July 28, 1936. W. A. SMITH, SR 2,048,757

GUIDE SADDLE FOR ROCK DRILLS

Filed Sept. 19, 1934

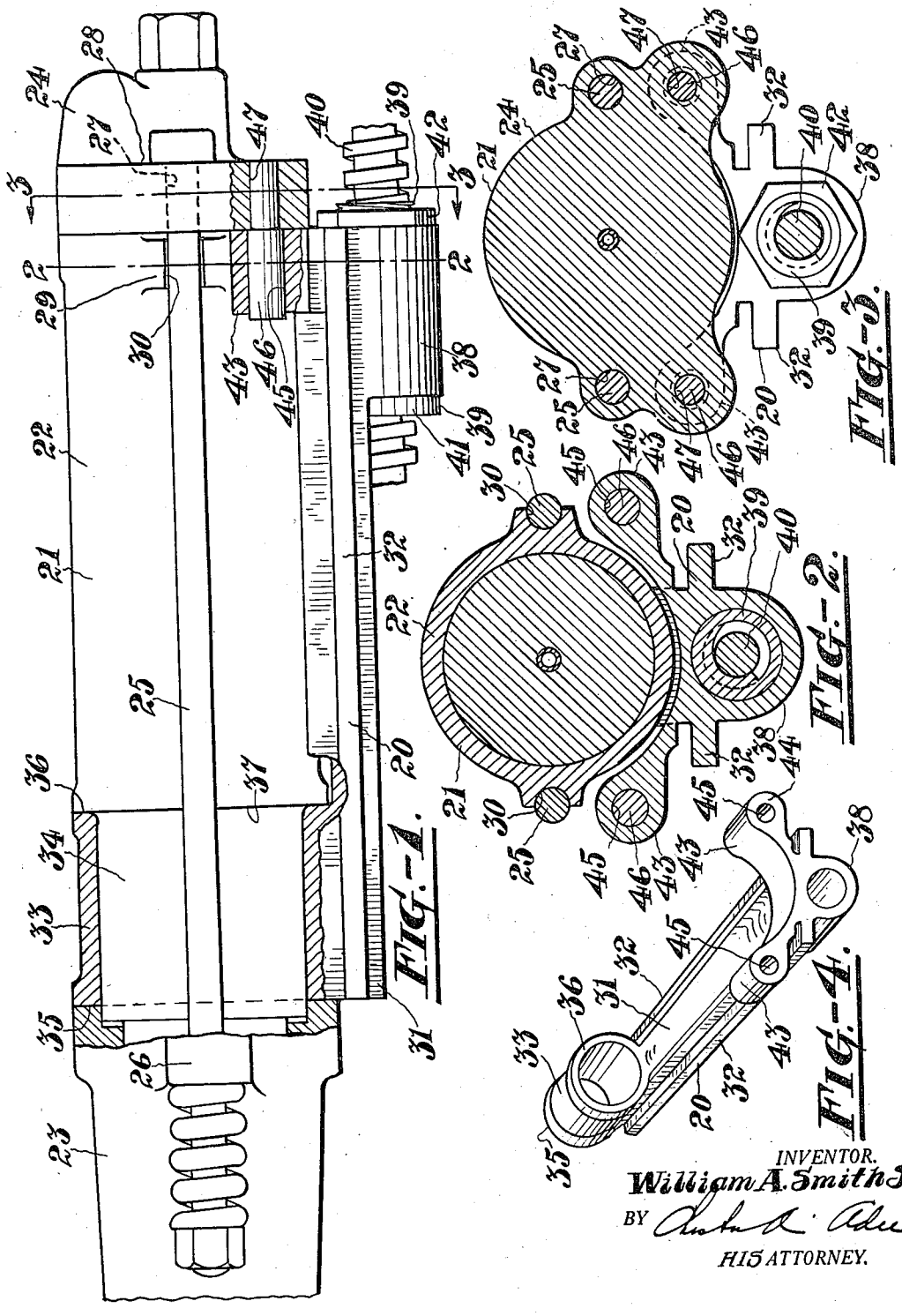


FIG.-1.

FIG.-2.

FIG.-3.

FIG.-4.

INVENTOR.
William A. Smith Sr
BY
HIS ATTORNEY.

Patented July 28, 1936 2,048,757

UNITED STATES PATENT OFFICE

2,048,757

GUIDE SADDLE FOR ROCK DRILLS

William A. Smith, Sr., Athens, Pa., assignor to Ingersoll-Rand Company, Jersey City, N. J., a corporation of New Jersey

Application September 19, 1934, Serial No. 744,640

4 Claims. (Cl. 255—45)

This invention relates to rock drills, and more particularly to a guide saddle for rock drills of the type which are mounted slidably in supporting shells whereby they are held in correct relationship with respect to the work.

One object of the invention is to reduce the expense of maintenance of rock drills of this type to a minimum by providing the rock drill with detachable guide ribs which may be replaced when reduced to a state of unserviceability through wear without necessitating the additional expense of replacing a comparatively costly casing part, and another object is to equip the rock drill with a guide saddle that will remain secured rigidly in the assembled position on the rock drill and which may be conveniently and expeditiously attached to the rock drill.

Other objects will be in part obvious and in part pointed out hereinafter.

In the drawing accompanying this specification and in which similar reference numerals refer to similar parts,

Figure 1 is a longitudinal elevation, partly broken away, of a guide saddle constructed in accordance with the practice of the invention and showing it applied to a rock drill,

Figures 2 and 3 are transverse views taken through Figure 1 on the lines 2—2 and 3—3, respectively, and

Figure 4 is a perspective view of the guide saddle.

Referring more particularly to the drawing, 20 designates the guide saddle and 21 a rock drill to which the guide saddle is applied.

The rock drill 21, of which only the casing parts are shown for the sake of simplicity of illustration, comprises a cylinder 22 and front and back heads 23 and 24, respectively, which are secured to the cylinder by a pair of side rods 25 disposed on opposite sides of the rock drill in the usual manner. The side rods 25 extend through lugs 26 on the front head 23 and through apertures 27 in a flange 28 carried by the back head 24. On the cylinder 22 are the usual lugs 29 which are spaced with respect to each other to provide a slot 30 for the accommodation of the side rods.

The guide saddle 20, constructed in accordance with the practice of the invention, comprises a beam 31 which, in the assembled position of the saddle, lies beneath the rock drill and extends longitudinally thereof. On the opposite sides of the beam 31 are ribs 32 to extend, slidably, into the guideways of a shell (not shown) but which may be of a well known type commonly employed for guiding and maintaining the rock drill in the correct relationship with respect to the rock being drilled.

On the front end of the beam and forming an integral part thereof, is a sleeve 33 which embraces a reduced portion 34 constituting the front extremity of the cylinder 22. The front end 35 of the sleeve serves, in the present instance, as an abutment for the rear end of the front head 23, and the rear end 36 of the sleeve abuts a shoulder 37 on the cylinder 22. Thus, when the side rods 25 are manipulated to secure the casing parts of the rock drill together the sleeve 33 will be clamped rigidly between the front head 23 and the shoulder 37.

Beneath the beam 31 and at the rear end thereof is a lug 38 which is bored to receive a feed nut 39. The interior of the feed nut 39 may be suitably threaded for engagement with the threads of the feed screw 40 whereby the rock drill is actuated longitudinally of the supporting shell. The feed nut may be held against rotary movement within the lug 38 in any suitable manner. It has a head 41 which seats against the front end of the lug 38 and a nut 42 is threaded to the rear end of the feed nut to secure the feed nut against longitudinal movement with respect to the lug 38.

Means are provided for preventing relative lateral movement between the rear ends of the rock drill and the guide saddle and also to prevent relative rotary movement between the two. To this end the saddle is provided with a pair of laterally extending lugs 43 adjacent its rear extremity and the rearward surfaces 44 of the lugs are flush with the corresponding surface of the cylinder. The lugs 43 are provided with apertures 45 wherein are arranged pins 46 that extend into apertures 47 in the flange 28. The pins 46 are preferably press-fitted into either the lugs 43 or the flange 28 and have a sliding fit into the registering apertures of the other member.

In assembling the saddle on the rock drill the reduced portion 34 of the cylinder 22 is first entered into the sleeve 33 and the back head 24 is thereafter seated against the rear end of the cylinder in position to bring the apertures 45 and 47 to register with each other so that the pins 46 will be seated in both. The side bolts 25 may then be tightened to clamp all the casing parts of the rock drill firmly together and also to clamp the rock drill securely to the guide saddle.

I claim:

1. A guide saddle for rock drills, comprising in combination with a drill casing, side rods to hold

the casing in alignment, a beam having guide ribs thereon, a sleeve on the beam to embrace an intermediate portion of the drill casing, independently of the side rods a pair of lugs on the saddle, and pins in the lugs extending into another portion of the drill casing to prevent relative rotary movement between the saddle and the casing.

2. A guide saddle for rock drills, comprising in combination with a cylinder and a back head having side rods to hold them in alignment, a beam having guide ribs, a sleeve on one end of the beam to embrace the cylinder independently of the side rods, lugs on the other end of the saddle, and pins in the lugs and the back head to prevent relative rotary movement between the saddle and the cylinder.

3. In combination with a rock drill having its casing parts held in alignment by side rods, a guide saddle comprising a beam seating with one end against a casing part and having longitudinal guide ribs, means integral with the beam adapted to embrace a reduced portion of the rock drill casing without engagement with the side rods and seating with its ends against certain of the casing parts, and means at another part of the beam to engage the rock drill to prevent relative rotary movement thereof.

4. In combination with a rock drill having its casing parts held in alignment by side rods, a guide saddle comprising a beam seating with one end against a casing part and having longitudinal guide ribs, collar means at the other end of the beam and integral therewith adapted to encircle a reduced portion of the rock drill casing without engagement with the side rods and seating with its ends against certain of the casing parts, and means at the rear part of the beam to engage the rock drill to prevent relative rotary movement thereof.

WILLIAM A. SMITH, SR.