

(No Model.)

2 Sheets—Sheet 1.

F. A. HUNTINGTON.
ORE FEEDER FOR CRUSHING MILLS.

No. 246,392.

Patented Aug. 30, 1881.

Fig. 1.

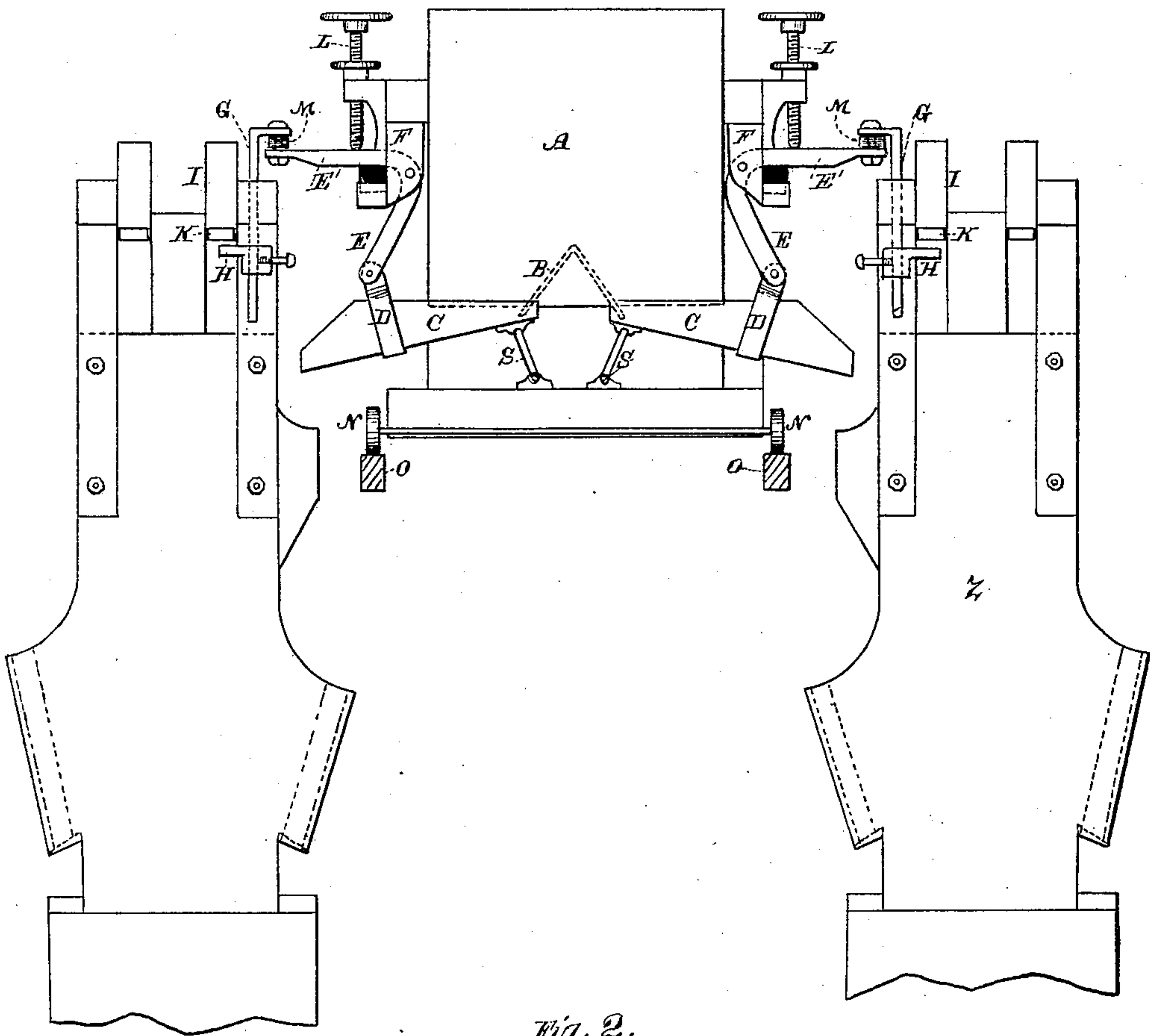
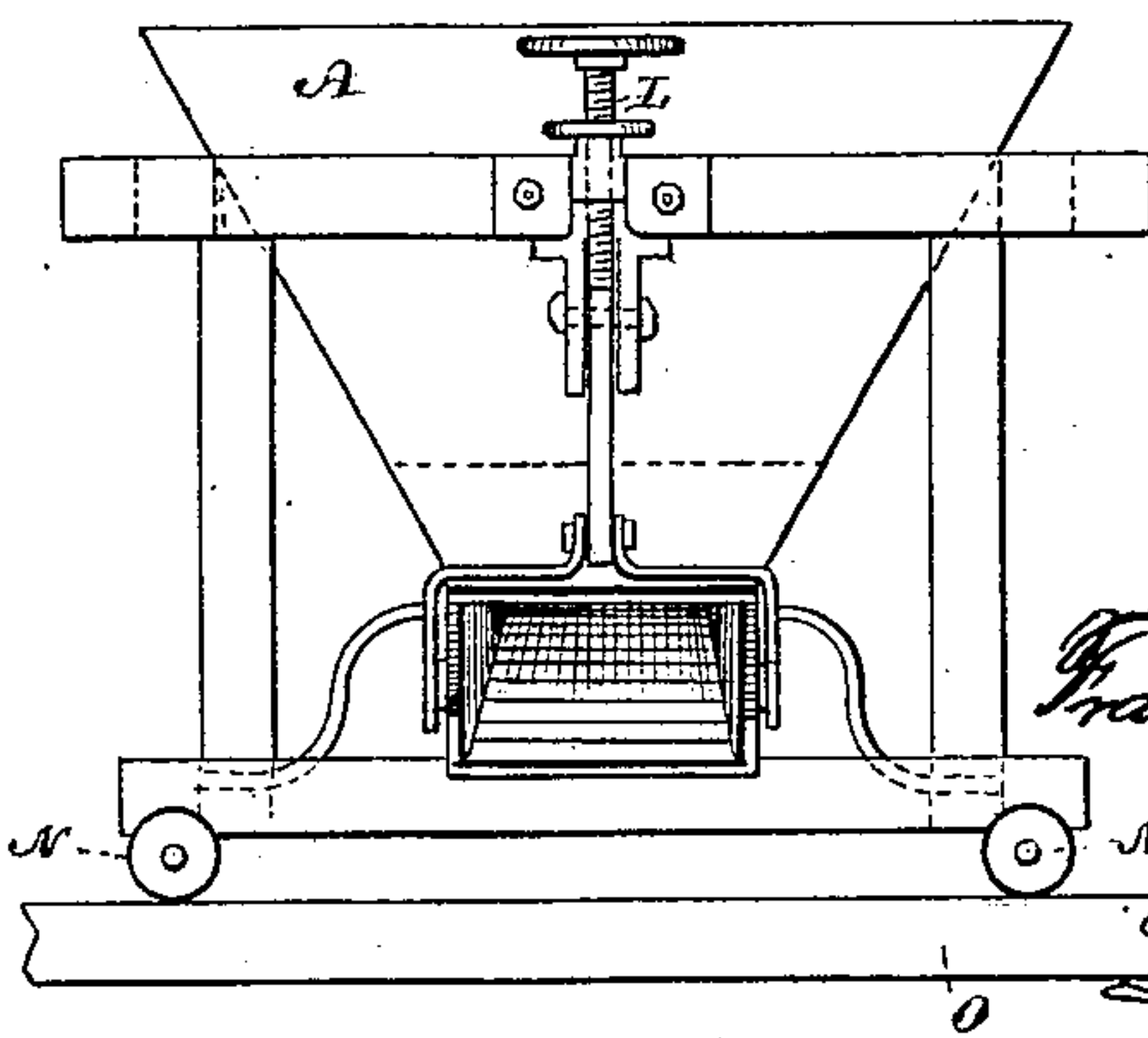


Fig. 2.



Witnesses

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Fig. 3.

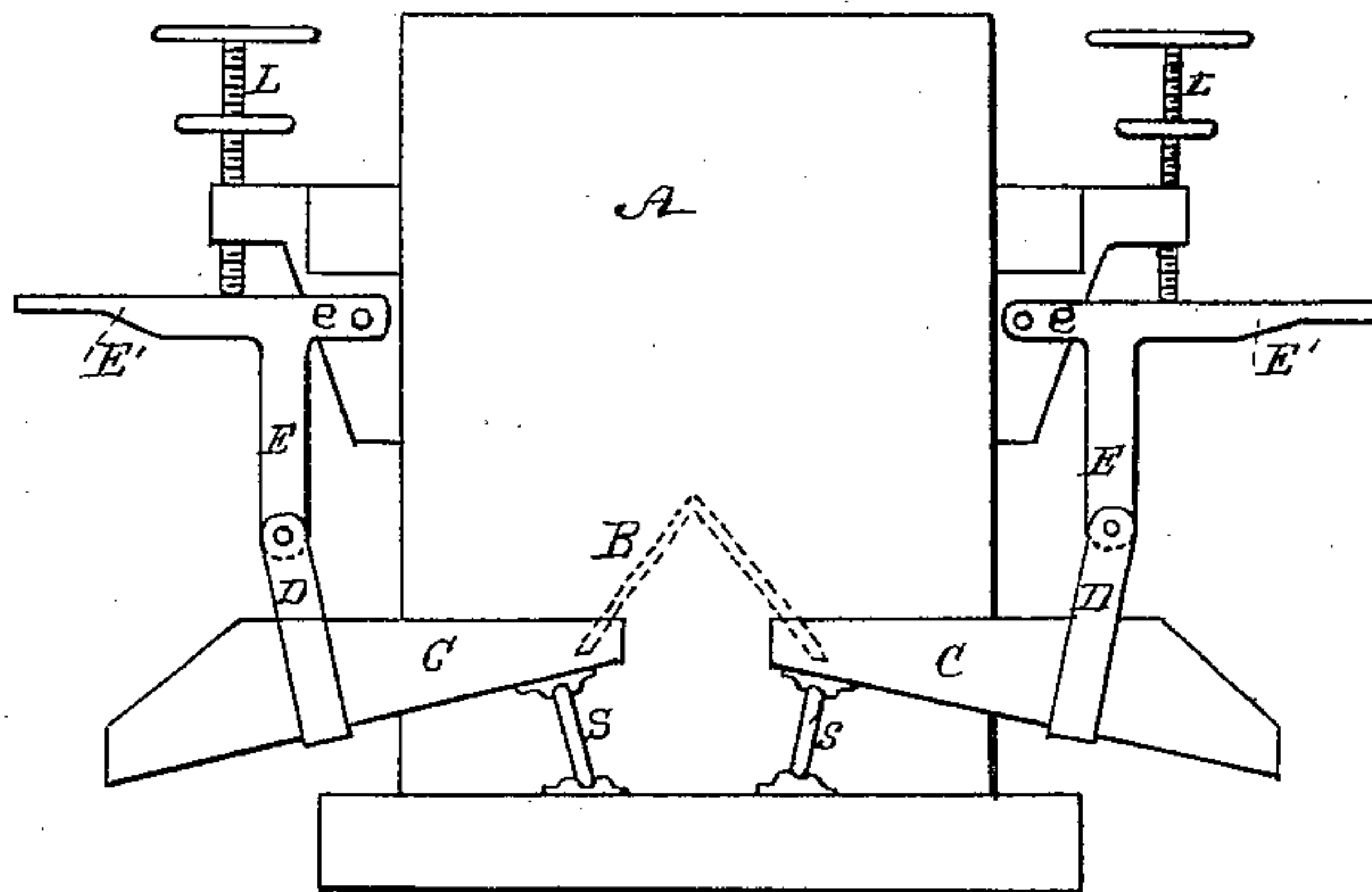
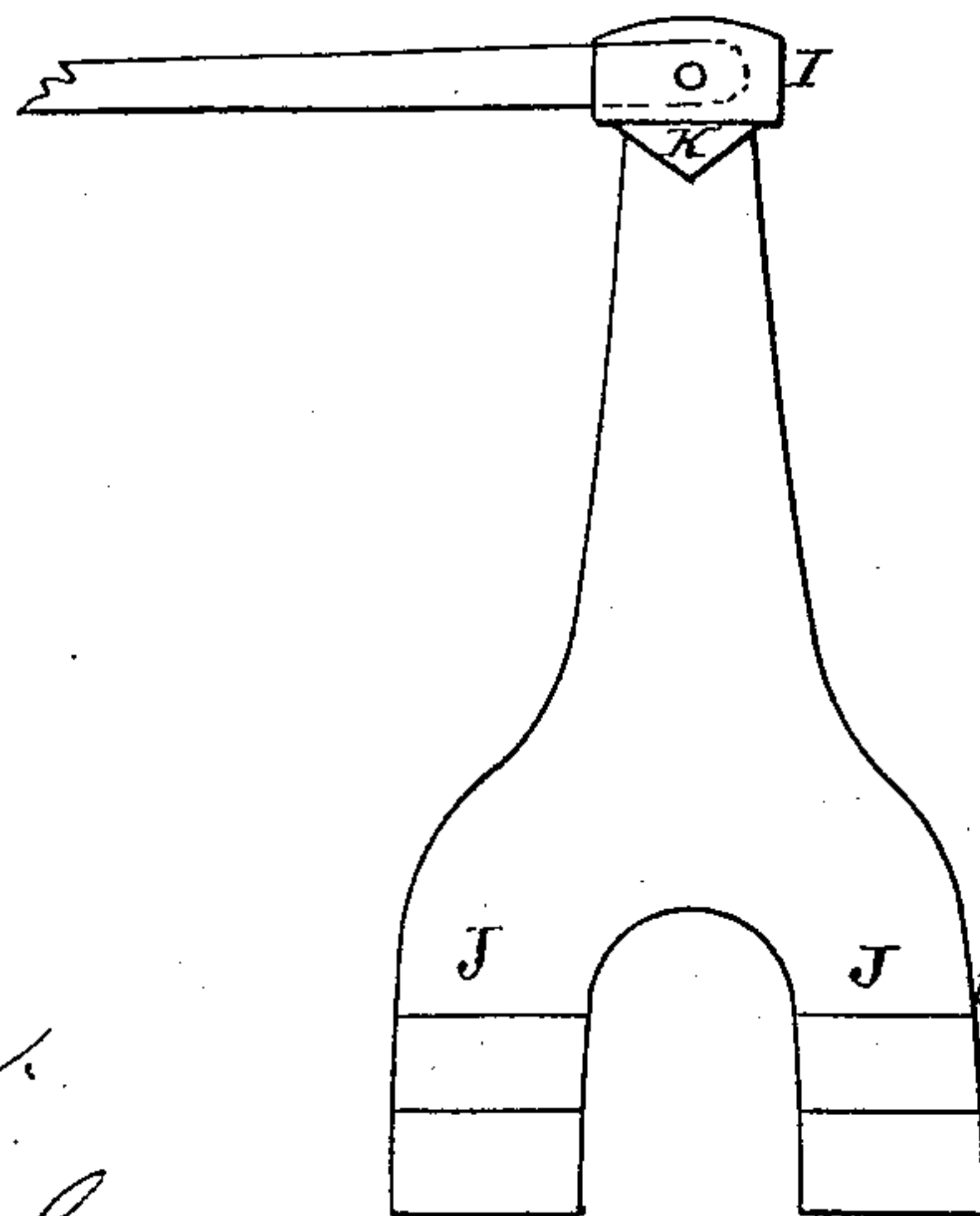


Fig. 4.



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UNITED STATES PATENT OFFICE.

FRANK A. HUNTINGTON, OF SAN FRANCISCO, CALIFORNIA.

ORE-FEEDER FOR CRUSHING-MILLS.

SPECIFICATION forming part of Letters Patent No. 246,392, dated August 30, 1881.

Application filed August 26, 1880. (No model.)

To all whom it may concern:

Be it known that I, FRANK A. HUNTINGTON, of the city and county of San Francisco, and State of California, have invented an Improved Ore-Feeder for Crushing-Mills; and I hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to certain improvements in ore-feeding devices for crushing-mills; and it consists in a novel combination of a double-feed hopper having two oppositely-projecting feedingspouts or troughs with crushing apparatus upon opposite sides of the feeder, each being provided with a means for actuating the spouts and causing them to discharge ore into the crushers as required, as will be more fully described by reference to the accompanying drawings, in which—

Figure 1 is an elevation of my device and two batteries. Fig. 2 is a side view of my feeder. Fig. 3 shows another form of lever. Fig. 4 is a side view of the oscillating stamp used in connection with my ore-feeder.

In the present case, for illustration, I have shown my feeder as adapted to supply ore to two or more batteries, in which two stamps are caused to rock by a pitman or connecting-rod, so that each one alternately falls upon its die, and these rocking stamps actuate the feeder.

The hopper A is made of any suitable shape; but I have shown it in the present case having parallel sides and converging ends.

At the bottom of my hopper is an upwardly-projecting pyramidal-shaped base, B, which extends from one end to the other and parallel with the sides, as shown. This base serves to divide the ore which is placed in the hopper, and to direct it respectively to the two feeding troughs or spouts C. The conducting or feed spouts have their rear ends beneath the feed-openings in the hopper, and are supported on rock-shafts S so as to slide back and forward when actuated by the stamp, the space between their inner ends being sufficient to allow each spout a free movement without contact with the other. The outer ends of the spouts are supported by lugs or links D, which are pivoted to one arm of the bell-crank levers E E'. The angles of these levers are pivoted or journaled between lugs or projections F upon opposite sides of the feed-hopper, and the hori-

zontal arms E' project to a point near the mortars Z. An arm, G, is bolted or otherwise secured to the end of each of the levers, and an arm, H, is adjustably secured to each arm G.

The head I of the stamp J has a V-shaped projection, K, which strikes the arm H with each oscillation of the stamp when there is too little ore in the battery; but when a sufficient quantity is within the mortar it will raise the stamp so high that the projections K will cease to act upon the arm and the feeding will be stopped. The amount of feed will be regulated by means of a screw, L, which serves to adjust the lever E', and thus move the arm H, so that there will be more or less ore in the battery before the projection K will strike it and again operate to feed the ore into the mortar. At the point where the end of the lever E' is connected with the arm G, I introduce a rubber or other elastic buffer, M, which relieves the parts from jar.

My hopper A is mounted upon wheels N, and these are adapted to run upon tracks O, which extend parallel with and between the mortars, so that it may be conveniently moved into or out of position. By this means the mortars and their crushing-stamps may be economically arranged in two rows parallel with each other, and but a small distance apart, and the single peculiarly-arranged hopper will serve to feed both crushers simultaneously.

It will be manifest that a simple bell-crank lever having its arms at right angles with each other might be used; but I have found that when formed as shown in Fig. 1 the simultaneous backward and downward movement or swing of the hopper greatly facilitates the discharge of the ore, especially if the ore is wet or sticky.

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

1. The hopper A, provided with feed-openings, as described, and the internal pyramidal dividing-base B, in combination with the spouts C and actuating mechanism, whereby ore may be fed from the single hopper simultaneously to two batteries upon opposite sides, substantially as herein described.

2. The spouts C, located one upon each side of the hopper A, in combination with the bell-

crank levers E E', arms G and H, V-shaped projections K upon the oscillating stamp-head, and the elastic buffers M, substantially as and for the purpose herein described.

5 3. The double-discharge hopper A, with its ore-directing base B, and the discharge-spouts C, with their actuating mechanism, in combination with supporting frame and wheels N, adapted to run upon the track O, so that the
10 feeder may be moved between the batteries, substantially as herein described.

4. The combination of the batteries having

oscillating stamps, as shown, with the hopper A, having the dividing and directing base B, the ore-spouts C, and the actuating arms and
15 levers, whereby the two sets of crushers are supplied with ore from one hopper simultaneously, substantially as herein described.

In witness whereof I have hereunto set my hand.

FRANK A. HUNTINGTON.

Witnesses:

S. H. NOURSE,

FRANK A. BROOKS.