H. J. HUTTNER.

FEEDING AND DISCHARGING HOPPER.

No. 180,591. Patented Aug. 1, 1876.

Fig. 1

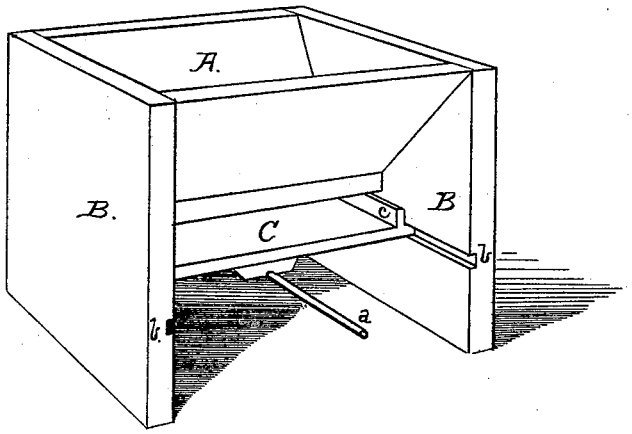
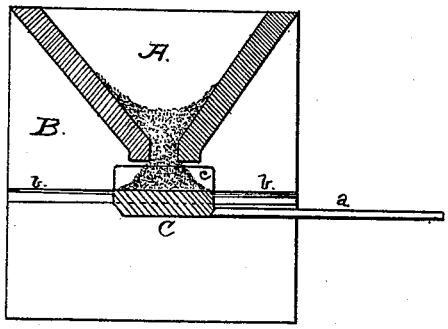


Fig. 2



Witnesses:

Hellouteverde.

William H. Osborn.

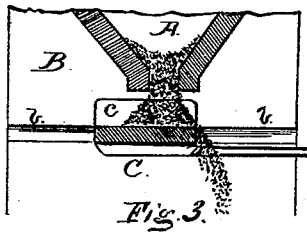


Fig. 3.

Inventor

Henry J. Huttner.

By. E. M. Smith.

Atty.

UNITED STATES PATENT OFFICE.

HENRY J. HUTTNER, OF NEW ALMADEN, CALIFORNIA.

IMPROVEMENT IN FEEDING AND DISCHARGING HOPPERS.

Specification forming part of Letters Patent No. **180,591**, dated August 1, 1876; application filed April 27, 1876.

To all whom it may concern:

Be it known that I, HENRY J. HUTTNER, of New Almaden, in the county of Santa Clara and State of California, have invented an Improved Feeding and Discharging Hopper, of which the following is a specification:

My invention relates to an improved device for feeding and discharging ores, coal, grain, &c., from a receiving-hopper. It consists mainly of a hopper with an oblong slot or opening at its base, and underneath which is an apron, which covers the line of the mouth of the slot, and which is constructed so as to be moved back and forth. The ore or other material is received from the hopper through the slot and falls upon the apron, when, by moving it (the apron) back and forth, the ore falls from the sides of the apron into receptacles, or under the stamps beneath, all of which will be hereinafter more fully set forth.

Referring to the accompanying drawings, Figure 1 is a perspective view of my hopper; Fig. 2, a side sectional elevation, showing the ore at rest on the apron. Fig. 3 is also a side sectional elevation with the slide or apron moved forward, which permits the ore to drop from its side.

A represents an oblong hopper, having inclined sides, and supported on the end pieces B B, to which the mouth of the hopper extends. Underneath the mouth is placed an apron or slide, C, provided with side pieces *c*, and constructed so as to be moved back and forth at desired intervals in grooves *b* in the side of the frame by means of the arm *a*. This arm may be moved by any suitable mechanism.

The operation will be as follows: The ore or other material to be fed or discharged is put into the hopper, and a sufficient quantity to fill the apron will pass through the oblong mouth, and there remain unless the apron or slide is moved, as the material is arrested from further discharge by stopping or choking the mouth of the slot, the sides and ends of the apron forming the angle of rest. Now, move the sliding apron back and forth, and the material will drop from either side of the apron into any desired receptacle; or, if ore is being discharged, it may be made to fall under stamps, to be crushed and reduced; or, if coal, it may be made to fall on the hopper or chute, and its discharge to the bunkers or other receptacles be governed by the motion of the sliding apron; for if the slide be moved to one side, the support of the material on that side is withdrawn, and some of it falls off, and if the slide be moved back, or in the opposite direction, the same action takes place as on the other side. If the motion is continued, a regular discharge is established, it being governed entirely by the movement of the apron, in the absence of which the discharge would be continued, or until the contents of the hopper were exhausted.

In practice the slide may be made to move on friction-rollers or other guides.

It should also be here observed that a circular hopper might be employed, and a circular apron or table.

Thus it will be seen that my device is simple and cheap. It can be made use of in feeding and discharging material of irregular sizes, or even ore, when mixed with sand, or pieces of irregular shape and size, without being choked, and no pieces can get lodged or jammed, so as to choke the discharge, if the precaution be taken to make the distance between the slide or apron and mouth of the hopper as great as the width of the mouth of the hopper.

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

The combination, with the oblong hopper A having a similar discharging-mouth, of the moving horizontal apron C, supported under the said hopper, whereby the material passing from the hopper may be caused to fall from either side of the said apron, substantially as described and shown.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 4th day of April, 1876.

HENRY J. HUTTNER. [L. S.]

Witnesses:

C. W. M. SMITH,

PHILIP MAHLER.