(No Model.)

S. M. & W. H. GRAUMLICH.

FEED REGULATOR.

No. 392,027. Patented Oct. 30, 1888.

Fig 1

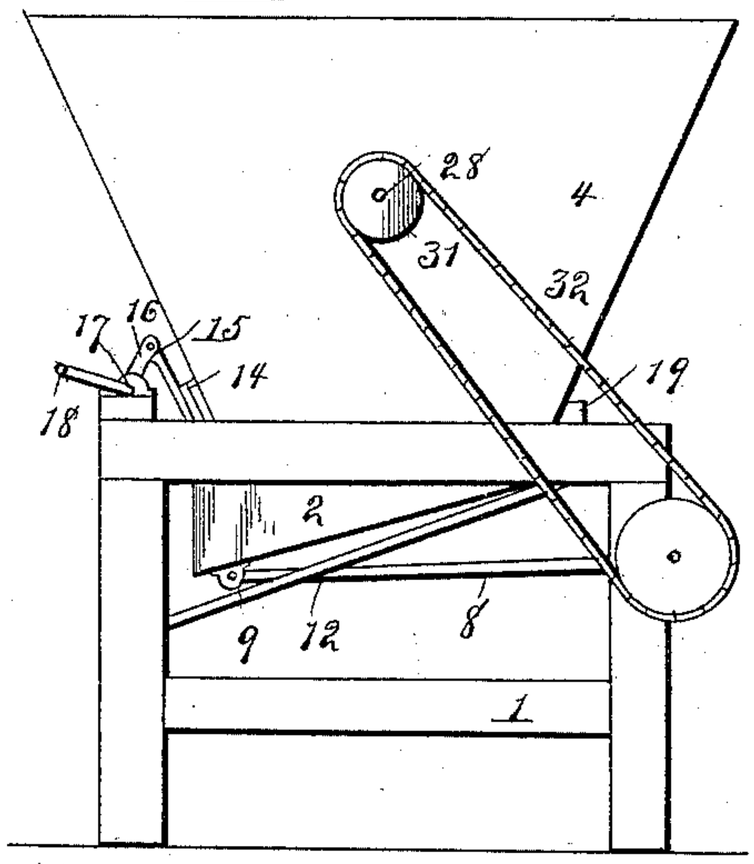


Fig 2

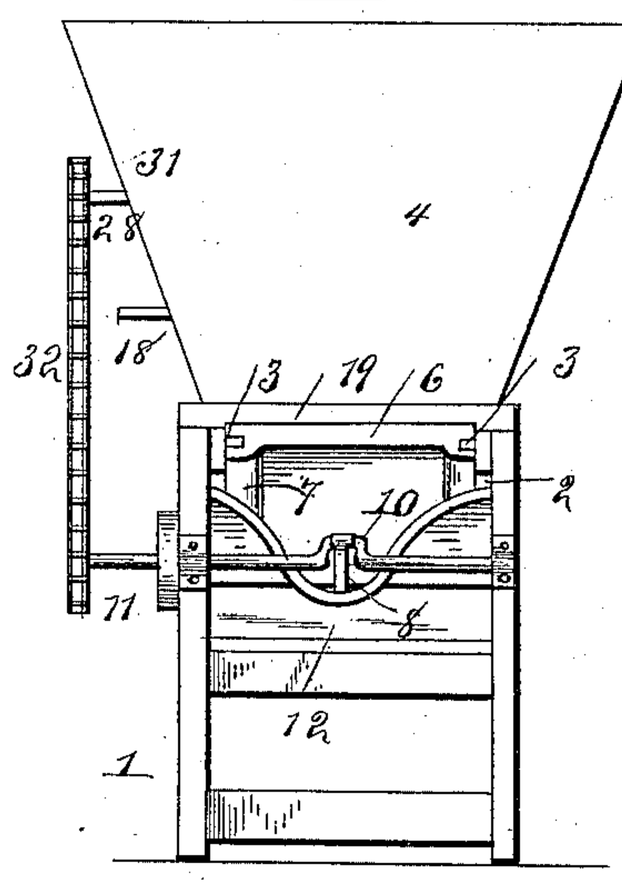


Fig 3

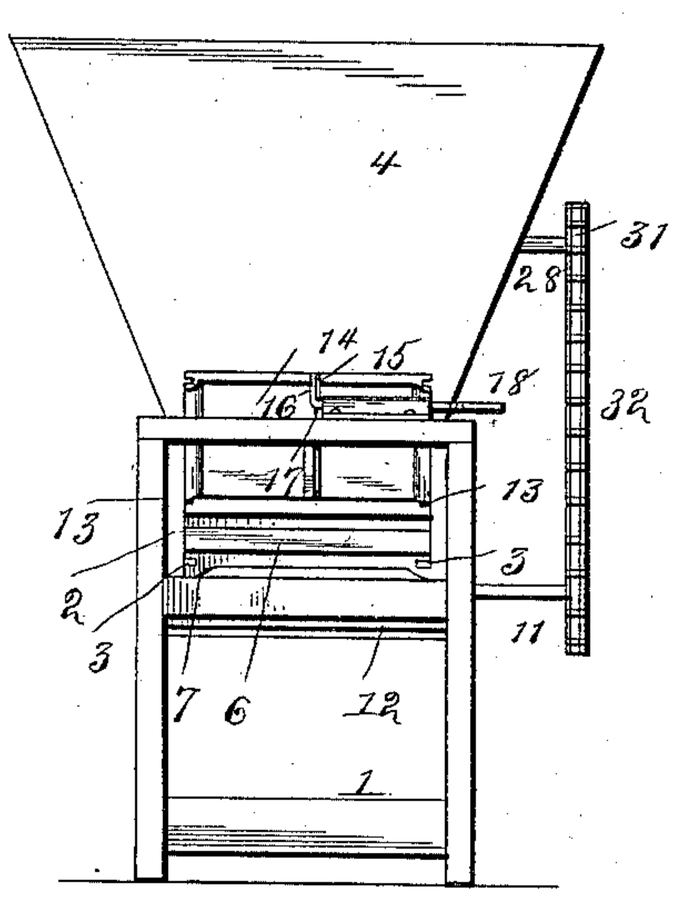


Fig 4

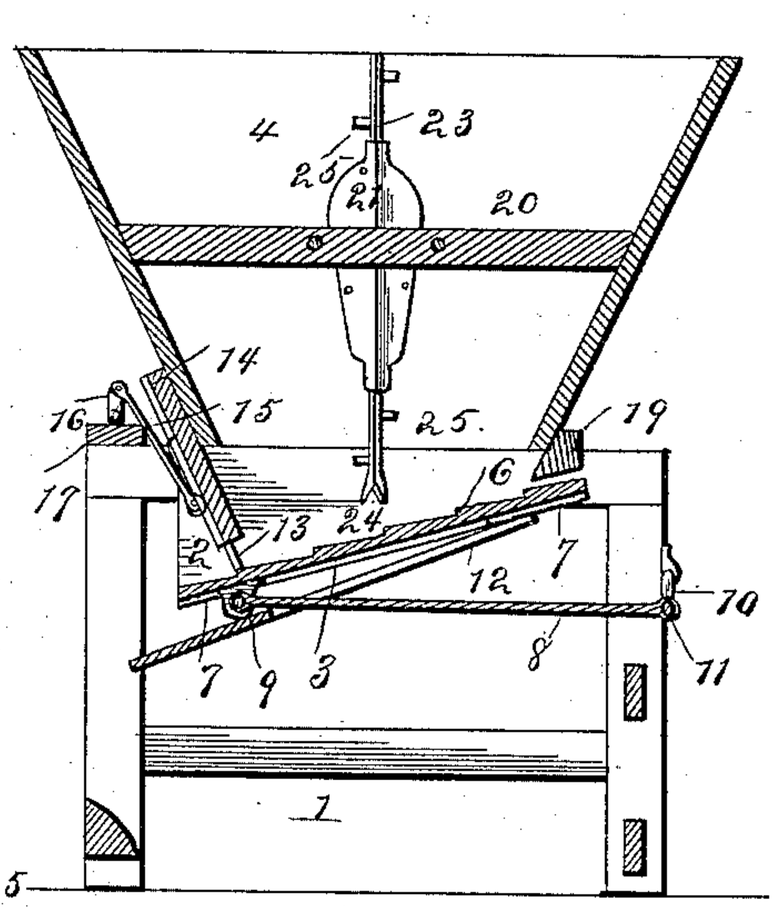
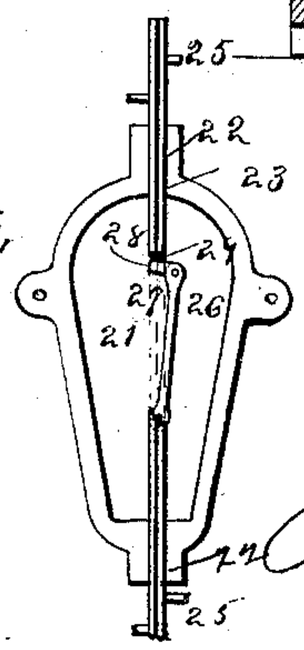


Fig 5



WITNESSES.

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UNITED STATES PATENT OFFICE.

SOLOMON M. GRAUMLICH AND WILLIAM H. GRAUMLICH, OF DUVALL, OHIO.

FEED-REGULATOR.

SPECIFICATION forming part of Letters Patent No. 392,027, dated October 30, 1888.

Application filed February 7, 1888. Serial No. 263,212. (No model.)

To all whom it may concern:

Be it known that we, SOLOMON M. GRAUMLICH and WILLIAM H. GRAUMLICH, both of Duvall, in the county of Pickaway and State of Ohio, have invented certain new and useful Improvements in Feed-Regulators; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, which form a part of this specification, and in which—

Figure 1 is a side view of our improved feed mechanism. Fig. 2 is a front view of the same. Fig. 3 is a rear view. Fig. 4 is a vertical longitudinal sectional view, and Fig. 5 is a detail view.

The same numerals of reference indicate the same or corresponding parts in all the figures.

Our invention has relation to feeding mechanism for feeding grain or middlings into elevators, mills, or any purifying or other machine for treating grain or middlings, and it contemplates certain improvements upon that class of feed mechanism in which the feed-hopper is provided with forcing mechanism below its mouth, and with a stirrer working with its lower end in the mouth of the hopper; and it consists to that end in the improved construction and combination of parts of such a feed mechanism, as hereinafter more fully described, and particularly pointed out in the claim.

In the accompanying drawings, the numeral 1 indicates the frame of the feeder, in and below which frame the mechanism for further treating the grain or middlings is arranged, and two side pieces, 2, are secured to the sides of the top frame of this supporting-frame and have their lower inclined edges formed with inwardly-projecting ribs or flanges 3, the edges and ribs or flanges being inclined toward the rear or discharge end of the machine. The feed-hopper 4 is supported upon the frame above these side pieces having its mouth registering with the chute formed by the side pieces. A riffled, stepped, or ribbed vibrating shelf, 6, is formed with grooves in its side edges, with which it may slide upon the ribs or flanges of the side pieces, the said grooves being preferably formed by wide lips 7, projecting laterally from the under side of the shelf near the side edges. The shelf may be vibrated or reciprocated by a connecting-rod, 8, pivoted between two lips or ears, 9, upon the under side of the shelf, and pivoted at its forward end to a crank, 10, upon a transverse shaft, 11, journaled in the forward end of the frame, and having suitable connection to the mechanism below the feeder, so that it may be operated and revolved from the same.

A plate, 12, is hinged with its upper end below the upper end of the vibrating shelf, being preferably hinged to the upper ends of the inclined edges of the side pieces, and this plate may be adjusted at any desired angle, so as to direct grain from the mouth of the hopper to its destination when the vibrating shelf is removed and not required for the feed. The inner sides of the side pieces near the rear ends are formed with ribs or flanges 13, parallel with the forward side of the hopper, and a gate, 14, slides with its grooved side edges upon these ribs, sliding up on the outside of the forward side piece of the hopper and forming a joint upon the same, preventing the grain or middlings from passing out between the gate and the said side of the hopper. An arm, 15, is pivoted to the outer side of this gate, and is pivoted at its upper end to an arm, 16, projecting from the inner end of a rock-shaft, 17, journaled upon the rear end of the top of the supporting-frame, and the outer end of the rock-shaft is provided with an arm, 18, by means of which the gate may be raised or lowered and adjusted in its various positions.

A beveled bar, 19, is secured across the top of the supporting-frame above the upper end of the reciprocating shelf, and serves to form a tight joint between the lower edge of the forward side of the hopper and the upper end of the shelf, preventing any grain or middlings from escaping between the said parts.

A bar, 20, is secured horizontally and longitudinally in the hopper, and a box or casing, 21, preferably of cast metal and formed in two parts secured together by suitable bolts, is secured to the middle of this bar immediately above the center of the mouth of the hopper, and this casing is formed with two registering vertical bearings, 22, in its upper and lower

ends, in which a stirring-rod, 23, may reciprocate. This rod is provided with a forked head, 24, at its lower end and with a number of cross-pins, 25, below and above the casing, and an arm, 26, is pivoted to the rod and to a crank, 27, upon the inner end of a horizontal shaft, 28, journaled with its inner portion in a horizontal bearing in the side of the casing, so that the stirring-rod may be reciprocated by revolving the said shaft, the shaft passing out through the side of the hopper, having a bearing in the same, and having a pulley, 31, upon its end, which is connected by a belt or sprocket-chain, 32, to a pulley, 33, upon the shaft driving the vibrating shelf.

It will now be seen that when the feeder is in operation and grain or middlings are fed into the hopper the gate may be opened to allow a stream of grain or middlings of the desired volume to pass out at the bottom of the hopper, and the vibrating riffled or stepped shelf will keep the grain or middlings loose, and will force them toward the mouth of the inclined chute formed by the shelf and the side pieces, the riffles or steps upon the shelf facing in the discharge direction. The stirring-rod will keep the grain or middlings loose on account of its cross-pins stirring up the material when the rod is reciprocated, and the lower forked end of the rod will stir the material upon the reciprocating shelf, and also force the material out of the hopper and down upon the shelf. The grain or middlings will be fed in an even and loose stream through the opening formed between the gate and the lower end of the shelf, and any lumpy material—as, for example, wet grain or heated or damp middlings—will be stirred and loosened by the reciprocating rod and by the vibrating riffled shelf, so that it will pass evenly and smoothly out at the discharge end.

Although this feeder is especially intended and particularly adapted for feeding grain to elevators, yet it will be very serviceable for feeding grain or middlings to roller-mills or purifying machinery, or to any place where even feed is desired and where loose material and an even and controllable volume of material is desired.

Having thus described our invention, we claim and desire to secure by Letters Patent of the United States—

In a feed-regulator, the combination, with the hopper and a bar secured horizontally across the interior of the same, of a closed casing formed with vertical registering-bearings at the ends thereof, a horizontal shaft having one end journaled in the side of the hopper and the other in the farther side of the casing, a crank formed upon the shaft within the casing, and a vertically-reciprocating stirrer-rod connected to said crank and passing through said end bearings, and means to rotate said shaft, substantially as set forth.

In testimony that we claim the foregoing as our own we have hereunto affixed our signatures in presence of two witnesses.

SOLOMON M. GRAUMLICH.
WILLIAM H. GRAUMLICH.

Witnesses:
ELISHA WARREN,
WILLIAM SHANNON.