(No Model.)

H. B. TROUT.

ATTACHMENT FOR MINING MACHINES.

No. 403,007. Patented May 7, 1889.

Fig. 1.

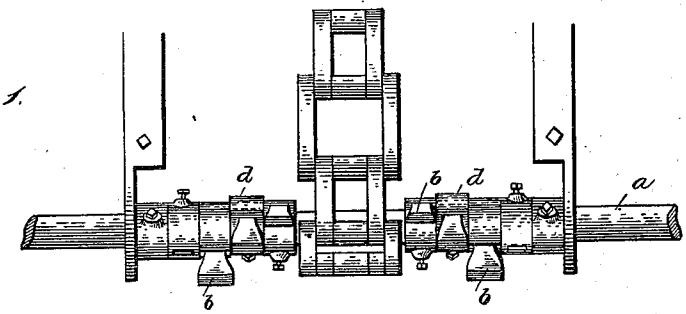


Fig. 2.

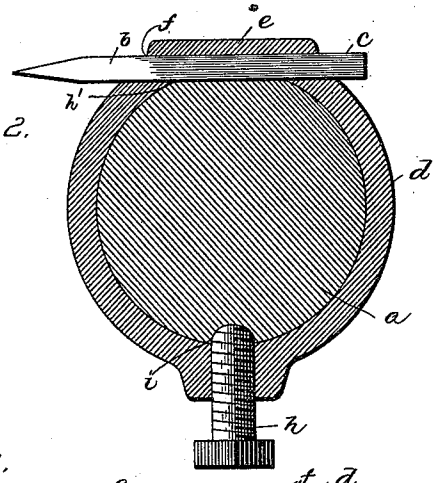


Fig. 3.

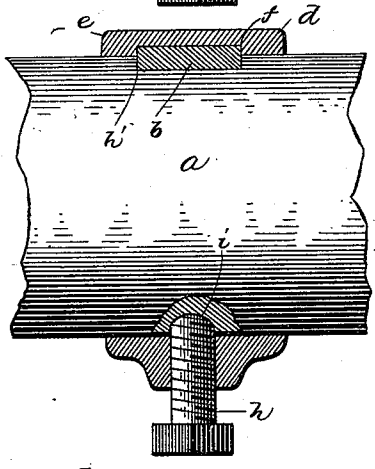
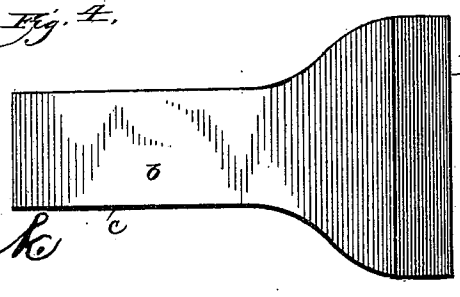


Fig. 4.



WITNESSES

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ATTACHMENT FOR MINING-MACHINES.

SPECIFICATION forming part of Letters Patent No. 403,007, dated May 7, 1889.

Application filed December 28, 1888. Serial No. 294,856. (No model.)

To all whom it may concern:

Be it known that I, HIRAM BRUCE TROUT, of Terre Haute, in the county of Vigo and State of Indiana, have invented certain new and useful Improvements in Attachments for Mining-Machines; and I do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form part of this specification.

My invention relates to an improvement in mining-machines, and more particularly to an improved cutter-bar or attachment for the cutting apparatus of mining-machines.

The object of my invention is to provide an improved and exceedingly simple and strong means of detachably securing the cutters to the cutter-bar shaft, whereby they can be easily and quickly reversed, removed, and replaced, and yet can be rigidly secured to the shaft and withstand great strain. These objects are accomplished; and my invention consists in certain novel features of construction and combinations of parts more fully described hereinafter, and particularly pointed out in the claims.

Referring to the accompanying drawings, Figure 1 is a plan view of a portion of the cutter-bar of a mining-machine provided with the within-described invention. Fig. 2 is a cross-section of the cutter-bar shaft through one of the clamping-collars. Fig. 3 is a longitudinal section of a portion of the cutter-bar shaft through one of the clamps or collars, and Fig. 4 is a detail view of a cutter.

In the drawings, the reference-letter *a* indicates the cutter-bar shaft of a mining-machine provided with any suitable driving mechanism.

The cutter-bar shaft *a* is provided with a number of cutters, *b*, suitably arranged upon the same, as shown in Fig. 1, and projecting therefrom, so that the cutters will travel in parallel planes a suitable distance apart. Each cutter *b* is formed of one piece of steel provided with a straight shank, *c*, having its cutting end flattened and enlarged laterally and its end edge sharpened to form a cutting-edge. The cutters are removably and rigidly secured in proper position upon the shaft by means of clamps or collars *d*, loosely embracing the shaft, and each provided with an enlarged portion, *e*, through which a socket or mortise, *f*, extends and opens into the bore of the collar, as shown at *g*. The collar is provided with a set-screw, *h*, extending radially through the same diametrically opposite from the mortise. The collar is preferably provided with a boss surrounding the threaded opening, through which the set-screw extends, as shown.

In assembling the parts the collar is first slipped upon the shaft until in the proper position. The shank of the cutter is then inserted in the mortise or socket, which is of a size to snugly receive the same, and so that it will extend about tangentially from the shaft with its cutting end extending a suitable distance from the collar. The shaft is preferably grooved or notched, as shown at *h'*, to receive the shank of the cutter, as shown in Figs. 2 and 3, thereby increasing the strength and rigidity. When the cutter is in position, the clamp is tightened upon the shaft by the set-screw. When the set-screw is tightened, its end fits in a recess, *i*, in the shaft, thereby holding the parts rigidly in position and tightly clamping the cutter in the groove *h'* in the shaft. As the cutter is straight, when it becomes dull the clamp can be loosened by means of the set-screw and the cutter taken out, reversed, and replaced, and it will then sharpen itself, as is clearly evident. It is also evident that various changes and modifications might be made in the form and arrangement of the parts described without departing from the spirit and scope of my invention; hence I do not wish to limit myself to the precise construction herein set forth, but consider myself entitled to all such changes and modifications.

Having thus fully described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. In a mining-machine, the combination of a rotary cutter-bar shaft, a sleeve embracing the same and provided with a mortise extending through the same tangentially to the shaft and open on its inner side, a cutter having a

cutting-head extending from the sleeve, and a shank located in said mortise and bearing against the cutter-bar shaft, and means for clamping the sleeve to the shaft and the cutter-shank tightly against the shaft, substantially as described.

2. In a mining-machine, the combination of a rotary cutter-bar shaft, a sleeve embracing the shaft provided with an enlarged portion, through which a bore or mortise extends, a cutter consisting of a single piece of steel having its cutting-head enlarged and sharpened, and a straight shank tightly clamped in said mortise, and a set-screw extending through the sleeve and engaging the shaft diametrically opposite the mortise, substantially as described.

3. In a mining-machine, the combination of a cutter-bar shaft, a sleeve embracing the same and provided with an enlarged portion having a mortise extending therethrough and opening into the bore of the sleeve, said shaft having a flattened portion beneath said opening, a cutter consisting of a single piece of steel having a shank extending through the mortise and resting in said flattened portion of the shaft, and a screw extending through the sleeve and entering a recess in the shaft to clamp the parts together, as set forth.

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

HIRAM BRUCE TROUT.

Witnesses:
J. SMITH TALLEY,
WILLIAM E. EPPERT.