

H. M. RANSOM.
Ore-Feeder.

No. 225,023.

Patented Mar. 2, 1880.

Fig. 1.

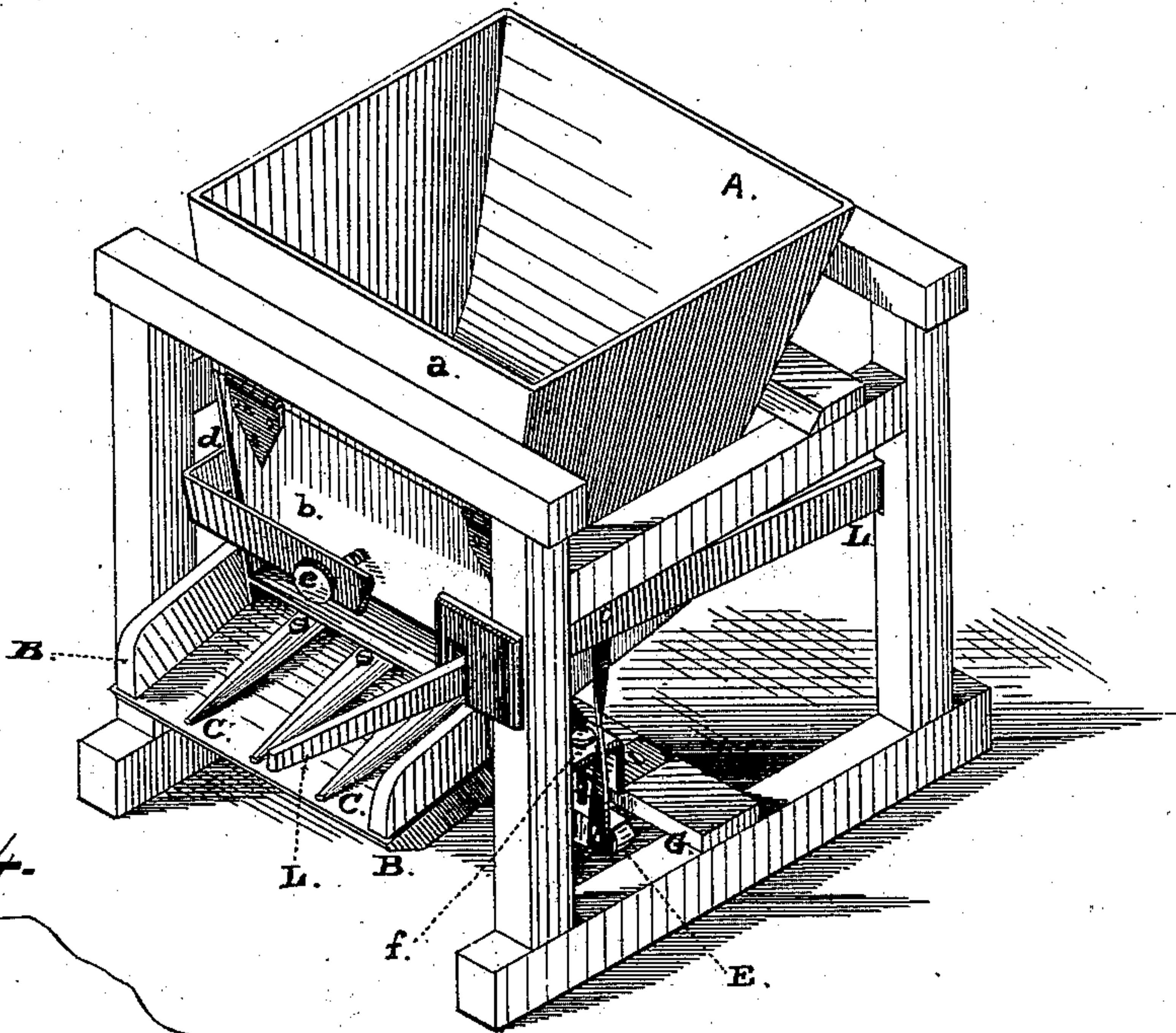


Fig. 4.

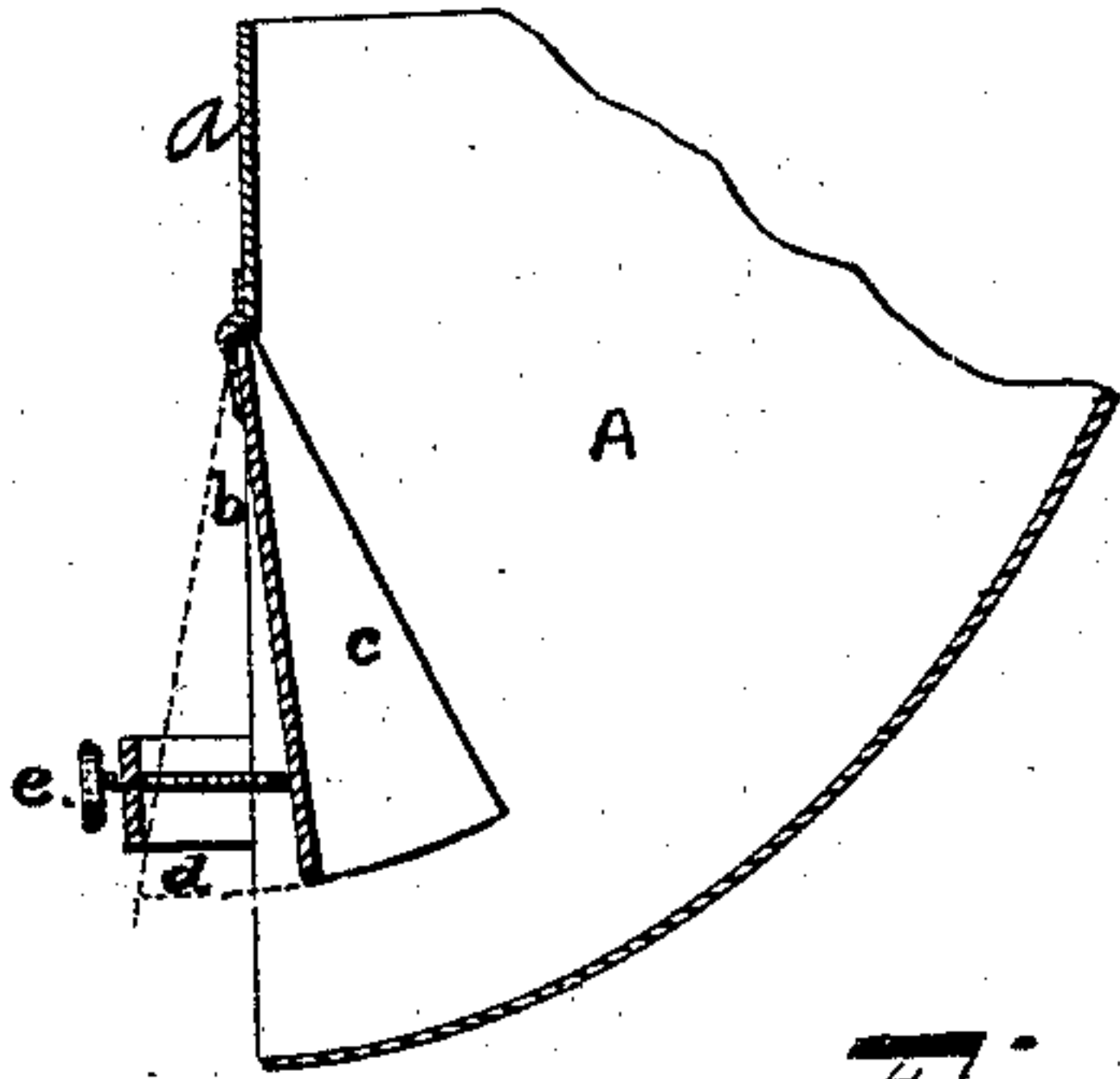


Fig. 3.

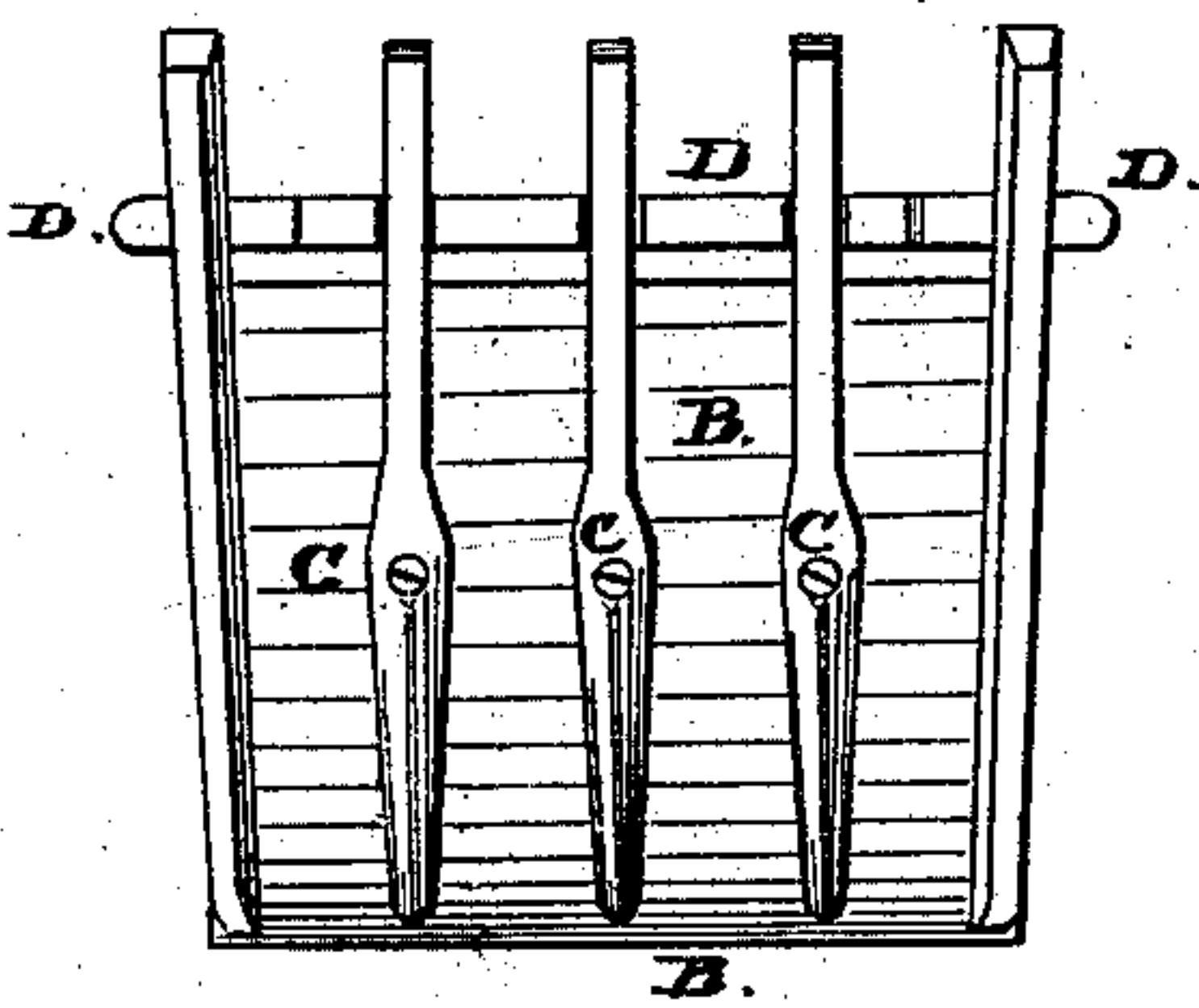
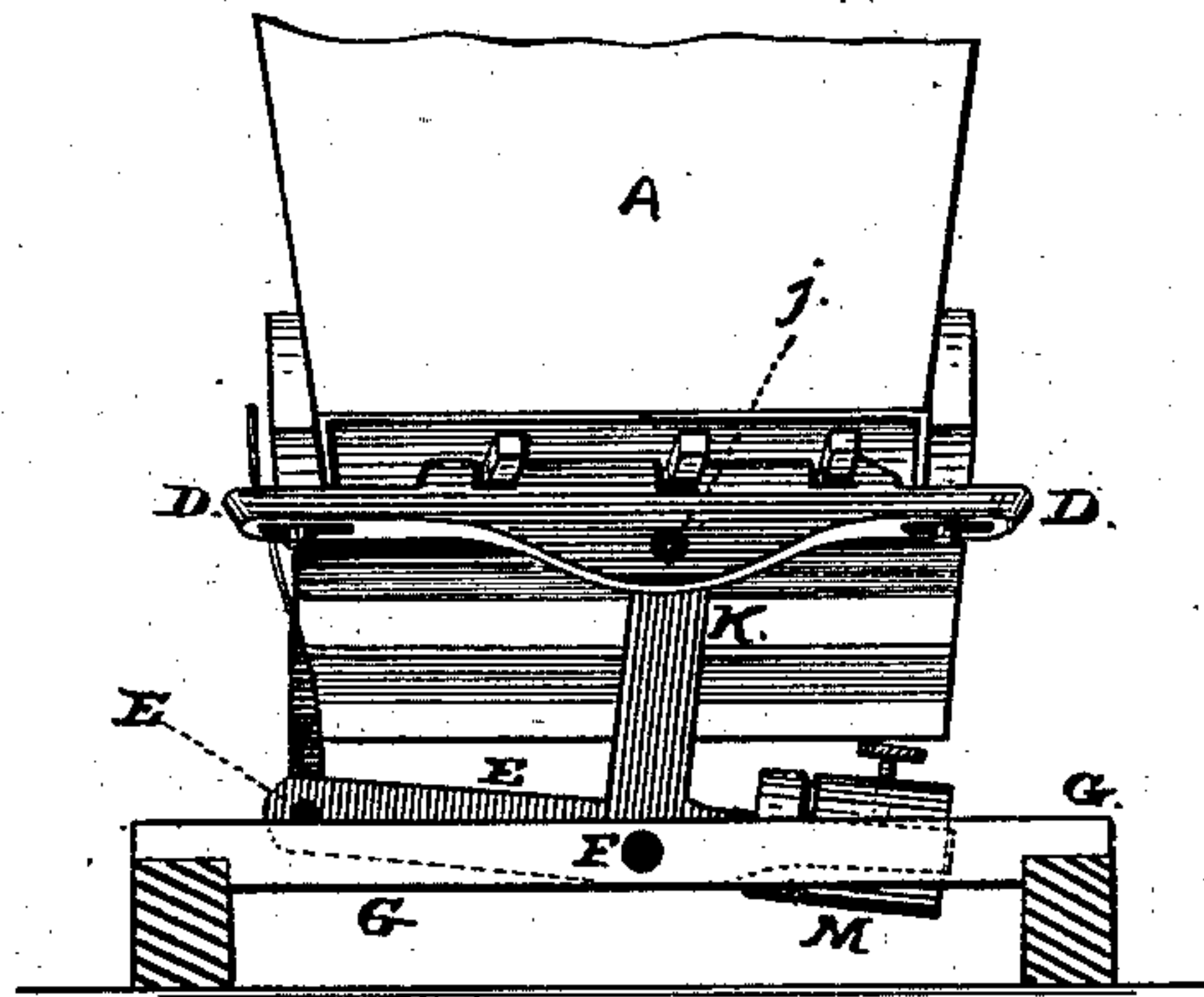


Fig. 2.



Witnesses:

Edward C. Osborn.

Wm. F. Clark

Inventor:

Hiram M. Ransom
per Boon & Osborn,
Attorneys.

UNITED STATES PATENT OFFICE.

HIRAM M. RANSOM, OF OAKLAND, ASSIGNOR TO HINCKLEY, SPIERS
& HAYES, OF SAN FRANCISCO, CALIFORNIA.

ORE-FEEDER.

SPECIFICATION forming part of Letters Patent No. 225,023, dated March 2, 1880.

Application filed October 25, 1879.

To all whom it may concern:

Be it known that I, HIRAM M. RANSOM, of Oakland, in the county of Alameda and State of California, have made and invented a new and useful Improvement in Ore-Feeders; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had therein to the accompanying drawings, forming part thereof.

My invention has reference to an improved machine for feeding ore to stamp-mills; and it consists of a stationary chute or table mounted at the proper degree of inclination below the ore-hopper, in combination with a series of vibrating fingers or stirrers and certain other mechanism which are operated by the drop of the stamp, so that the ore which descends from the hopper above will lie upon the fingers and be moved forward by their motion, so as to drop from the edge of the table or chute into the battery.

It also relates to an improvement in the ore-hopper by which I can not only regulate the descent of the ore from the hopper to the table, but also increase or diminish the capacity of the hopper, all as hereinafter more fully described.

Referring to the accompanying drawings, Figure 1 is a perspective view of my improved machine. Fig. 2 is a view taken from the rear of the hopper, showing the vibrating mechanism for working the fingers. Fig. 3 is a top view of the stationary chute and feeding-fingers. Fig. 4 is a detail view of the extension-front of the hopper.

A is the ore-hopper, which is mounted in a frame, in the usual way.

B is the stationary chute or inclined table, which is mounted below the hopper, so that the ore settling down through the lower opening in the hopper will rest upon it.

C C are vibrating fingers or levers that rest upon the bottom of the chute or table, with their forward ends extending down to near the front edge of the chute, and their rear ends extending backward and connected with a transverse bar or beam, D, in the rear of the chute. These fingers are pivoted to the bottom of the chute near its rear end, so that when the transverse bar D, to which their

rear ends are attached, is moved transversely back and forth, the fingers will be caused to move from side to side about their pivots as a center.

Each finger is made either flat or slightly concave on its under side, so that its edges will fit snugly against the bottom of the chute. Each finger also tapers from the pivot to the point and decreases in thickness besides, as shown in Figs. 1 and 3, the portion in front of the pivot being made tapering down to the lower end, and the edges being beveled off so as to give a cross-section of triangular form. The bottom of the tray I plane off so that it will be comparatively smooth, permitting the fingers to hug closely to the surface and preventing any sand, grit, or gravel from getting underneath.

The transverse beam D, in which the rear ends of the fingers C are held, is mounted in any suitable way, so that it can move a limited distance back and forth. In the present instance a slot is made in each end and a screw is passed through the slot, so as to limit the motion.

A beam, E, extends across the lower part of the feeder-frame directly below the beam D, with a pin or journal, F, projecting from the middle thereof and passing through the middle of a beam, G, which extends parallel with the beam D above, while a pin, J, extends from this beam D, and engages with a slotted recess in the upper end of an arm, K, fixed to and rising upward from the middle of the beam.

A tappet-lever, L, is connected by a rod with one end of the centrally-pivoted beam, so that when the tappet on the stamp-stem strikes the end of this lever the end of the beam E will be depressed, causing the arm K to move the beam D in one direction transversely or across the hopper. After the pressure of the tappet is removed from the end of the lever a weight, M, on the opposite end of the beam E moves the levers and beams back again, thus imparting to the beam D a reciprocating motion back and forth across the chute. This movement of the beam D carries the rear ends of the levers from side to side, imparting to the fingers themselves a vibratory motion upon their centers.

The details of construction and arrangement of the parts may be varied without departing from the spirit of my invention.

The under side of the hopper A, I extend
 5 downward and forward in a curve, so that it will terminate at a point above the front of the pivot-points of the fingers and deliver the ore upon the chute directly upon the fingers C. The movement of the fingers will then gradu-
 10 ally feed the ore down over the lower end of the chute and cause it to drop into the battery, and as the fingers are disposed at regular intervals apart, the feeding of the ore will be uniform at all points in the width of the chute.
 15 In constructing the hopper I make only a narrow portion, *a*, at the top of its front side permanent, leaving the main portion to be covered by a hinged door or extension, *b*. This extension is made to fit the front portion of
 20 the hopper below the permanent portion *a*, and it has side pieces, *c c*, which enter the hopper close against each side, so that when the lower part of the hinged portion is drawn outward to increase the inside area of the hopper these
 25 pieces *c* will prevent the formation of any openings at the sides. I also permanently secure a bail-beam, *d*, to the sides of the hopper, so that it will pass across the front of the hinged portion of the front, and through this beam I
 30 pass a set-screw, *e*, by means of which the hinged portion can be held in any desired position or adjusted as desired. This hinged front not only increases the inside area of the hopper, but serves to regulate the size of the feed-
 35 opening at the bottom of the hopper, as the farther it is drawn out the larger will be the feed-opening. This hinged portion is adjusted according to the character of the ore being fed. I also employ an adjusting-screw, *f*, to limit

the movement of the lower beam, E, so that the
 40 motion of the fingers can be increased or diminished by raising or lowering the screw.

Having thus fully described my invention, what I claim, and desire to secure by Letters
 45 Patent, is—

1. In an ore-feeder, the combination, with the chute B, of the feeding-fingers C C, tapered and beveled from their pivotal points to their forward ends, substantially as and for the purpose
 50 set forth.

2. In an ore-feeder, the combination, with the fingers C and bar D, of the inverted T-shaped lever E, with its stem K connected to the center of the bar D, substantially as and for the
 55 purpose set forth.

3. In an ore-feeder, the combination, with the fingers C and bar D, of the inverted T-shaped lever E, with one end connected to the tappet-lever L, substantially as and for the purpose
 60 set forth.

4. The combination, in an ore-feeder, with the fingers C C and bar D, of the inverted T-shaped lever E, lever L, connected to lever E, and weight M on one end of the latter lever, sub-
 65 stantially as and for the purpose specified.

5. In an ore-feeder, the combination, with the hopper A, with its under side tapered forwardly and provided with the forward extension or chute, B, of the hinged front section, *b*, with side pieces, *c*, hugging the sides of the
 70 hopper, and provided with an adjusting-screw, *e*, substantially as and for the purpose set forth.

In witness whereof I have hereunto set my hand and seal.

HIRAM M. RANSOM. [L. S.]

In presence of—

EDWARD E. OSBORN,
 WM. F. J. CLARK.