(No Model.)

H. C. SERGEANT.

BAR FOR QUARRY FRAMES.

No. 484,117. Patented Oct. 11, 1892.

Fig. 2.

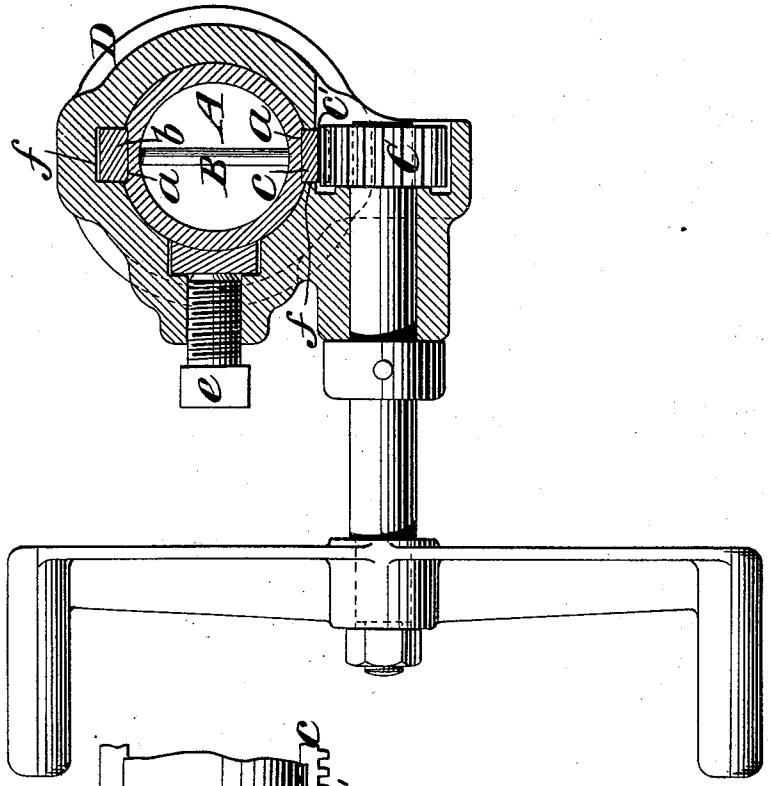


Fig. 1.

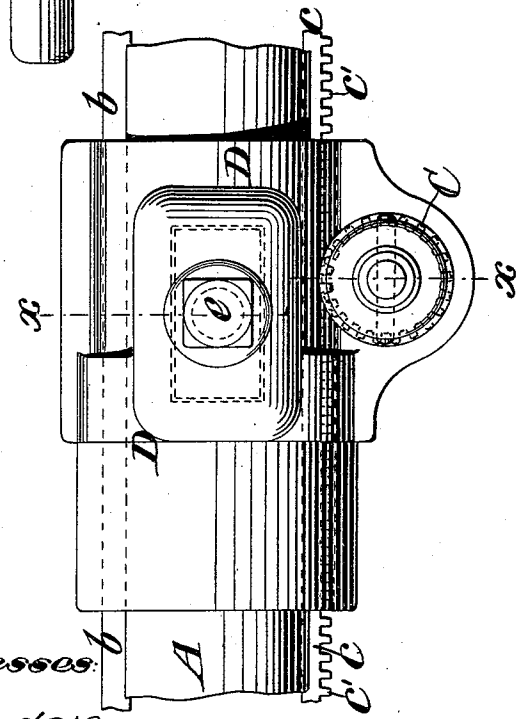
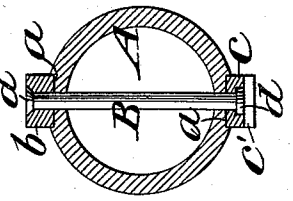


Fig. 3.



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BAR FOR QUARRY-FRAMES.

SPECIFICATION forming part of Letters Patent No. 484,117, dated October 11, 1892.

Application filed January 26, 1892. Serial No. 419,285. (No model.)

To all whom it may concern:

Be it known that I, HENRY C. SERGEANT, of Westfield, in the county of Union and State of New Jersey, have invented a new and useful Improvement in Bars for Quarry-Frames, of which the following is a specification, reference being had to the accompanying drawings.

The object of this invention is to obtain a quarry-bar which has great stiffness in proportion to its weight, which will better insure the drilling of a perfect line of holes parallel at top and bottom, and upon which the drill-carriage will be free from liability to bind.

I will proceed to describe my invention with reference to the drawings, and afterward point out its novelty in the claims.

Figure 1 represents a longitudinal view of a short piece of a quarry-bar embodying my invention and a side view of a drill-carriage thereon. Fig. 2 is a transverse sectional view in the line *x x* of Fig. 1. Fig. 3 represents a transverse section of a quarry-bar constructed according to my improvement.

The bar A consists of an iron tube grooved externally and longitudinally on opposite sides, as shown at *a a* in Figs. 2 and 3, by planing or otherwise, for the reception of two splines *b* and *c*, which run lengthwise of the bar and are fitted snugly into the said grooves *a a* and secured therein at convenient intervals in the length of the bar by means of bolts B, each of which passes through opposite holes made in the two splines and in the bar and has its ends within the splines. The said bolts are represented as made with a head *d*, at one end which is countersunk into one of the splines and as secured by countersunk riveting *d'* at the other end in the other spline. The spline *c* is constructed with a toothed rack *c'* on its exterior to gear with a pinion C on the carriage D by which the drill is supported on the bar.

The carriage D, except that it is grooved, as shown at *f f*, on opposite sides to receive the two splines, is like those in common use. The set-screw *e*, by which the carriage is secured in its place on the bar when adjusted, is applied midway between the two splines.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination, in a quarry-bar, of a tube longitudinally grooved on opposite sides, two parallel splines, one in each groove, and bolts passing transversely through said tube and both splines and fastened at their ends on said splines, substantially as herein set forth.

2. The combination, in a quarry-bar, of a tube longitudinally grooved on opposite sides, two parallel splines, one in each groove, and one of which has a toothed rack, and bolts passing transversely through said tube and both splines and fastened at their ends on said splines, substantially as herein set forth.

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