member slidably mounted on said frame and arranged for attachment to said collar to guide the same axially during such movement, substantially as described.

5. A device of the character described comprising a frame including hook members adapted to hook over a channel bar to support and retain said frame in working position thereon; a motor with bit receiving means suitably mounted on said frame; a supporting member mounted on said frame with means in axial alinement with said motor; an upright on said member; a lever fulcrumed on said upright and adjustable vertically thereon; and means on said lever to support and move said motor and bit receiving means axially during operation.

6. A device of the character described comprising a supporting frame; a power driven machine arranged for connection with said frame; a supporting member mounted on said frame, said supporting member including an upright; means mountable in various positions on said upright arranged to engage said machine for moving the same axially to different positions; and means for guiding said machine axially on said frame, substantially as described.

7. A device of the character described comprising a frame having a base member and upright members with hook portions for suspending the same, there being anti-friction rollers mounted in said hook portions; a power driven machine arranged for connection with said frame, said machine having a recess; a supporting member mounted on said base member on a pin in line with the axis of said machine; a lever mounted

on said supporting member, said lever having a pin pivotally connected thereto and being adapted to be disposed in the recess in said machine; and a bar slidably mounted on said frame and adapted for attachment with said machine to guide the same in its movements, substantially as described.

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

EDWARD L. BURTON.

Witnesses:

FREDA C. APPLETON,

MARGARET AUER.