Oct. 19, 1926. 1,603,473

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ROCK DRILLING APPARATUS

Filed Nov. 24, 1925 2 Sheets-Sheet 1

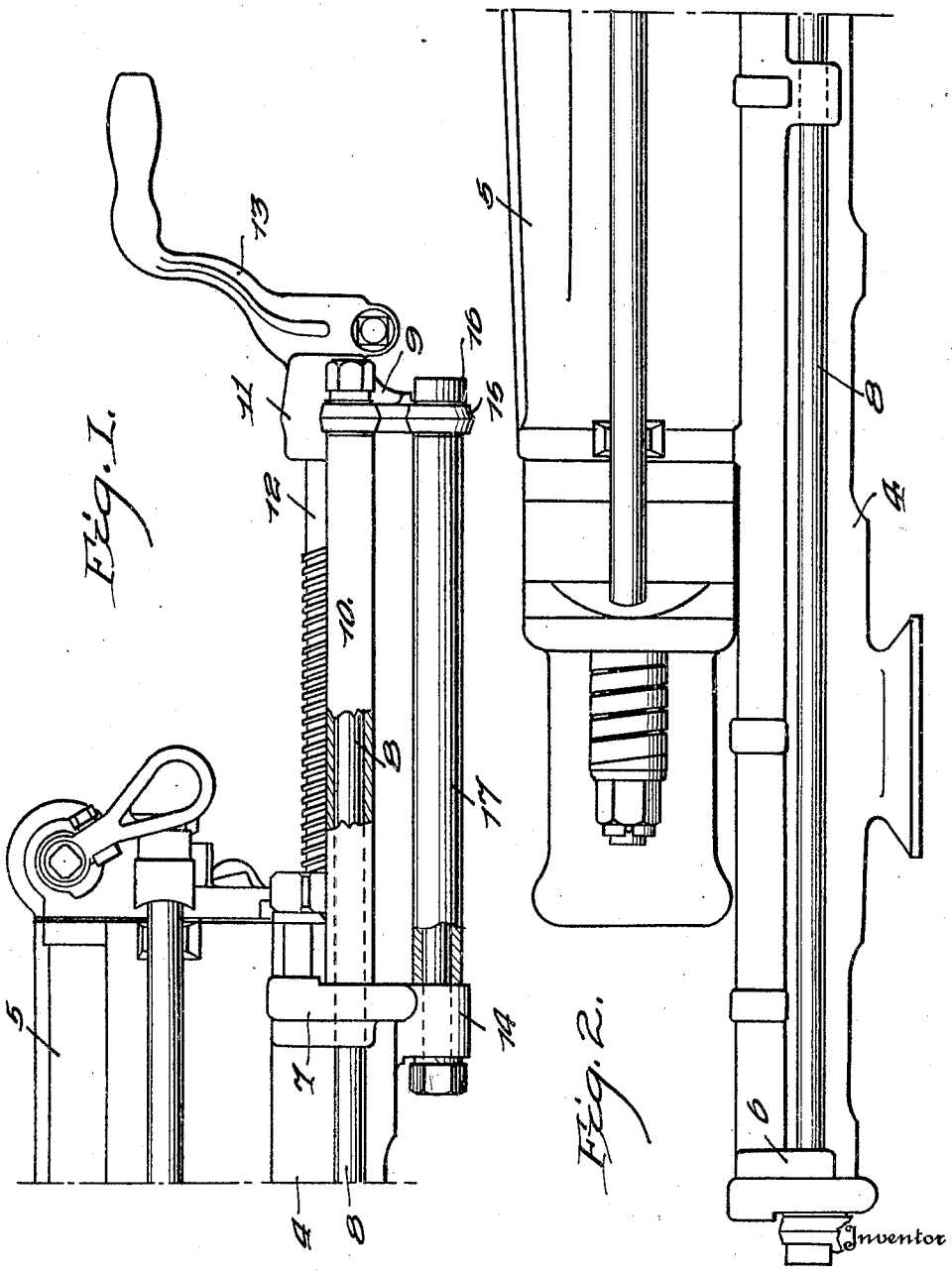

Fig. 1.

Fig. 2.

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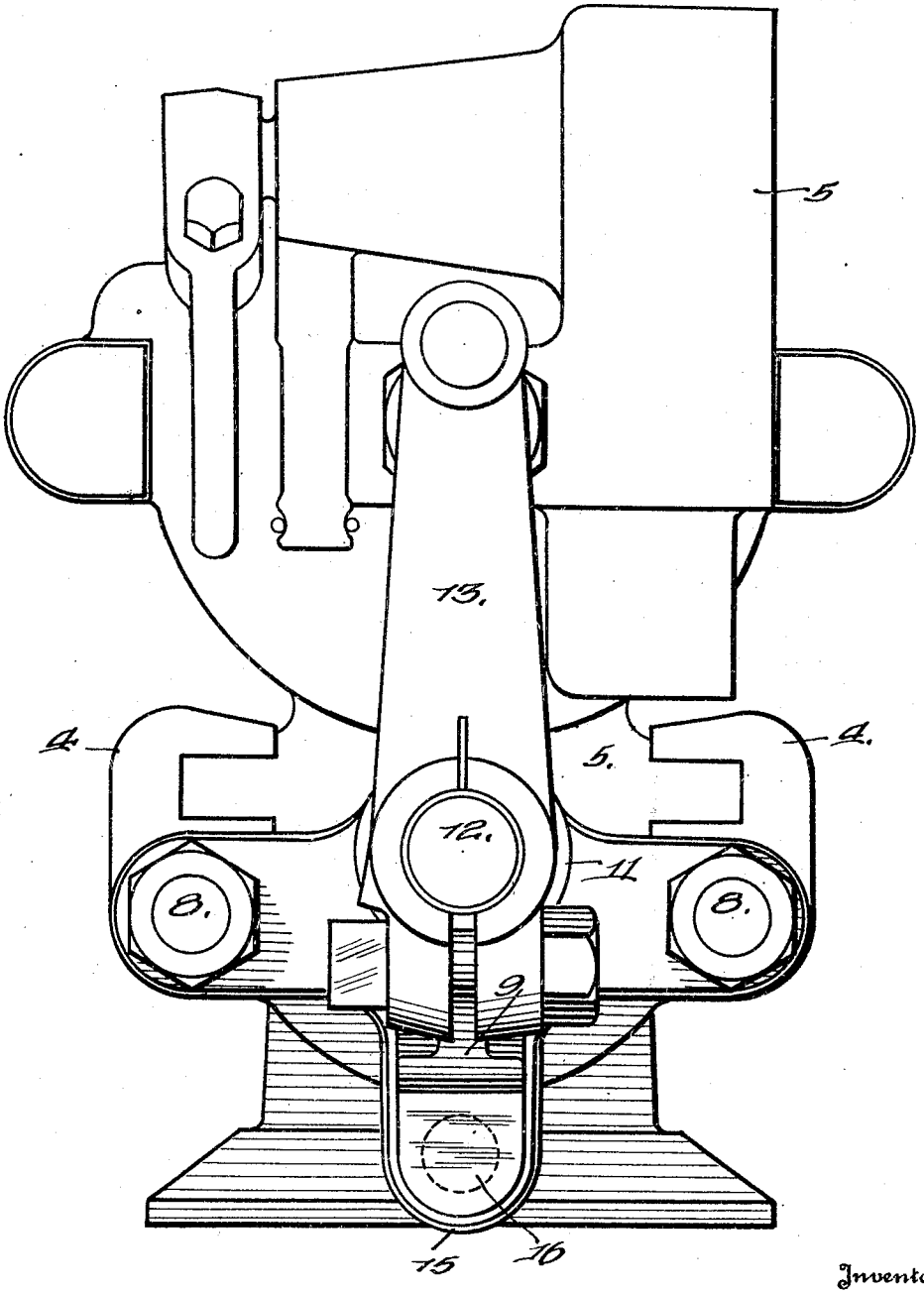

Fig. 3.

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1,603,473

UNITED STATES PATENT OFFICE.

AUGUST H. KATTERJOHN, OF DENVER, COLORADO, ASSIGNOR TO THE DENVER ROCK DRILL MANUFACTURING COMPANY, OF DENVER, COLORADO, A CORPORATION OF DELAWARE.

ROCK-DRILLING APPARATUS.

Application filed November 24, 1925. Serial No. 71,132.

The present invention relates more particularly to means for supporting the mounting of the feed screw of a guide shell so that the same is made rigid and elimination of vibration to a very material degree is obtained. In that type of drilling apparatus in which the drilling tool is slidably mounted in a shell, it has been found that with the modern powerful machine considerable vibration of an objectionable character is transmitted to the handle of the feed screw. This is especially true when the machine is being backed out of a drilled hole. The present invention has been found to overcome this difficulty.

In the accompanying drawings:

Figure 1 is a side elevation of the rear portion of a drilling apparatus equipped with the novel mechanism,

Figure 2 is a similar view of the front portion of the machine, these two views showing together the complete machine,

Figure 3 is a rear elevation.

In the embodiment disclosed, the guide shell is designated 4, and may be of any well known or desired type. In it is slidably mounted, as usual, the drilling tool or motor, designated 5.

The shell is provided at the opposite sides of its front end with bosses 6 and also has at the opposite sides of its rear end other bosses 7. Through these bosses extend side bolts 8 that project beyond the rear end of the shell, and have mounted on their rear ends a yoke 9. Located on the bolts 8 between the rear bosses 7 and the yoke 9 are spacing sleeves 10. The yoke 9 is provided between the bolts 8 with a journal box 11, in which is journaled a feed screw 12, having the usual threaded engagement with the drilling motor 5. This feed screw has a hand crank 13 on its rear end, by means of which it can be rotated.

The rear end of the shell 4 has a centrally depending boss 14, and the yoke 9 has a corresponding centrally depending boss 15. Connecting these two bosses 14 and 15 is a brace or tie bolt 16, on which is preferably located a spacing sleeve 17 that is interposed between the bosses 14 and 15. The bolt, it will be noted particularly by reference to Figure 3, is disposed directly beneath the feed screw and equidistant from the side bolts 8. It has been found that with this construction the rear yoke is very much more firmly supported and vibration is eliminated, thus holding the crank and the bearing for the feed screw so that it can be more agreeably operated.

From the foregoing, it is thought that the construction, operation and many advantages of the herein described invention will be apparent to those skilled in the art, without further description and it will be understood that various changes in the size, shape, proportion and minor details of construction may be resorted to without departing from the spirit or sacrificing any of the advantages of the invention.

What I claim, is:

1. In a rock drilling apparatus, the combination with a guide shell and a rock drill slidably mounted therein, of a rear extension for the shell comprising spaced members, a yoke connecting the same, a feed screw for the drill journaled in the yoke, and a brace member extending from the yoke to the shell at one side of the screw.

2. In a rock drilling apparatus, the combination with a guide shell and a rock drill slidably mounted therein, of a rear extension for the shell comprising spaced members, a yoke connecting the same, a feed screw for the drill journaled in the yoke, and a brace member extending from the yoke to the shell below the screw and generally longitudinally of the same and the side members.

3. In a rock drilling apparatus, the combination with a guide shell and a rock drill slidably mounted therein, of a rear extension for the shell comprising spaced members, a yoke connecting the same, a feed screw for the drill journaled in the yoke, a boss depending from the rear end of the shell, a boss depending from the yoke, and a tie bolt connecting the bosses.

4. In a rock drilling apparatus, the combination with a shell having bosses on the opposite sides of its front and rear end portions, side bolts extending through the front and rear side bosses and beyond the rear end of the shell, a yoke mounted on the rear end of the side bolts, a third bolt extending from the lower portion of the boss to the rear lower portion of the shell, and a feed screw for the drill journaled in the yoke.

5. In a rock drilling apparatus, the combination with a shell having bosses on the opposite sides of its front and rear end portions and also having a depending boss at its rear end, side bolts extending through the front and rear side bosses and beyond the rear end of the shell, a yoke mounted on the rear end of the side bolts and having a depending boss, a third bolt extending from the lower portion of the boss to the rear lower portion of the shell, and a journal box for an adjusting screw formed in the yoke between the bolts.

In testimony whereof, I affix my signature.

AUGUST H. KATTERJOHN.