

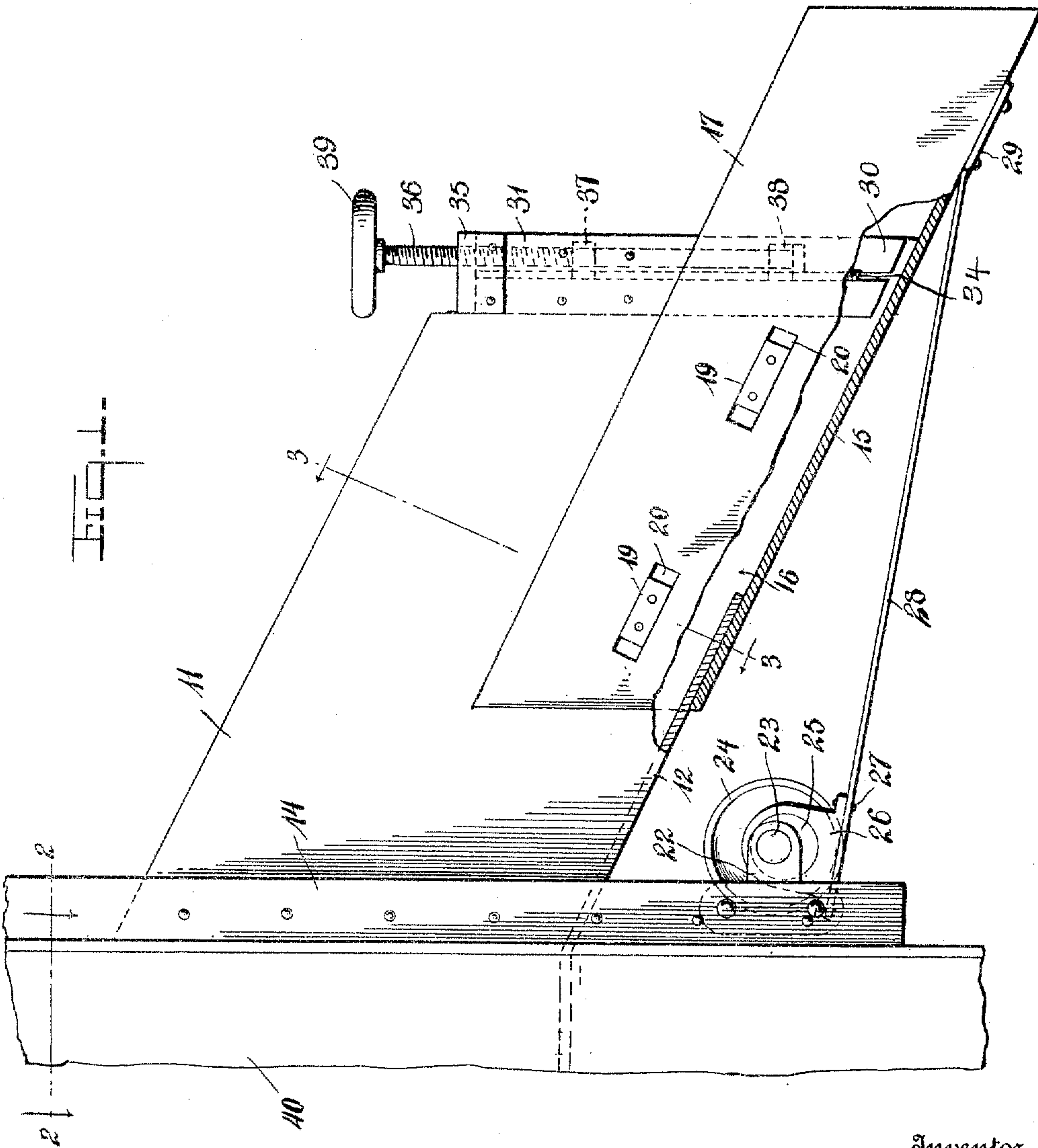
FEED REGULATOR.

APPLICATION FILED OCT. 25, 1900. RENEWED SEPT. 23, 1910.

990,395.

Patented Apr. 25, 1911.

2 SHEETS—SHEET 1.



Witnesses

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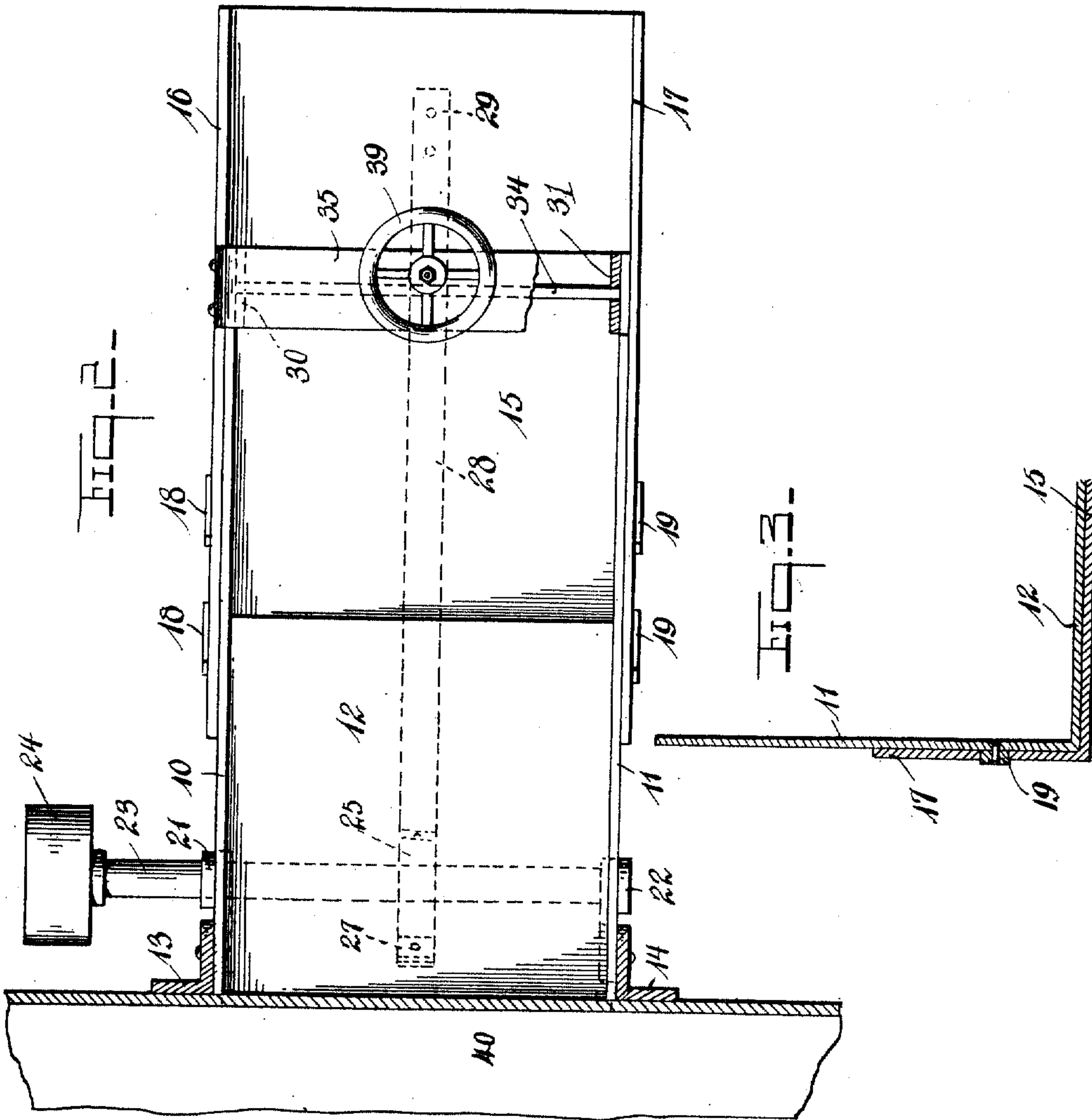
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UNITED STATES PATENT OFFICE.

JAMES W. SEARLE, OF EL PASO, TEXAS.

FEED-REGULATOR.

990,395.

Specification of Letters Patent.

Patented Apr. 25, 1911.

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To all whom it may concern:

Be it known that I, JAMES W. SEARLE, a citizen of the United States, residing at El Paso, in the county of El Paso, State of Texas, have invented certain new and useful Improvements in Feed-Regulators; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use same.

This invention relates to devices employed for feeding material from receptacles, more particularly to devices of this character wherein dry, powdered or otherwise finely divided material is required to be finely and uniformly distributed.

The improved device is designed more particularly for use in connection with the crusher or storage bins of ore machinery, but which may be employed in connection with various machines in which finely divided material is stored and from which it is to be delivered to crushing or separating machines, and for the purpose of illustration the improved device is shown applied to a conventional bin for the storage of pulverized ores, but it will be understood that the invention is not necessarily limited to use in connection with any specific storage structure.

The invention consists in certain novel features of construction as hereafter shown and described and then specifically pointed out in the claims; and, in the drawings illustrative of the preferred embodiment of the invention, Figure 1 is a side elevation, partly in section, of the improved device, applied. Fig. 2 is a plan view of the same with the bin in section on the line 2—2 of Fig. 1, and with the gate also partly in section. Fig. 3 is a detail sectional view on the line 3—3 of Fig. 1.

The improved device comprises a relatively short spout formed with vertical sides 10—11 and a bottom 12, the bottom being shorter than the sides, as shown in Fig. 1. The spout 10—11—12 is inclined as shown, and connected to one of the side walls of a storage bin, represented at 14. All of the parts of the improved device are of plate metal, and the sides 11—12 of the spout are connected to the bin by suitable angle-irons 13—14, the lower ends of the angle-irons 13—14 extending below the bottom of the

spout, as shown, the object to be hereafter explained.

Fitting around the bottom and the sides of the spout is a relatively shallow chute comprising a flat inclined bottom 15 and vertical sides 16—17, the bottom 15 extending beneath the relatively short bottom 12 of the spout and the sides 16—17 bearing against the vertical sides 10—11 of the spout. Connected to the side 10 of the spout are guide blocks 18, while similar guide blocks 19 are connected to the side 11, the longitudinal planes of the blocks corresponding to the longitudinal plane of the spout, or in parallel relations to the bottom 15 of the chute. The vertical sides 16—17 of the chute are provided with longitudinal guideways or slots indicated at 20, and through which the blocks 18—19 extend, as shown. By this means the chute is maintained in position relative to the spout, while at the same time movable longitudinally thereof within the range of the slots. The chute is thus maintained in its parallel relation to the spout, while at the same time is free to be moved in longitudinal alinement therewith, as will be understood.

Connected to the depending portions of the L-members 13—14 are bearings 21—22, and mounted for rotation through these bearings is a shaft 23 having means, such as a belt pulley 24, for imparting rotary motion thereto. Connected to the shaft 23, preferably midway between the bearings 21—22, is an eccentric 25, and fitting over this eccentric is an eccentric head 26, the latter being riveted or otherwise secured as shown at 27 to a resilient strap 28. The forward end of the strap 28 is connected to the underface of the bottom 15 of the chute. By this simple arrangement it will be obvious that when the shaft 23 is rotated the eccentric 25 will operate the strap 28 and thus impart a rapid vibratory or shaking motion to the chute.

Connected to the inner face of the forward terminal of the vertical side 10 of the spout are spaced vertical guide members 30, while similar vertical guide members 31 are connected to the inner face of the side 11, and slidable at its ends between the guide members is a shut-off gate 34, the lower edge of the gate being adapted to be located above the upper face of the bottom 15 of the chute,

and thus cut-off the flow of the material, if required.

Extending across the upper ends of the vertical members 30--31 is a transverse member 35, the latter being secured rigidly to the members 30--31, as shown. The member 35 is provided centrally thereof with a threaded aperture through which a threaded rod 36 operates, the rod extending downwardly and mounted for rotation in spaced bearings 37--38 on the gate 34. The rod 36 is provided with a hand wheel 39 to facilitate its operation. By this simple arrangement it will be obvious that by rotating the screw 36 by its wheel 39 the gate may be elevated and depressed as required. By this simple means the feed operating beneath the gate may be readily controlled to correspondingly control the flow of the material.

With a device thus constructed, it will be obvious that the material may be fed from the bin at a uniform rate and the amount of the material which is caused to flow over the chute may be readily controlled by simply manipulating the screw rod 36, and thus adjusting the gate to any required extent.

The improved device is simple in construction, can be readily attached without material structural changes to storage bins of various kinds and to storage bins employed for various purposes.

What is claimed is:—

1. In a device of the class described, a spout having spaced vertical sides and an inclined bottom with the sides extending in

advance of the bottom, blocks connected to said spaced sides, a feed chute comprising an inclined bottom operating beneath the inclined bottom of the spout and with vertical sides engaging the vertical sides of the spout, the sides of the chute being provided with longitudinal slots bearing over said blocks and supporting the chute for movement longitudinally of the spout, and maintaining the chute in constant parallel relations to the spout, and means for vibrating said chute.

2. In a device of the class described, a spout having spaced vertical sides and an inclined bottom with the sides extending in advance of the bottom, blocks connected to said spaced sides, a feed chute comprising an inclined bottom operating beneath the inclined bottom of the spout and with vertical sides engaging the vertical sides of the spout, the sides of said chute being provided with longitudinal slots bearing over said blocks and supporting the chute for movement longitudinally of the spout, and maintaining the chute in constant parallel relations to the spout, a gate operating between the extending side portions of the spout and within the chute, means for adjusting said gate, and means for vibrating said chute.

In testimony whereof, I affix my signature, in presence of two witnesses.

JAMES W. SEARLE.

Witnesses:

ROBT. J. CARSON,
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