

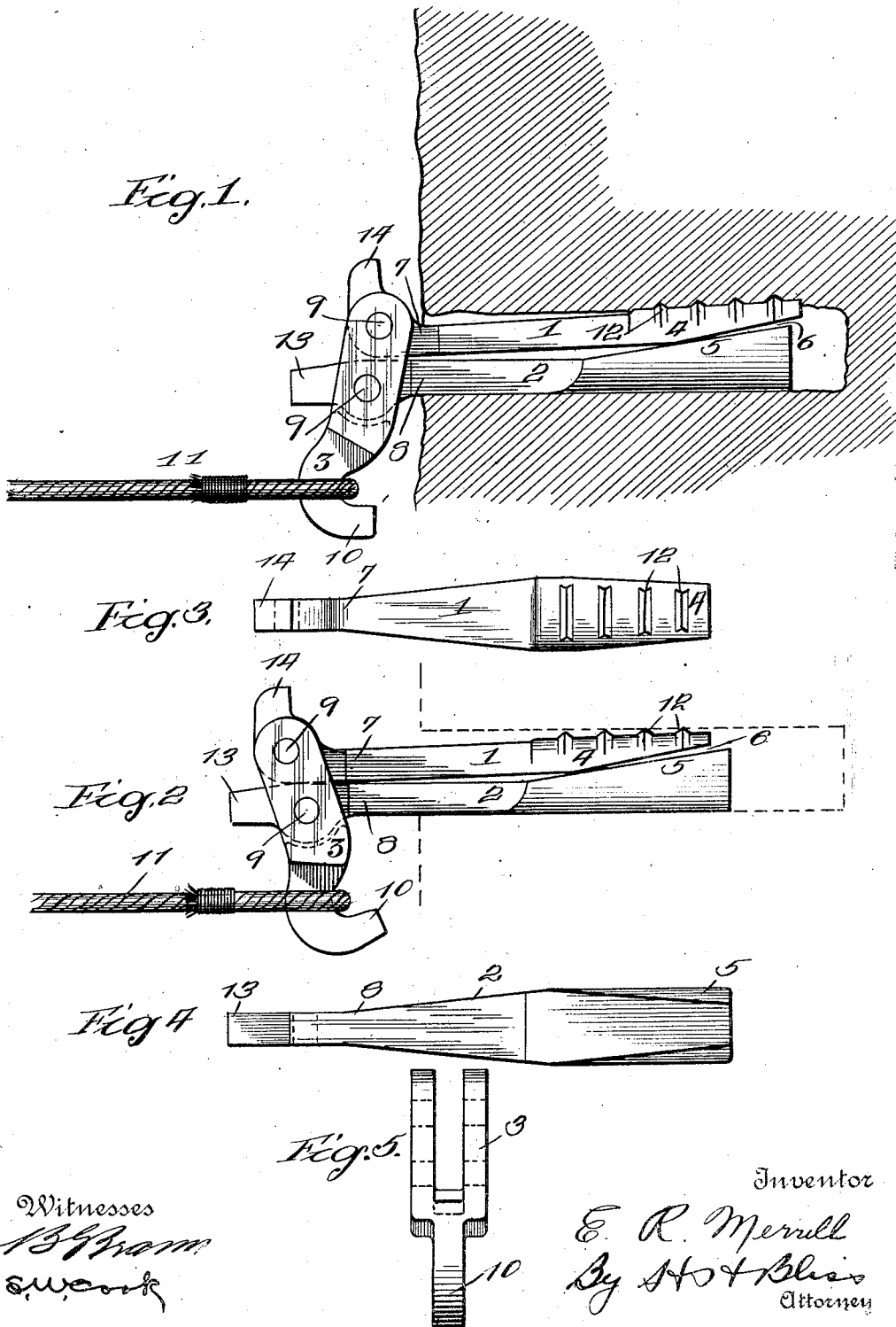
E. R. MERRILL.

ANCHOR.

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1,047,267.

Patented Dec. 17, 1912.



UNITED STATES PATENT OFFICE.

EDWIN R. MERRILL, OF COLUMBUS, OHIO, ASSIGNOR TO THE JEFFREY MANUFACTURING COMPANY, A CORPORATION OF OHIO.

ANCHOR.

1,047,267.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWIN R. MERRILL, a citizen of the United States, residing at Columbus, in the county of Franklin and State of Ohio, have invented certain new and useful Improvements in Anchors, of which the following is a specification, reference being had therein to the accompanying drawing.

10 This invention relates to improvements in anchors and in particular to an expansion type adapted to be placed within a hole and retained therein by pressure exerted on its outer end.

15 The device is composed of two members connected at their outer ends by a link, one end of which is formed into a hook. The two members are placed within a previously formed hole, and when pressure is brought to bear upon the hook portion, the two members within the hole will be separated from each other thus securely gripping the walls and preventing removal of the anchor.

20 A further advantage of the device is the provision of means by which it may be easily withdrawn from the hole when pressure is removed from the hook.

25 This anchor is designed particularly for use with short wall mining machines where the haul and guide cables must be rigidly anchored. Previously these cables have been anchored by means of screw jacks extending from the floor to the roof of the room in which the machine is to be operated.

30 This invention provides a device which may be used to anchor the cables securely with much less expenditure of labor than is necessary in placing the old type of jacks and, furthermore, may be used in rooms where the roof is too high to allow the use of such jacks.

35 Figure 1 is a partial sectional view through the wall in a room in a coal mine showing the anchor in its expanded position. Fig. 2 is a side elevation showing the anchor in its unexpanded position as it is placed within a hole. Fig. 3 is a plan view of the top section of the expanding members. Fig. 4 is a plan view of the lower section of the expanding members, and Fig. 5 is an end elevation of the connecting link and hook.

Referring to the drawing by characters

of reference, the numerals 1 and 2 represent, respectively, the upper and lower sections or members of an anchor connected at their outer ends by fork link 3. The inner ends 4 and 5 of the two members when placed together form an approximate cylinder, the juncture of the two members being an incline plane as at 6 extending from the upper inner end of the cylinder downward to approximately one-third the length of the member. The outer ends of the two members are tapered inward in a horizontal plane from the lower end of the inclined surface to approximate square cross sections at 7 and 8. The two sections are joined near their outer ends by means of the fork link 3 which straddles the two ends and is connected to them by means of the pins 9. The lower end of the fork link is formed into a hook 10 to which may be attached a cable 11. From this it will be seen that when the anchor is placed within a hole of approximately the same size as the cylinder formed by the two ends 4 and 5 of the members 1 and 2, and a pressure is exerted on the hook 10 away from the surface in which the anchor is inserted, the tendency will be to swing the outer end of the member 1 about the lower pin 9 as an axis. This will force the upper section 1 inward and upward on the inclined plane represented by the numeral 6. The consequent separation of the two parts will result in a rigid gripping of the walls of the hole, thus preventing the removal of the anchor. Corrugations or ribs 12 are provided to further aid the wedging action in securely gripping the walls of the hole.

To aid in the insertion as well as the removal of the jack from a hole, the end of the lower section 2 is extended in a nub 13 which projects slightly beyond the fork link 3, the end of the upper section 1 being turned upward at right angles to the section thereby forming a projection 14.

To place the anchor within a hole, the hook on the fork line 3 is swung inwardly, thereby bringing the two sections 1 and 2 into close relationship. The device may then be driven into the hole by hammering upon the nub 13 until driven in as far as necessary to secure a good grip upon the material. As previously explained, an outward pull upon the hook will then separate

the two sections within the hole and securely retain the anchor within the hole. It is evident that the harder the pull upon the hook, the greater will be the gripping force.

To withdraw the device, it is first necessary to remove all tension upon the hook, after which a sharp blow upon the nub 13 will drive the lower section in, consequently allowing the upper section to drop down and release its hold upon the material. A pinch bar or other suitable lever is then inserted between the upturned projection 14 and the wall in which the anchor is located. Outward pressure upon this projection will then materially aid in removing the anchor as it not only tends to draw the entire device out of the hole, but also tends to force the two sections 1 and 2 together as illustrated in Fig. 2.

Having thus described my invention, what I desire to protect by Letters Patent is:—

1. An anchor of the class described consisting of two members adapted to extend within an aperture, a link pivoted to the outer ends of the members, a hook formed on one end of the link, the adjacent surfaces of the inner ends of the section formed in inclined planes, substantially as set forth.

2. An anchor of the class described consisting of two members adapted to extend within an aperture, a link to which the outer ends of the members are pivoted, a hook formed on one of the ends of the link, and means for separating the inner ends of the said members.

3. An anchor of the class described consisting of two members adapted to extend within an aperture, a link to which the outer ends of the members are pivoted, a hook formed on one end of the link, and the surface of the inner end of one of the members which is adjacent the other member formed in an inclined plane.

4. An anchor of the class described consisting of two members adapted to extend within an aperture, a link to which the outer ends of these members are pivoted, a hook formed on one end of the link, means for separating the inner ends of the members,

and a nub extending from the outer end of the member adjacent the hook.

5. An anchor of the class described consisting of two members adapted to extend within an aperture, a link to which the outer ends of the members are pivoted, a hook formed on one end of the link, means for separating the inner ends of the members, and an upward extension formed on the end of the member farthest removed from the hook.

6. An anchor of the class described consisting of two members adapted to extend within an aperture, a forked link within which the outer ends of the members are pivoted, a hook formed on one end of the link, the surface of the inner end of one of the members adjacent the other member formed in an inclined plane, transverse corrugations on the inner ends of the members, the outer end of the member farthest from the hook formed upward in an extension, and the end of the member adjacent the hook extended in the form of a nub, substantially as set forth.

7. An anchor of the class described consisting of members adapted to extend within an aperture, the inner part of one member having an inclined surface in engagement with the inner end of the other member, and a lever pivoted to one end of said members for sliding one member inward upon the other.

8. In an anchor of the class described, the combination of two members adapted to be positioned substantially parallel within an aperture, the inner part of one of the members having an inclined surface in engagement with the inner end of the other member, and connecting means between the members automatically tending to cause substantial movement of one of the members longitudinally relative to the other, and means for securing a device to be anchored.

In testimony whereof I affix my signature, in presence of two witnesses.

EDWIN R. MERRILL.

Witnesses:

H. B. ALEXANDER,
DUDLEY T. FISHER.