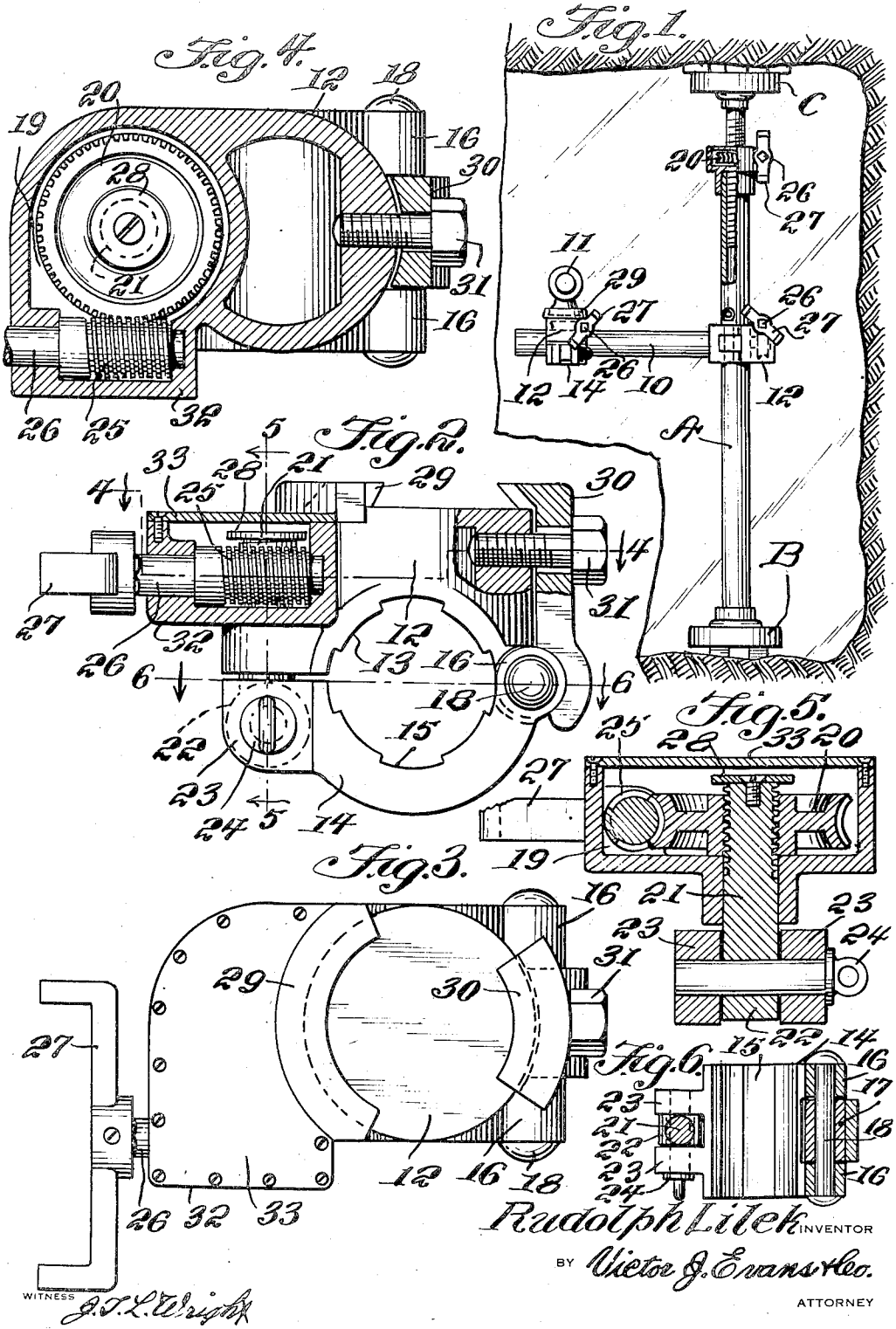
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ROCK DRILL CLAMP

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ROCK DRILL CLAMP

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2 Claims. (Cl. 24—248.5)

The invention relates to a clamp and more especially to the type employed for rock drills as used in mining operations in hard rock mines.

As is well known to all persons acquainted with mining operations, such as hard rock mining, the ordinary rock drill is mounted on a guide or shell which in turn is secured to a machine bar clamp and said clamp is secured to a post or machine bar by means of bolts fastening the two parts of the clamp together around said machine bar, and ordinarily requiring two men on the end of a long wrench to properly tighten said clamp.

It is the aim of the present invention to overcome and relieve this laborious and double-manned job so there has been devised a clamp that can be tightened and this tightening accomplished by properly gearing up the operation of the clamp so that a single man will be able to tighten said clamp with a small wrench and by one hand.

Another aim of the present invention is to provide a clamp of this character, wherein the same will firmly and securely tighten about a support so as to assure a rigid coupling without liability of slippage or displacement under severe usage or when being subjected to the drilling operation when the clamp is in use with a rock drill.

A further aim of the present invention is the provision of a clamp of this character which is simple in construction, thoroughly reliable and efficient in its purpose, readily and easily operated, strong, durable, and inexpensive to manufacture and install.

With these and other objects in view, the invention consists in the features of construction, combination and arrangement of parts as will be hereinafter more fully described in detail, illustrated in the accompanying drawing, which discloses the preferred embodiment of the invention, and pointed out in the claims hereunto appended.

In the accompanying drawing:

Figure 1 is a side elevation of a drill support showing the clamp constructed in accordance with the invention assembled therewith.

Figure 2 is a side elevation of the clamp partly in section.

Figure 3 is a top plan view.

Figure 4 is a sectional view on the line 4—4 of Figure 2 looking in the direction of the arrows.

Figure 5 is a sectional view on the line 5—5 of Figure 2 looking in the direction of the arrows.

Figure 6 is a sectional view on the line 6—6 of Figure 2 looking in the direction of the arrows.

Similar reference characters indicate corresponding parts throughout the several views in the drawing.

Referring to the drawing in detail, A designates generally a drill column which includes the base and head pieces B and C, respectively, these being adjustable with relation to each other. Upon this column is clamped a drill arm 10 to which is also clamped the rock drill 11.

The clamp for the rock drill 11, and also usable for clamping the head C and the drill arm 10, comprises a main body part 12 having formed in one side a roughened face half-circular jaw 13 and swingingly connected to the part 12 is the movable part 14, this being formed with a roughened half-circular jaw 15. The movable part 14 is provided with pintle eyes 16 at one end and likewise the part 12 is formed with a companion pintle eye 17, these eyes being adapted to receive a pintle 18 so that the part 14 will be swingingly connected with the part 12, whereby such part 14 can be moved to open and closed relation to the part 12.

The part 12 has formed therein a gear chamber 19 in which is arranged a gear 20 having centrally threaded therein a tightening and flattening screw 21 formed with an eye terminal 22 received within a fork 23 formed at the other end of the part 14 and this fork carries a removable coupling pin 24 which is engaged in the eye 22 of the screw 21. At one side of the gear 20 within the chamber 19 is a worm screw 25 meshing with the gear 20, the screw being formed with a turning stem 26 suitably journaled in the part 12 and projected outwardly therefrom. On the projected end of the stem 26 is a crossed handle bar 27 for manual operation. The parts 12 and 14 are placed upon the arm 10 so that the jaws 13 and 15 of the same will embrace this arm and by manipulation of the handle bar 27 the gear 20 will be active upon the stem 21 so that the part 14 can be tightened with relation to the part 12 and thus cause the parts 12 and 14 to bite and firmly grip the arm 10.

The screw 21, at the end thereof engaged with the gear 20, carries a cap 28 which constitutes a stop to limit the shifting of said stem in one direction in the gear 20.

Upon the body part 12 is builded a stationary drill grip 29, while connected with this part 12 is the adjustable drill grip 30, a companion to the stationary grip 29, the adjustable grip being connected through the medium of a headed bolt 31 with the part 12. These grips 29 and 30 follow a circular trend congruous with the base of the drill 11 and such base of the drill can be

firmly gripped and held upon the part 12 of the clamp, as should be clearly obvious.

The stem 26 of the worm screw 25 is suitably journaled in an offset 32 on the body part 12 of the clamp.

By manually turning the screw 25, through the instrumentality of the handle bar 27, the screw 21 will be worked through the gear 20 under rotation of the latter and in this movement the movable part 14 will be shifted with relation to the part 12 of the clamp either for the tightening or the slackening action thereof.

The part 12 carries a removable cover plate 33 so that access may be had to the chamber 19 should the occasion require, or for the purpose of lubrication of such gear 20 and screw 25.

The clamp as hereinbefore described is susceptible for use wherever it is necessary to clamp a circular part with another part, as for example, the clamp as hereinbefore described is usable for the mounting of the drill arm 10 upon the column A, as well as for adjustably holding the head C with relation to the base B of such column A. The clamp may be of dual type according to the requirements in the mounting of parts of machinery.

What is claimed is:

1. A clamp comprising stationary and movable jaws pivotally connected together, a gear rotatably fitted within said stationary jaw, a stem threaded centrally in said gear and detachably coupled with the movable jaw for the swinging of the same toward and away from the stationary jaw, and an externally operated means carried by the stationary jaw for actuating said gear.

2. A clamp having stationary and movable jaws pivotally connected together, a rotatable member fitted within said stationary jaw, a threaded stem engaged with said rotatable member and detachably connected with the movable jaw for shifting the same toward and away from the stationary jaw, and a manually operated worm screw mounted in the stationary jaw and meshing with said rotatable member for actuating the same to turn the threaded stem.

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