

SCOVILLE & FRASER.

Quartz Crusher.

No. 27,599.

Patented March 20, 1860.

Fig. 2.

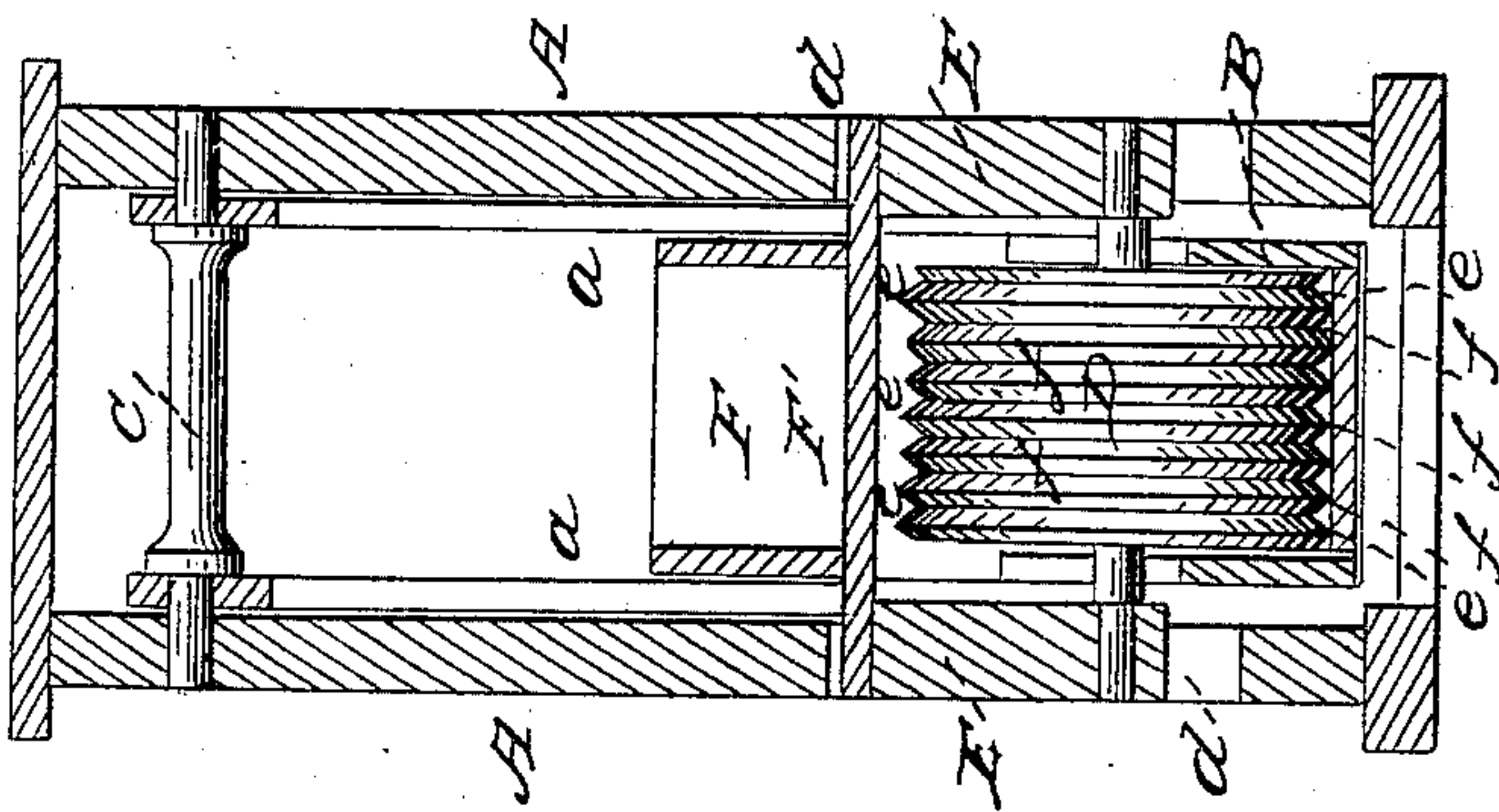


Fig. 3.

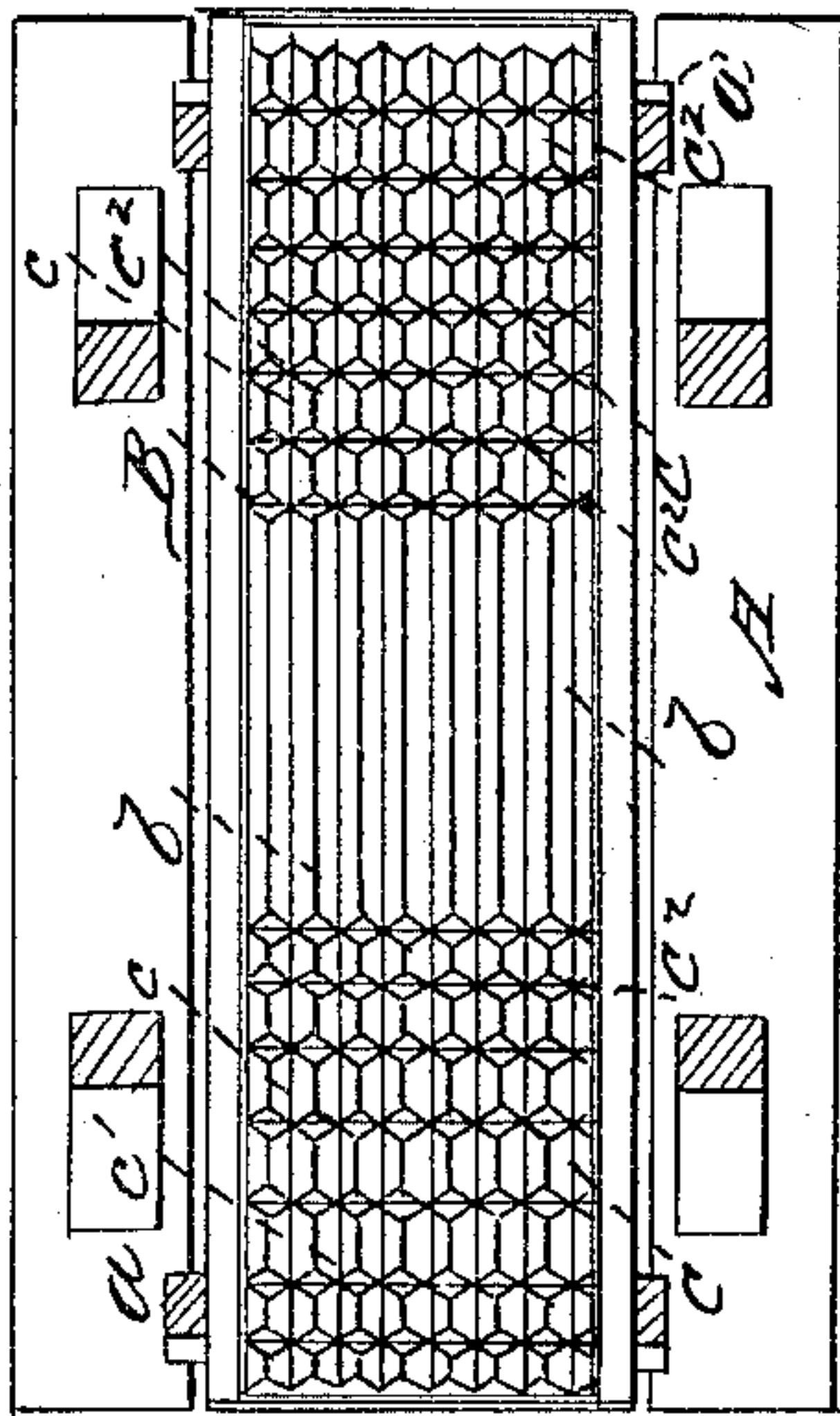
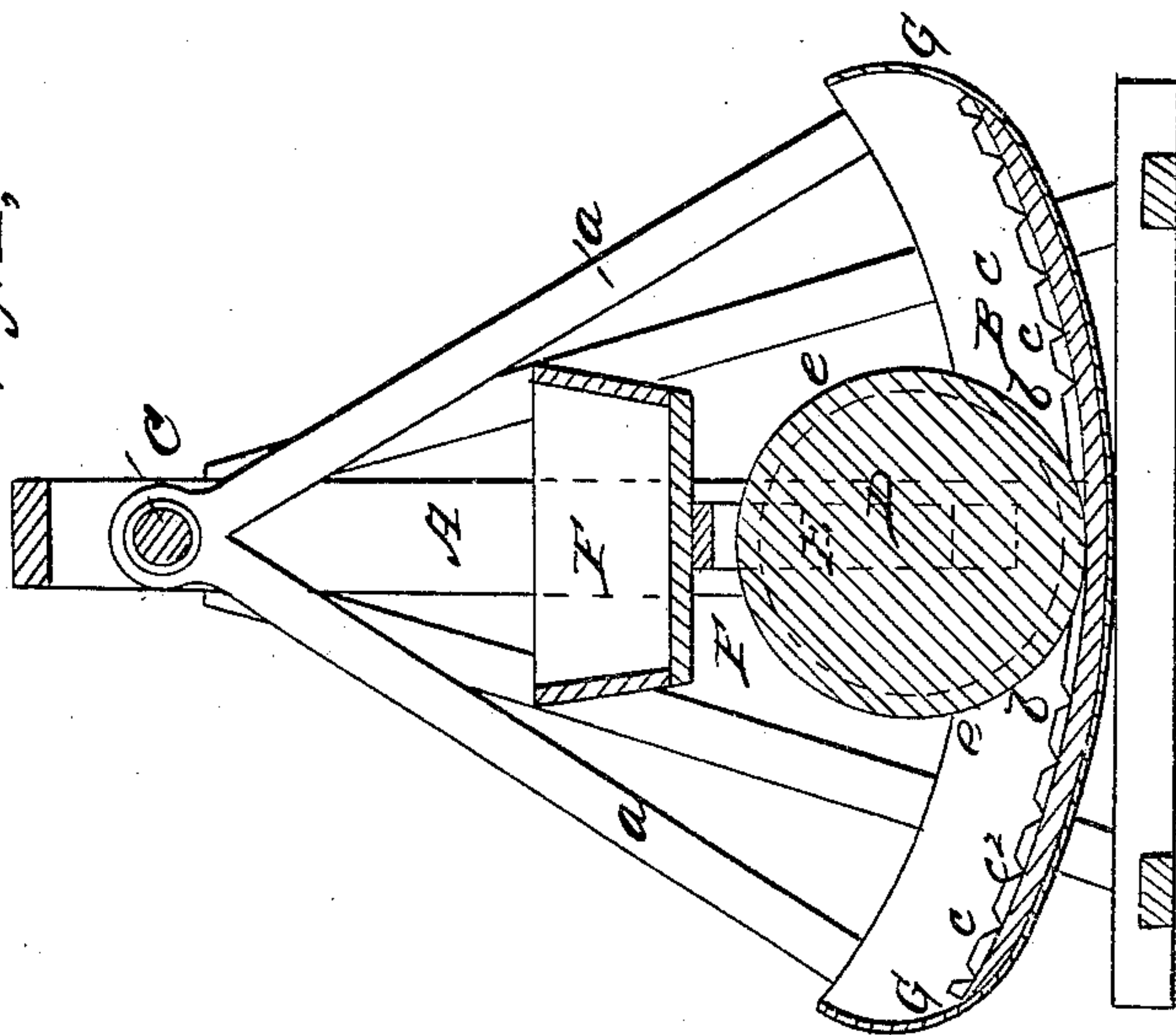


Fig. 1.



Witnesses:

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by Munn & Co  
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# UNITED STATES PATENT OFFICE.

HIRAM H. SCOVILLE AND D. R. FRASER, OF CHICAGO, ILLINOIS, ASSIGNORS TO THEMSELVES AND P. W. GATES, ALL OF SAME PLACE.

## QUARTZ-CRUSHER.

Specification of Letters Patent No. 27,599, dated March 20, 1860.

*To all whom it may concern:*

Be it known that we, HIRAM H. SCOVILLE and DAVID R. FRASER, of Chicago, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Quartz-Crushers; and we do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1, is a vertical longitudinal section of a quartz-crusher constructed after our invention. Fig. 2, is a vertical transverse section of the same. Fig. 3, is a plan or top view of the concave.

Similar letters of reference, in each of the several figures, indicate corresponding parts.

To enable others skilled in the art to make and use our invention, we will proceed to describe its construction and operation.

A, is the stationary frame and B, the concave swinging trough. This trough is suspended on an axle C, by means of swinging triangular pieces *a, a*, said axle having its bearing in the top of the stationary frame and may be arranged to revolve itself or constructed to have the triangular pieces turn on it. The bottom of the trough forms a segment of a circle struck from the center of the axle C, and is grooved and ribbed longitudinally for about one-third of its length, intermediate between its two ends, as shown at *b, b'*, and dressed from the terminations of said longitudinal ribs at both ends, with pyramidical teeth, as represented at *c*, said teeth having beveled grooves *c', c''*, running longitudinally and transversely between them.

D, is the crushing roller. It is hung in a frame E, which plays up and down loosely in the grooves *d, d'*, of the frame A, as represented. This roller is dressed circumferentially with beveled ribs *e, e*, and

beveled grooves *f, f*, so as to match or gear with the surface of the concave trough.

F, is a box placed on top of the sliding frame F'. This box is to contain the auxiliary weight which is employed to keep the roller down with a crushing force.

G, G, are screens or grates placed near the extreme ends of the concave trough. These screens, owing to their location, on a segment of a circle, have the pulverized quartz, by the action of flowing water thrown up against them in such a manner that a speedy and ready escape takes place.

The operation is as follows: The quartz being placed in the concave at each end and rock or other weight placed in the box F, a reciprocating motion is imparted to the trough. The movement of the trough causes the quartz to be carried back and forth under the roller, and consequently it is first broken into small particles between the pyramidical teeth of the concave and circumferential ribs of the roller and then by water is forced toward the center of the concave where it is pulverized by the longitudinal ribs of the concave and circumferential ribs of the roller, after which it discharges with the water through the screens or grates.

We do not claim a roller grooved circumferentially, nor do we claim a grooved horizontal bed, but

What we do claim as our invention and desire to secure by Letters Patent, is—

Crushing quartz by the combined agency of a swinging concave trough B, and a rising and falling roller D, substantially as set forth.

HIRAM H. SCOVILLE.  
DAVID R. FRASER.

Witnesses:

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