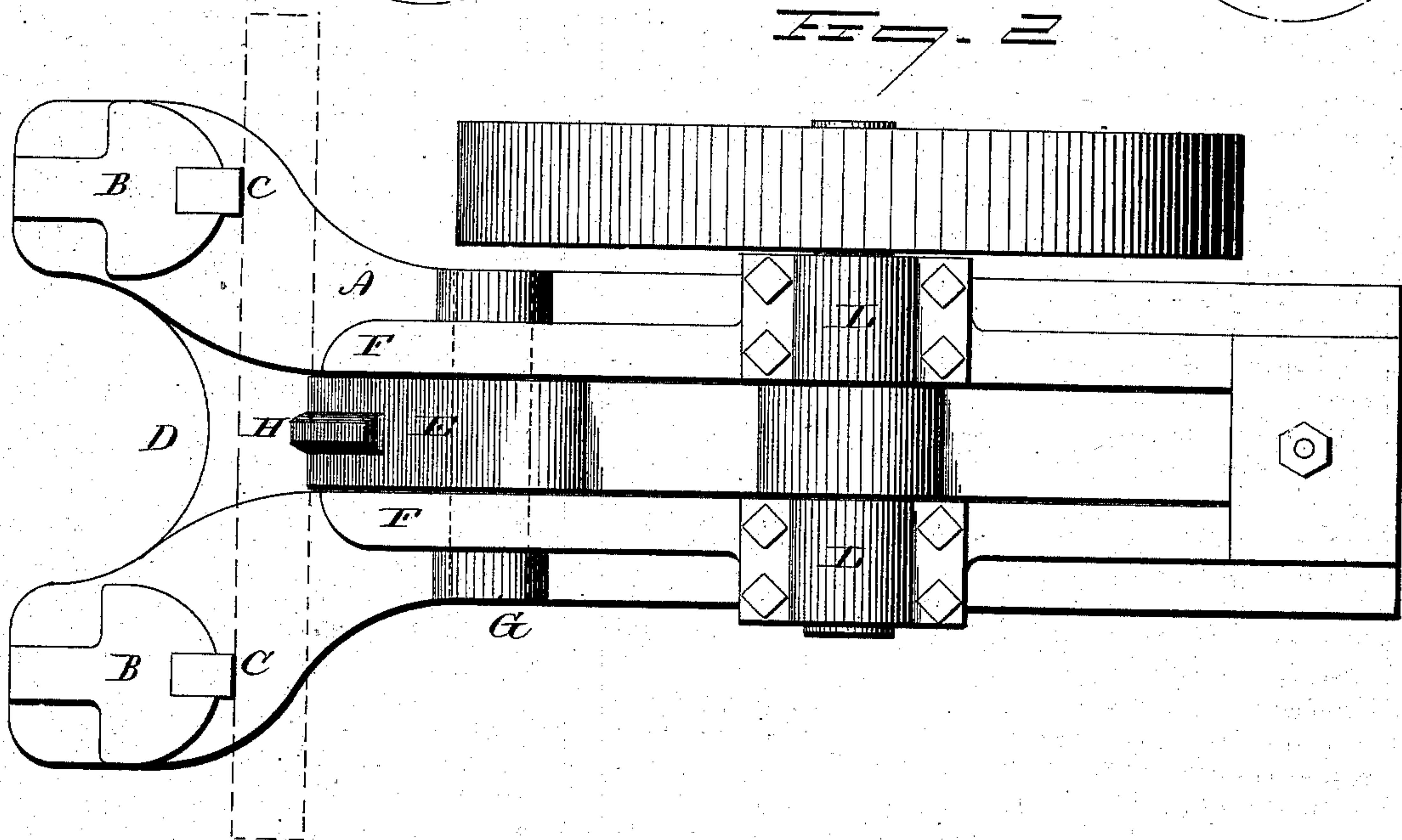
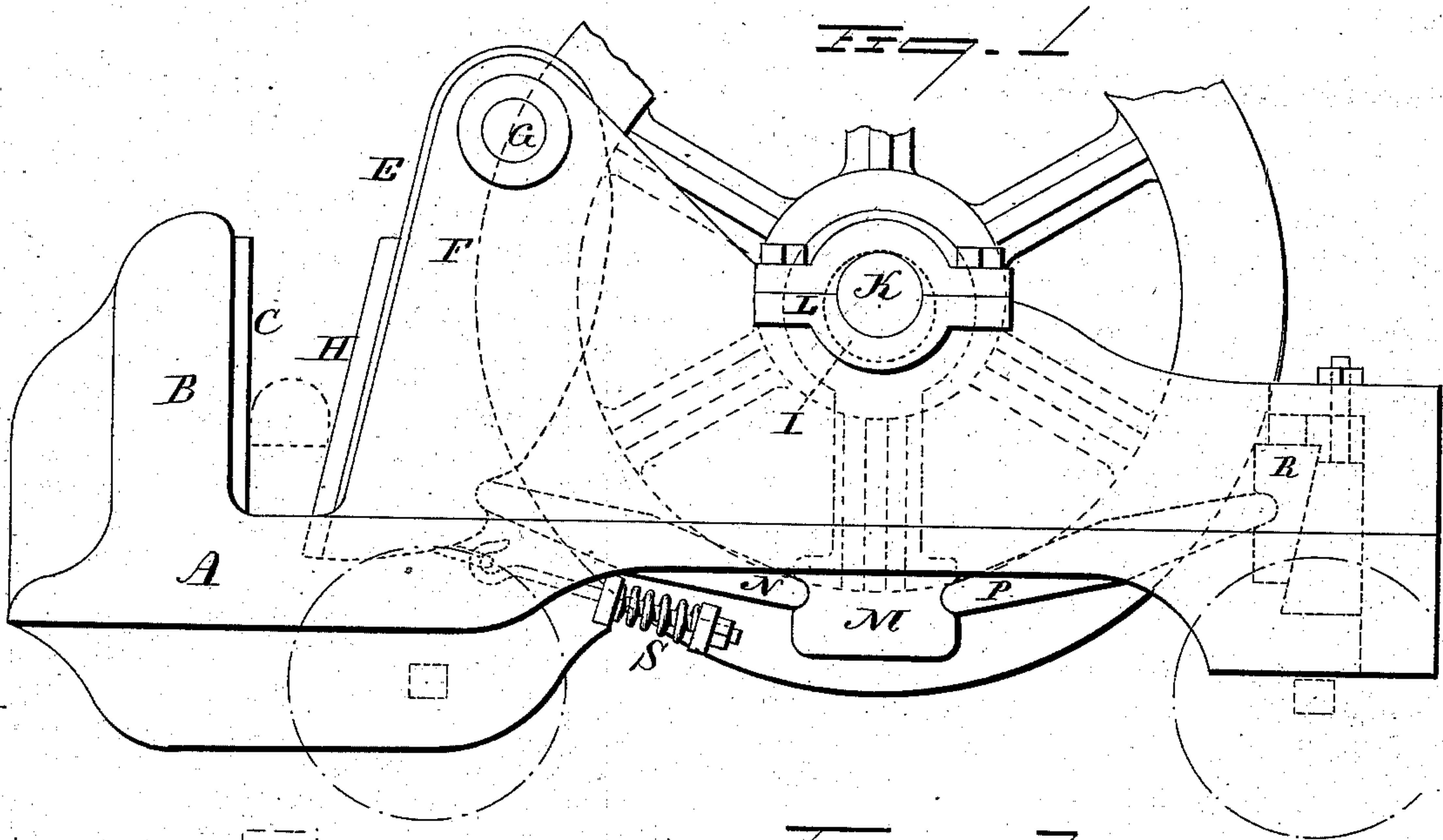


(No Model.)

T. A. BLAKE.
PIG IRON BREAKER.

No. 293,405.

Patented Feb. 12, 1884.



Witnesses.

J. H. Murray
J. A. Earle

Theodore A. Blake
By Atty. Inventor
Chas. C. Cook.

UNITED STATES PATENT OFFICE.

THEODORE A. BLAKE, OF NEW HAVEN, CONNECTICUT.

PIG-IRON BREAKER.

SPECIFICATION forming part of Letters Patent No. 293,405, dated February 12, 1884.

Application filed September 3, 1883. (No model.)

To all whom it may concern:

Be it known that I, THEODORE A. BLAKE, of New Haven, in the county of New Haven and State of Connecticut, have invented a new
5 Improvement in Pig-Iron Breakers; and I do hereby declare the following, when taken in connection with accompanying drawings and the letters of reference marked thereon, to be a full, clear, and exact description of the
10 same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, a side view; Fig. 2, a top or plan view.

This invention relates to an improvement
15 in machines for breaking pig-iron, the object being to adapt the well-known Blake ore-crushing machine to the breaking of pig-iron; and the invention consists in a pair of upright stationary jaws standing in the same plane,
20 distant from each other less than the length of the pig, supported in a frame constructed with a recess forward between the said two jaws, combined with a vibrating converging jaw arranged to work in a plane midway be-
25 tween said two stationary jaws, whereby a pig may be placed between said vibrating jaw and the two fixed jaws, and the vibration of the movable jaw break the pig between the fixed jaws, as more fully hereinafter de-
30 scribed.

A represents the bed of the machine, which may be provided with wheels for convenient transportation, or arranged to stand upon a stationary foundation. At one end of the bed
35 are two upright jaws, B B. On the face of each is a vertical rib, C. The jaws are located so that these ribs are distant from each other less than the length of the pig to be broken, and between the jaws is a recess or space, D.

40 E is a movable jaw, hung in the sides F of the frame upon an axis, G, substantially parallel with the plane of the two jaws B B, and so as to swing upon its axis toward and from the plane of the jaws, and is arranged relative
45 to the faces C C of the two jaws, so that the plane of the faces C C and of the jaw E converge from their lower end upward. The sides F of the frame terminate in rear of the plane of the vibrating jaw E. The face of the
50 vibrating jaw E is provided with a vertical rib, H. Vibratory movement is imparted to the jaw E by means of an eccentric, I, on the driv-

ing-shaft K, said driving-shaft supported in bearings L, and power applied thereto in any of the usual methods for applying power to
55 revolve the driving-shaft. From the eccentric a rod extends downward, and carries at its lower end a toggle-block, M. Between the forward side of the block and the jaw F a toggle-bar, N, is arranged, and a like toggle-bar, 60
P, between the rear side of the toggle-block M and a corresponding toggle-seat, R, at the rear, in the usual and well-known manner of imparting vibratory movement to a movable
65 jaw. A spring, S, is arranged so as to be compressed by the forward movement of the jaw, and its reaction serves to retract the jaw. By terminating the sides just in rear of the plane of the face of the vibrating jaw, a transverse open space is left between the movable and
70 stationary jaws, as seen in Fig. 1.

In operation the workman bringing the pig comes to the machine into the recess D, and so as to drop the pig over the stationary jaws into the space between them and the movable jaw,
75 the pig indicated in broken lines. The pig falls until it comes to a bearing between the movable and fixed jaws, and then the forward vibratory movement of the jaw E forces the central portion of the pig forward, resisted at each
80 side by the fixed jaws, which operation causes the pig to break between the fixed jaws, the pieces of the pig falling into the recess D, from whence they are removed; or they may fall to the right and left. The open space or recess D
85 between the jaws, it will be seen, affords great facility for the introduction of the pig, for the reason that a single laborer taking a pig may introduce it to the machine, whereas were the forward end closed he could not reach over
90 that closed end so as to lift the pig into the mouth; but the introduction of the pig would require two laborers—one at each side—to thus lift the pig over the end of the frame and into the mouth of the machine. 95

An additional movable jaw may be arranged parallel with the jaw E, but outside one of the stationary jaws, and so that, a pig introduced, one end of the pig would be at one of the stationary jaws, the other end projecting be-
100 yond the other stationary jaw, and so that two breaks would be made—one between the two jaws, as before described, and the other at the outside.

I am aware that pig-iron breakers consisting of two upright fixed jaws, combined with a vibrating or reciprocating jaw between them, have been used, and therefore do not broadly
5 claim such a construction or arrangement of jaws, the essential feature of my invention being the construction of the front end of the frame so as to form the recess D between the stationary jaws, whereby the attendant can
10 come in between those jaws to introduce the pig over them.

I claim—

In a pig-iron breaker consisting of two ver-

tical jaws, stationary on the frame, and a vibrating jaw hung to swing in a plane between
15 said stationary jaws, and in which the plane of the face of the stationary jaws and the plane of the vibrating jaw converge from their lower end upward, the frame constructed with a recess, D, at the front end, between the said sta-
20 tionary jaws, substantially as and for the purpose described.

THEODORE A. BLAKE.

Witnesses:

JOS. C. EARLE,

J. H. SHUMWAY.