SUPPORT FOR JACK HAMMERS

Filed Aug. 23, 1921

Inventor

John Klara

Attorney
SUPPORT FOR JACK HAMMERS.

To all whom it may concern:

Be it known that I, JOHN KLARA, of Olyphant, in the county of Lackawanna, in the State of Pennsylvania, have invented new and useful Improvements in a Support for Jack Hammers, of which the following, taken in connection with the accompanying drawings, is a full, clear, and exact description:

This invention relates to a support for jack hammers and analogous implements commonly used in quarries and minor operations in which it is necessary to support the implement at varying heights and at widely different angles of approach to the work.

The main object is to provide a unitary support of this character having simple and efficient means for easily and quickly adjusting the implement to various heights and angles while the drill or hammer is in operation.

Other objects and uses relating to specific parts of the device will be brought out in the following description:

Figure 1 is a side elevation of a supporting device embodying the various features of my invention and a jack hammer or drill operably mounted thereon. Figures 2 and 3 are enlarged vertical sectional views taken, respectively, on lines 2-2 and 3-3, Figure 1.

Figures 4 and 5 are enlarged detail vertical sectional views taken, respectively, on lines 4-4 and 5-5, Figure 1.

As illustrated, this device comprises an upright standard —1— composed of lower and upper sections —2— and —3— telescopically engaging with each other and, therefore, extensible vertically or longitudinally, the section —2— being provided with a forked lower end —4— for engaging with the ground, while the section —3— is preferably tubular for receiving the shank of the section —2—, which latter is provided with a series of apertures —5— in spaced relation one above the other receiving a locking bolt or pin —6—, said pin being inserted in a transverse aperture in the lower end of the section —3— so that it may be removed if necessary for the adjustment of the section —3— along the section —2— and retention of those sections in their adjusted positions.

The upper end of the section —3— is threaded internally for receiving the lower reduced threaded end of an additional top section —7— whereby the sections —2— and —7— may be secured to each other with a limited relative lengthwise adjustment in addition to the adjustability of the sections —2— and —3—.

The upper end of the section —7— is provided with a substantially flat lug —8— to which is pivoted at —9— the forked end of a vertically adjustable arm —10— which is movable about the axis of the pivot —9— to different angles relatively to or in vertical alinement with the standard —1— and is held in its adjusted position by a locking pin or bolt —11— passing through an aperture in the forked end of the arm —10— and also through any one of a series of apertures —12— in the lug —8—, the last named aperture being arranged in a row concentric with the pivot —9—.

The outer end of the arm —10— farthest from the standard —1— is provided with a journal opening —13— for receiving the hub —13— of a gear —14— which is provided with a central lengthwise threaded opening —15— for receiving a screw —16— whereby the turning of the gear —14— in the journal bearing —15— in one direction or the other will cause a corresponding elevation or depression of the screw —16—.

The means for turning this gear which in reality consists of a nut or pinion —17— journaled by a stud —18— on the adjacent end of the arm —10— and meshing with the gear —14— and also provided with a hand-crank —19— by which it may be rotated to effect the rotation of the gear-nut —14—.

A head —20— is rigidly secured by a bolt or rivet —21— to the upper end of the screw —16— and is provided with a substantially flat lug —22—. A jointed arm —23— composed of sections —24— and —25— is pivoted at —26— to the head —20— to swing about a horizontal axis to different angles and is held in its adjusted position by a locking bolt —27— entering an aperture in the adjacent forked end of the section —24— and any one of a series of apertures —28— in the lug —22—, said apertures —28— being arranged in a row concentric with the axis of the pivot —26—.

The sections —24— and —25— are pivot ed to each other by a pivotal bolt —29— to swing about an axis parallel with the axis —26— for permitting relative vertical adjustment of said sections, one of which, as
the section —25—, is provided with a plurality of apertures —30— for receiving a locking bolt —31— by which the sections —24— and —25— may be held in fixed relation or the section —25— held at different angles relatively to the section —24—.

The hub of the gear —14— which is journaled in the arm —10— is reduced in diameter to form a shoulder which rests upon the upper face of said arm to support the gear against downward displacement, while the upward displacement is prevented by means of a section —10'— of the arm —10— engaging the upper face of the gear —14—.

A clamp —32— is provided with a cylindrical shank —33— which is inserted in a vertical opening —34— in the outer end of the arm section —25— for vertical adjustment therein and is provided with a series of bolt openings —35— in spaced relation one above the other for receiving a locking pin —36—, the latter being also passed through an aperture in the outer end of the section —25— as shown in Figure 5.

The clamp —32— is secured to the jack hammer between the handle and tool and is provided with a fixed jaw —37— and a movable jaw —38—, the latter being pivoted at its lower end at —39— to the base of the fixed jaw —37— to move toward and from said fixed jaw and has its upper end provided with a hook-shaped extremity adapted to be engaged by a link —40— which is pivoted to the fixed jaw —37— to hold the movable jaw in its closed position, said link being held in its closed position by means of a catch —41— pivoted at —42— to the fixed jaw to swing to and from a position over the top of the link —40—. The clamp serves as a means for supporting a jack hammer or analogous implement —A— which may be operated by any suitable power as for example, compressed air directed thereto through a flexible pipe —c—, Figure 1.

When the device is adjusted for holding the implement —A— to the desired height and angle, said implement may be directed into the work —B— by means of a handle —a'— thereon, the entire device being comparatively light and easily portable from place to place. If the device is adjusted for supporting the implement in a certain plane and the implement is to be used at different angles under such adjustment, it may be readily adjusted rotarily about the axis of the gear-hub —15— or screw —16— without any further adjustment.

The vertical adjustment may be effected by moving the member —3— along the member —2— or by the rotation of the gear nut —14— through the medium of the hand-crank —19— and gear —17— or such adjustment may be effected by rocking either of the arms —10— or —23— about their respective pivots —9— or —26—, while the vertical angular adjustment may also be effected by the movement of said arms about their respective pivots, or an additional vertical angular adjustment may be produced by rocking the section —25— of the arm —23— upon its pivot —29—, each of said adjustments being highly useful in properly directing the tool to the work.

What I claim is:

1. The combination with a jack-hammer having a tool in one end and a handle on the other end, of a support including a standard having its lower end provided with ground-engaging points at opposite sides of its axis to permit rocking movement of the standard at said points, the upper end of the standard being provided with a laterally projecting arm having a journal bearing in its outer end, a gear-nut journaled in said bearing, means for holding the nut against axial movement, a screw engaged by the nut, means mounted on the screw for supporting the jack-hammer and means operable at will for rotating the nut to adjust the screw axially to enable the jack-hammer to be held in substantially the same plane as the standard is rocked about its bearing points in forcing the tool into the work.

2. A jack-hammer support as in claim 1 in which the laterally projecting arm is pivoted to the standard to swing to different angles relatively thereto to vary the angle of approach of the jack-hammer to the work.

In witness whereof I have hereunto set my hand this 13th day of August 1921.

JOHN KLARA.

Witnesses:

GEORGE H. ZATOR,

J. W. HOGAN.