

E. H. JONES.  
Cylinder-Teeth for Coal-Breakers.

No. 214,398.

Patented April 15, 1879.

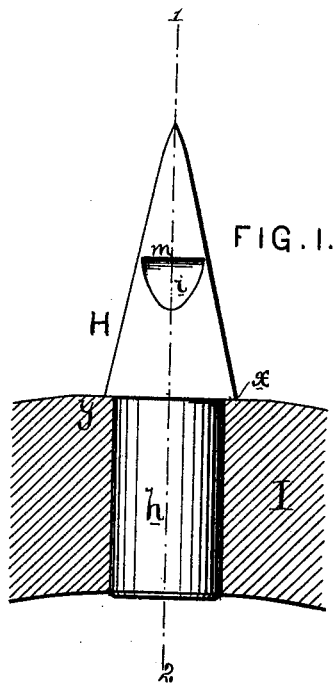


FIG. 1.

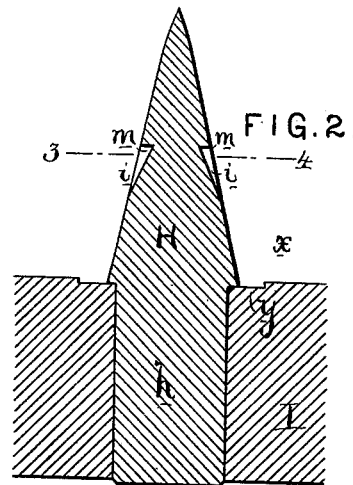


FIG. 2.

FIG. 3.

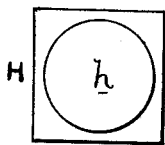
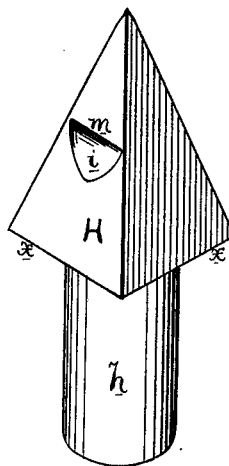


FIG. 4.



FIG. 5.



WITNESSES.

Henry Bowson Jr.  
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INVENTOR

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# UNITED STATES PATENT OFFICE.

EDWARD H. JONES, OF WILKESBARRE, PENNSYLVANIA.

## IMPROVEMENT IN CYLINDER-TEETH FOR COAL-BREAKERS.

Specification forming part of Letters Patent No. **214,398**, dated April 15, 1879; application filed March 1, 1879.

*To all whom it may concern:*

Be it known that I, EDWARD H. JONES, of Wilkesbarre, Luzerne county, Pennsylvania, have invented a new and useful Improvement in Teeth for the Cylinders of Coal-Breakers, of which the following is a specification.

The object of my invention is to provide coal-breaking cylinders with teeth, the opposite sides of each of which are so indented as to afford a hold for a suitable instrument by which the tooth may be extracted, the indentations being such as not to detract from the strength or proper shape of the tooth, and such as not to restrict its proper bearing on the coal-breaking cylinder.

In the accompanying drawings, Figure 1 shows part of a coal-breaking cylinder with one of my improved teeth; Fig. 2, a vertical section on the line 1 2, Fig. 1; Fig. 3, an inverted plan view of the tooth; Fig. 4, a sectional plan on the line 3 4, and Fig. 5 a perspective view.

The tooth consists of the tapering pointed portion or tooth proper, *H*, and a shank, *h*, the tapering portion being in the form of a pyramid with a square base, and the shank being driven into an orifice in the coal-breaking cylinder *I* until the shoulder *x*, formed at the junction of the pyramid with the shank, bears upon a plane surface, *y*, formed on the said cylinder.

Two opposite inclined sides of the pyramid are plain throughout, each of the two remaining opposite sides having an indentation, *i*, terminating at the top in an abrupt shoulder, *m*, these shoulders affording a hold on the tooth for the jaws of an extracting instrument.

It will be seen that the indentations *i* are mere local depressions in the metal, and do not extend across the sides of the teeth; and that, as seen in Fig. 4, the indentations are concave, and hence they do not detract to any appreciable extent from the strength of

the tooth; at the same time they do not interfere with the proper shape of the tooth, or present any obstacle to its efficient action on the coal.

Teeth of coal-breaking cylinders have been heretofore so constructed as to afford facilities for extracting them. For instance, a tooth has been made with an annular undercut at the base for admitting the jaws of an extracting-tool—a plan which tends to weaken the teeth at that point where the greatest strength is desired, and to restrict the size of the shoulder which should bear against the cylinder.

If the tooth be enlarged at the base, to reinforce it when it is weakened by undercutting, there must be a departure from that proportion of the tooth which experience has demonstrated to be the most appropriate.

In my improved tooth the proper proportions of length and taper are preserved. There is a base, *x*, of appropriate size, to bear against the cylinder *I*, and at the same time the indentations, while they do not detract from the strength of the tooth, afford a secure hold for the extracting instrument.

I claim as my invention—

1. The pyramidal tooth having a square base, and on opposite sides and between the point and base *x* indentations *i*, each terminating at the top in an abrupt shoulder, *m*, substantially as set forth.

2. The combination of a coal-breaker cylinder with teeth each of which consists of a cylindrical or slightly-tapering shank, *h*, the indented tooth proper or pyramidal portion, *H*, and a square base, *x*, which bears against the cylinder *I*, all substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

EDWARD H. JONES.

Witnesses:

JOS. B. MILLER,  
F. SMITH.