

J. FOWLER.
Ore Crusher.

No. 54,884

Patented May 22, 1866.

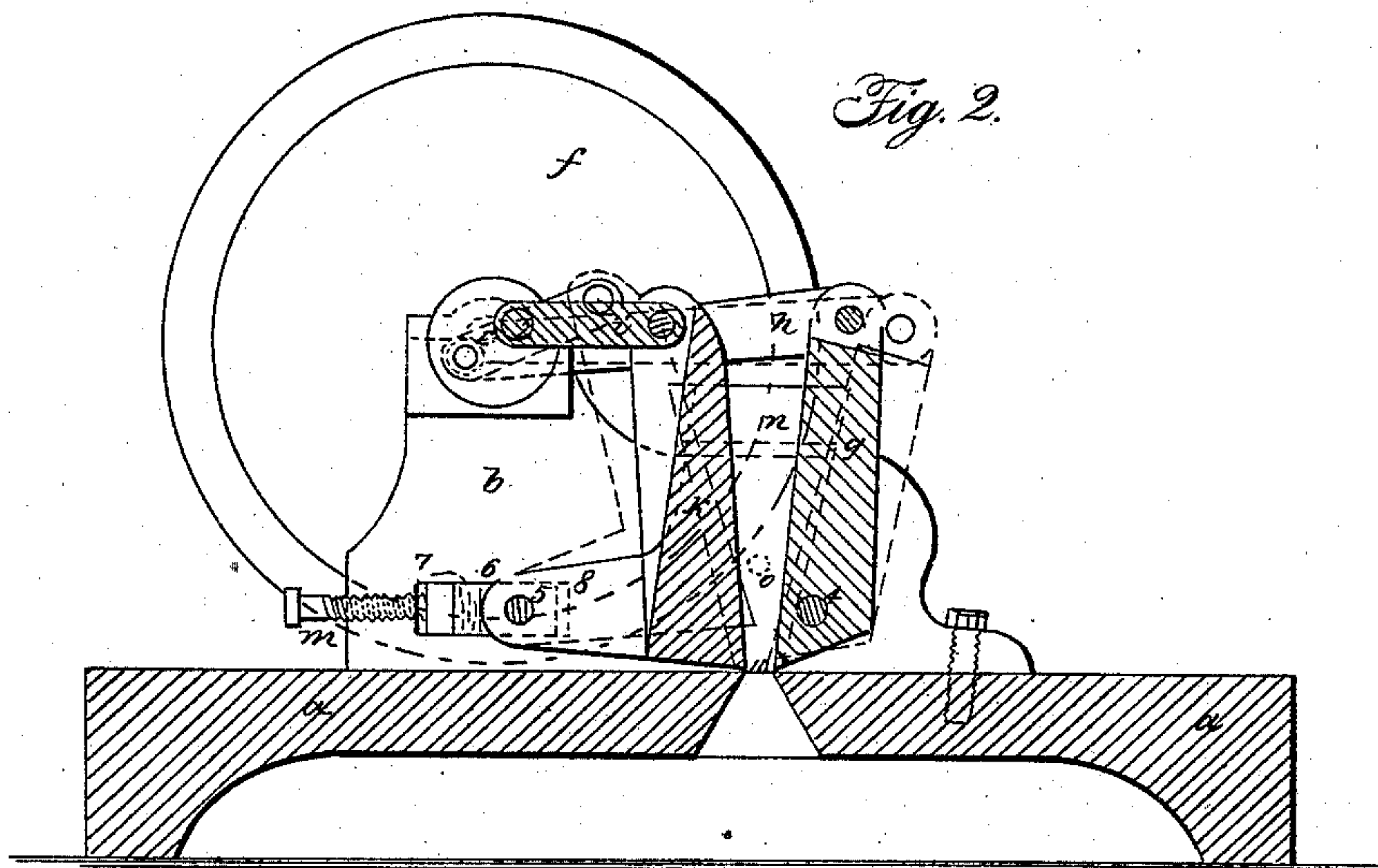


Fig. 1.

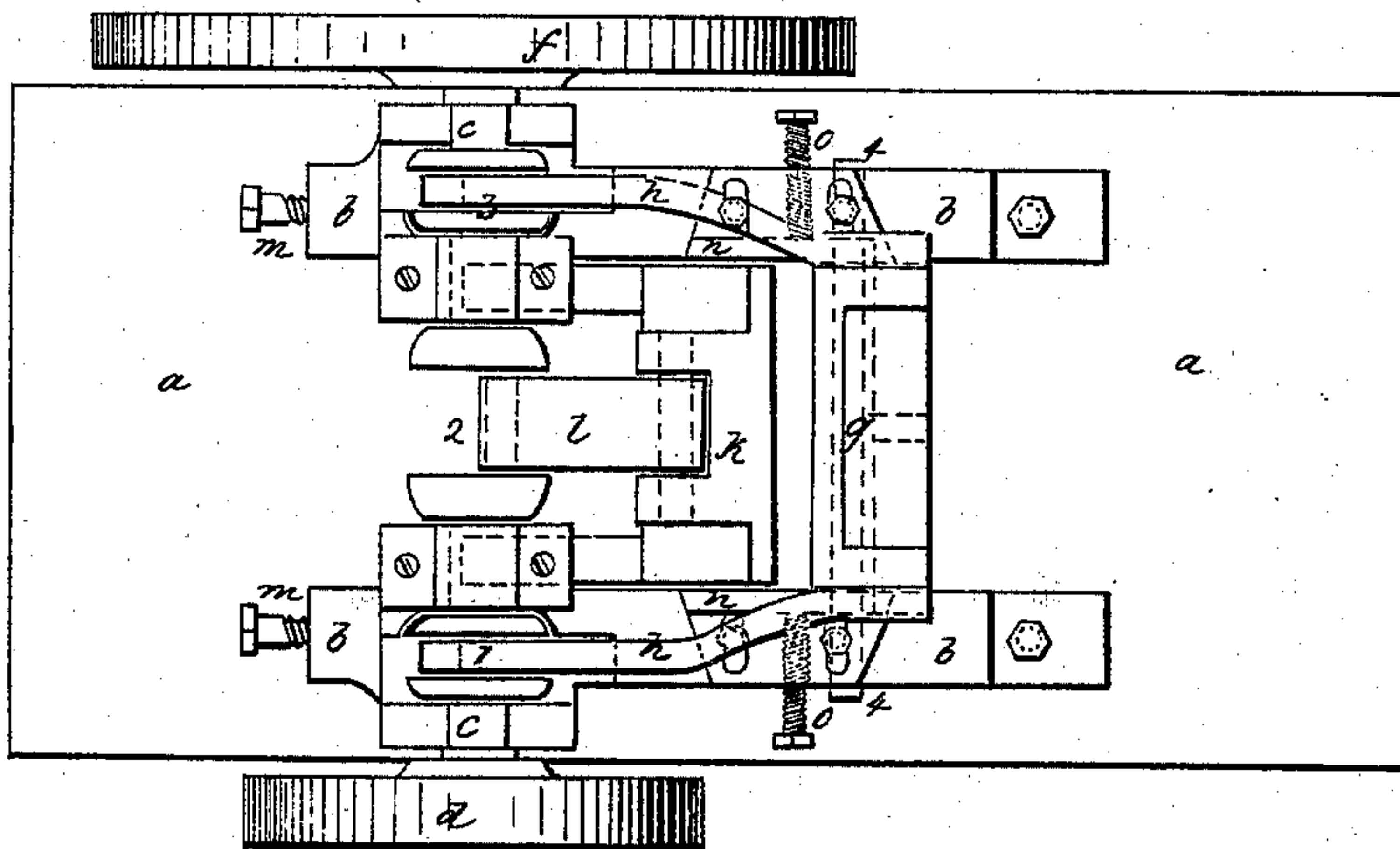
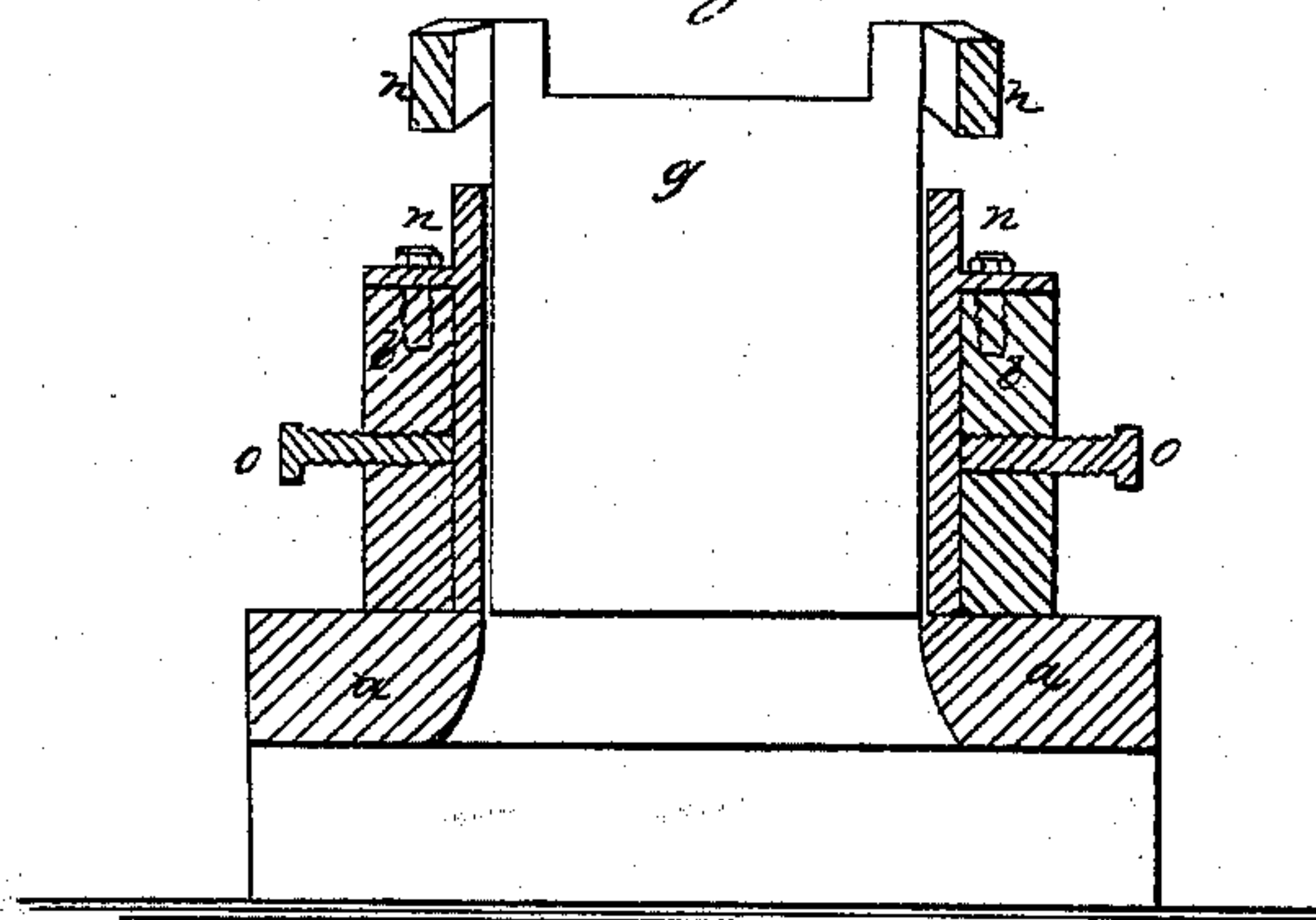


Fig. 3.



Witnesses:

Chas H Smith
Geo D Walter

Inventor:

Joseph Fowler

UNITED STATES PATENT OFFICE.

JOSEPH FOWLER, OF RAHWAY, NEW JERSEY.

IMPROVEMENT IN ORE-CRUSHERS.

Specification forming part of Letters Patent No. 54,884, dated May 22, 1866.

To all whom it may concern:

Be it known that I, JOSEPH FOWLER, of Rahway, in the county of Union and State of New Jersey, have invented, made, and applied to use a certain new and useful Improvement in Ore-Crushers; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making part of this specification, wherein—

Figure 1 is a plan of said crusher. Fig. 2 is a longitudinal section of the same, and Fig. 3 is a cross-section of the hopper.

Similar marks of reference denote the same parts.

Various devices for crushing ores and other substances have been made in which a jaw has been hinged near its bottom edge and pressed against the stationary side of a hopper, and projections have been made on the opposite faces, as may be seen in Letters Patent granted September 4, 1849, to A. C. Hobbs and John Brown. Ore-crushers have also been operated by a pair of cranks over the central portion of the hopper, with connecting-rods to the moving sides of the hopper. This mode of construction, however, is objectionable, because the cranks and connecting-rods are in the way in feeding the ore into the hopper, and prevent free access to said hopper.

The nature of my said invention consists in arranging the actuating-shaft at one side of the hopper, in combination with three connecting-rods to the moving sides of said hopper. Two of the cranks on the actuating-shaft, with their connecting-rods passing at the edges of the hopper, actuate one of the moving sides, and the third crank and its connecting-rod actuating the other moving side. By this arrangement the upper portion of the hopper is left entirely free and open for feeding in the ore and allowing the operation to be observed by the attendant.

I make use of adjustable end plates to the hopper that can be set up to the moving side plates as the parts wear, so as to keep the hopper tight at the angles; and I adjust the bearings or hinge of one of the side plates or jaws so as to bring said side plates nearer to or farther from each other at their lower end, to vary the size of the pieces of crushed ore, as may be required; and I introduce yielding blocks of rubber or similar material, to allow

a slight movement at this hinge, to prevent injury in case a drill-point or other substance that cannot be crushed falls into the hopper.

In the drawings, *a* represents the bed of the machine, upon which are the frames *b b*, carrying a shaft, *c*, having three cranks, 1, 2, and 3. This shaft is sustained in suitable bearings or boxes, and is to be rotated by competent power applied to the wheel *d*, or otherwise.

f represents a fly-wheel. *g* is one of the jaws of the hopper supported upon a hinge at 4, and the upper end is connected by the rods *h h* with the cranks 1 and 3.

k is a jaw forming one of the side pieces of the hopper, which jaw moves upon the cross-bar or hinge 5, and the upper end is connected by the bar *l* to the crank 2.

The cross-bar 5 is set in boxes or bearings 6, that are fitted in openings in the frames *b*, and *m* are screws acting to adjust these bearings 6. I employ blocks of india-rubber at 7 to allow the lower end of the jaw *k* to yield in case of a drill-point or other hard substance getting into the hopper, which would break the jaws were it not for this yielding movement.

I introduce wedges or changeable plates at 8, to prevent the springs 7 forcing the bearings 6 along and closing the mouth 10 of the hopper, or making it too narrow.

I employ movable plates *n n* at each end of the hopper, said plates being sustained by the frames *b b*, and adjusted by the screws *o o*, so as to keep said plates in contact with the edges of the side plates or jaws, *k* and *g*, and by the adjustment compensate wear, keeping the angles of the hopper tight.

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

1. The crank-shaft *c* and connecting-rods *h h* and *l*, in combination with the jaws *g* and *k*, when the parts are arranged and operate as and for the purposes specified.

2. In combination with the jaws *g* and *k*, the adjustable side pieces, *n n*, and screws *o o*, for the purposes and as set forth.

In witness whereof I have hereunto set my signature this 7th day of November, A. D. 1865.

JOSEPH FOWLER.

Witnesses:

LEMUEL W. SERRELL,
CHAS. H. SMITH.