No. 617,163. Patented Jan. 3, 1899.

D. JACOBS.

MINING BRACE.

(Application filed Mar. 21, 1898.)

(No Model.)

Fig. 1.

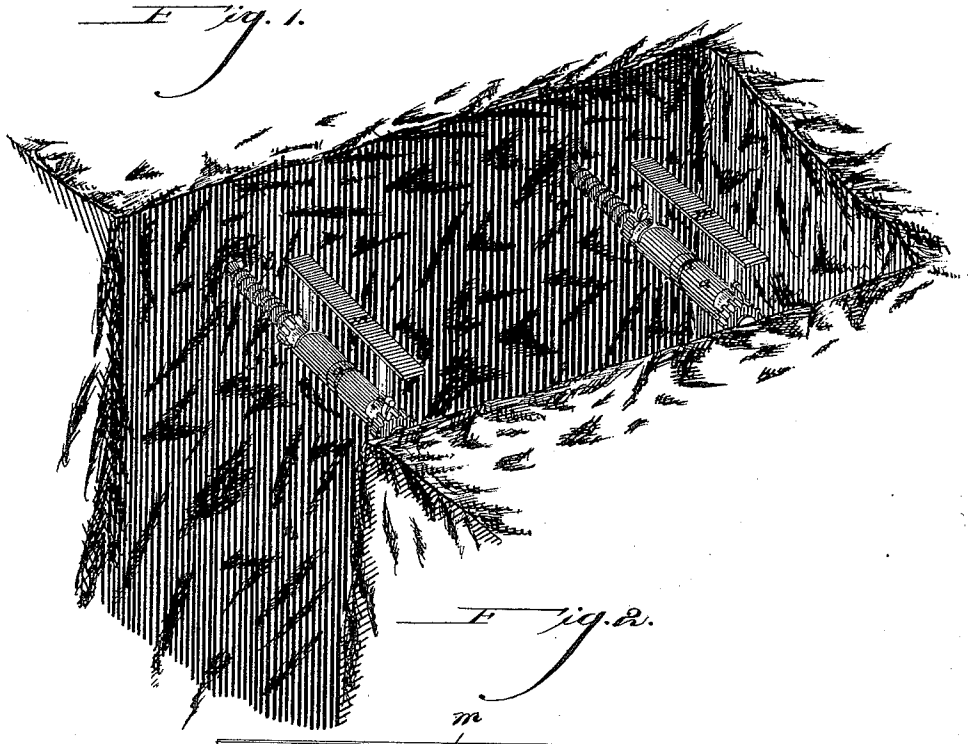


Fig. 2.

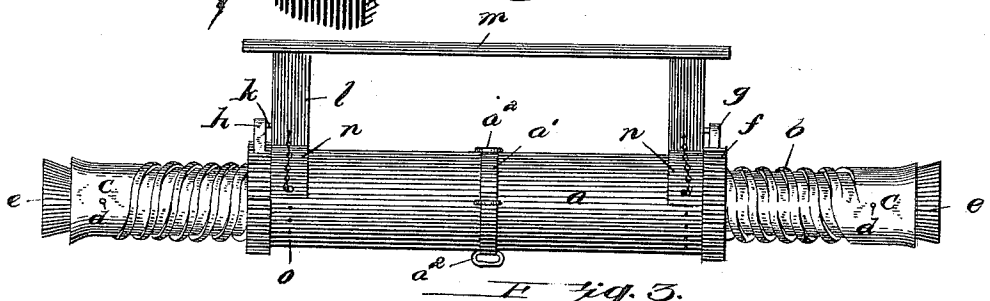


Fig. 3.

Fig. 4.

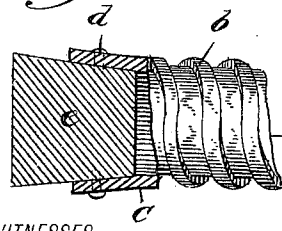
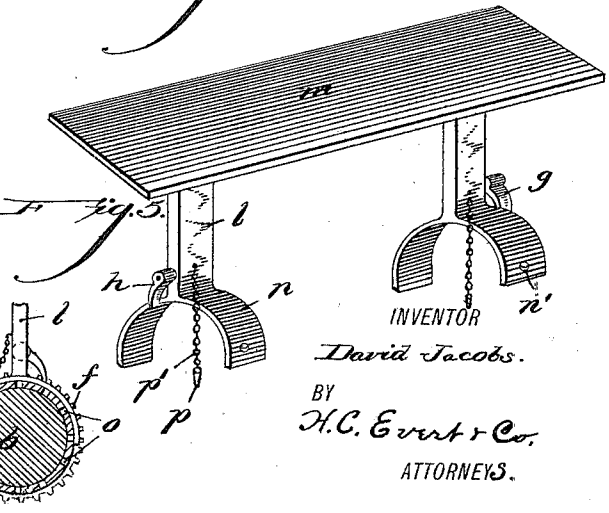


Fig. 5.



WITNESSES:

J. P. Hohmann.

Arthur Haymaker.

INVENTOR

David Jacobs.

BY

H. C. Evert & Co.

ATTORNEYS.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

DAVID JACOBS, OF PITTSBURG, PENNSYLVANIA.

MINING-BRACE.

SPECIFICATION forming part of Letters Patent No. 617,163, dated January 3, 1899.

Application filed March 21, 1898. Serial No. 674,705. (No model.)

To all whom it may concern:

Be it known that I, DAVID JACOBS, a citizen of the United States of America, residing at Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented certain new and useful Improvements in Mining-Braces, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements in mining-braces, and has for its object to provide novel means for bracing the walls of a mine to prevent their caving and to provide, in connection with such a brace, means for supporting the platform on top of the brace or braces.

The invention is adapted to be applicable for use in mines or the like where underground work is pursued, such as sinking, upraising, or drifting; and the principal features of the invention comprise an internally-screw-threaded sleeve, in each end of which engage externally-screw-threaded thrust-rods, one of which is provided with a right-hand thread and the other with a left-hand thread, so that when the sleeve is turned the thrust-rods will be simultaneously forced outwardly or drawn inwardly, according to the direction in which the sleeve is turned. This sleeve is provided at each end with a ratchet, adapted to be engaged by pawls carried on the vertical standards of a support which is adapted to form a base or resting-place for planks which are laid across the same and thereby form a platform for the workmen engaged in the mine. Each of the thrust-rods is provided in its outer end with a flared or bell-shaped socket, in which is firmly secured a plug of wood or other suitable material, which is adapted to engage the walls of the mine or drift and prevent danger of the brace slipping when in engagement with the rock or other hard material.

The above features of the invention will be hereinafter more specifically described, and particularly pointed out in the claims; and in describing the invention in detail reference is had to the accompanying drawings, forming a part of this specification, and wherein like letters of reference indicate similar parts throughout the several views, in which—

Figure 1 is a perspective view of a drift as made in the mines, showing two of my improved stulms in position. Fig. 2 is a side view of my improved brace and support. Fig. 3 is a perspective view of the support. Fig. 4 is a side view, partly in section, of a portion of one of the thrust-rods. Fig. 5 is a transverse vertical sectional view of the stulm.

Referring to the drawings by reference-letters, a represents the sleeve, which is provided with an internal screw-thread, one half of which is right hand and the other half of which is left hand to receive the correspondingly screw-threaded thrust-rods b, which engage in the said screw-threads of the sleeve and the outer ends of which are provided with a flared or bell-shaped socket c, in which is secured by pins d or other suitable means a plug e, the latter being composed of wood or other desired material and extending beyond the end of the thrust-rods for the purpose of engaging material which it is desired to brace and preventing the slipping of the stulm when placed in position. At each end of the sleeve a the same is provided with a ratchet f, which ratchets are adapted to be engaged by pawls g and h, each of which is pivotally supported from pins k, which are carried in the vertical standards l. These standards have secured to their upper ends a platform or support m and at their lower ends are each formed with a segment-clamp n, which is adapted to engage the periphery of the sleeve a, and thereby forms a support for the platform. To retain the platform in position, the sleeve a is provided around its periphery at a point underneath where the clamps n rest upon the same with recesses o, adapted to receive a pin p, which passes through an aperture n', provided in the clamps. Said pin p is or may be hung by a chain or other suitable device p' from the standard l or clamp n. The pawls g and h are hung so as to engage the ratchets in opposite directions, and thereby prevent the platform from turning.

For the purpose of turning the sleeve and simultaneously forcing the thrust-rods outwardly or drawing them inwardly into the sleeve I swage or otherwise secure on the center of the sleeve a band a', which has secured therein a number of rings a^2, adapted to receive a lever for turning the sleeve. When

the sleeve is turned in this manner, the pins *p* are withdrawn, which allows the sleeve to turn in its clamps *n* until the thrust-rods have been adjusted to a desired position, when the pins *p* are again inserted through the apertures, and the platform is thereby locked securely in its position.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a mining-brace, the combination of a sleeve, of two externally-screw-threaded thrust-rods operating in said sleeve one of which has a right-hand and the other a left-hand thread, plugs secured in the outer ends of said thrust-rods, clamps engaging the periphery of the sleeve, vertical standards formed integral with said clamps, a platform supported by said standards and means for locking said clamps and platform at any desired position on the sleeve, substantially as shown and described.

2. In combination, a sleeve, one half of the internal face of which has a right-hand and the other half a left-hand thread, two corresponding externally-screw-threaded thrust-rods engaging said sleeve, ratchets formed on the ends of said sleeve, pawls engaging said ratchets in opposite directions, a band secured to said sleeve, a series of rings carried by said band whereby the sleeve is turned to operate the thrust-rods, substantially as shown and described.

3. In a mining-brace, the combination with a sleeve one half of which has a right-hand and the other half a left-hand thread, on its inner face, two externally-screw-threaded thrust-rods engaging said sleeve, the outer ends of said thrust-rods having ball-shaped sockets, plugs secured in said sockets, a band secured to said sleeve, a series of rings carried by said band to receive a lever whereby the sleeve may be turned to operate the thrust-rods, substantially as shown and described.

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

DAVID JACOBS.

Witnesses:
A. M. WILSON,
J. P. APPLEMAN.