No. 887,785. PATENTED MAY 19, 1908.

F. G. GAUNTT.

VARIABLE SPEED MECHANISM.

APPLICATION FILED AUG. 7, 1906.

2 SHEETS—SHEET 1.

Fig. 1.

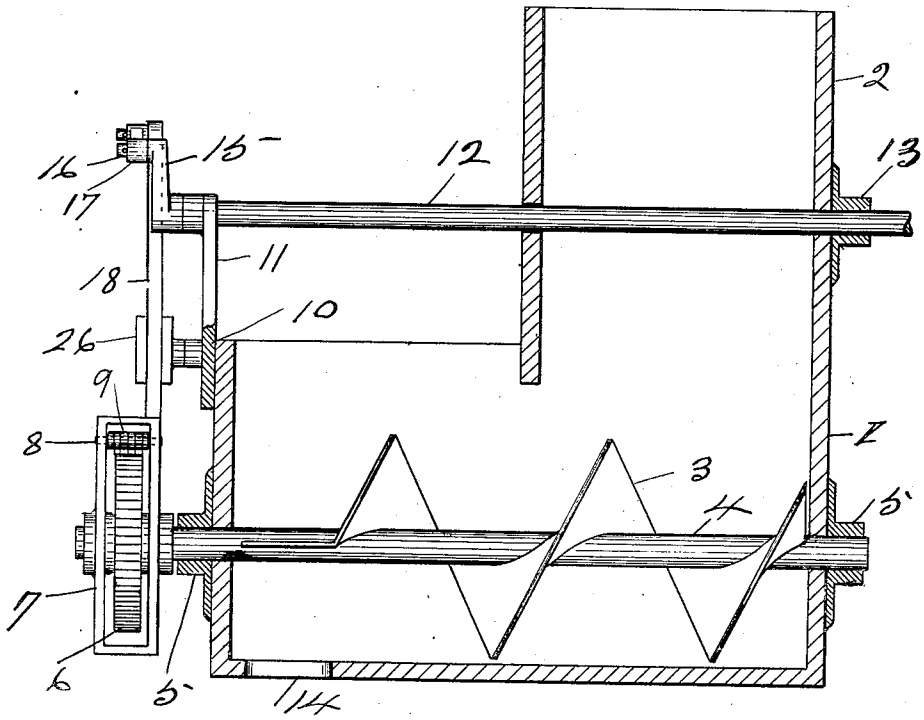
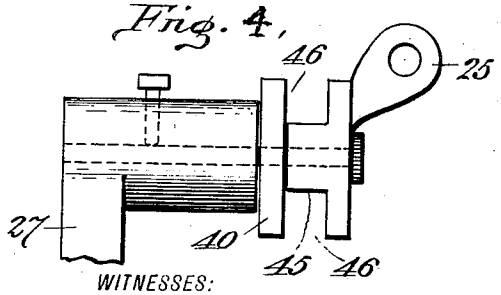


Fig. 4.



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2 SHEETS—SHEET 2.

Fig. 2

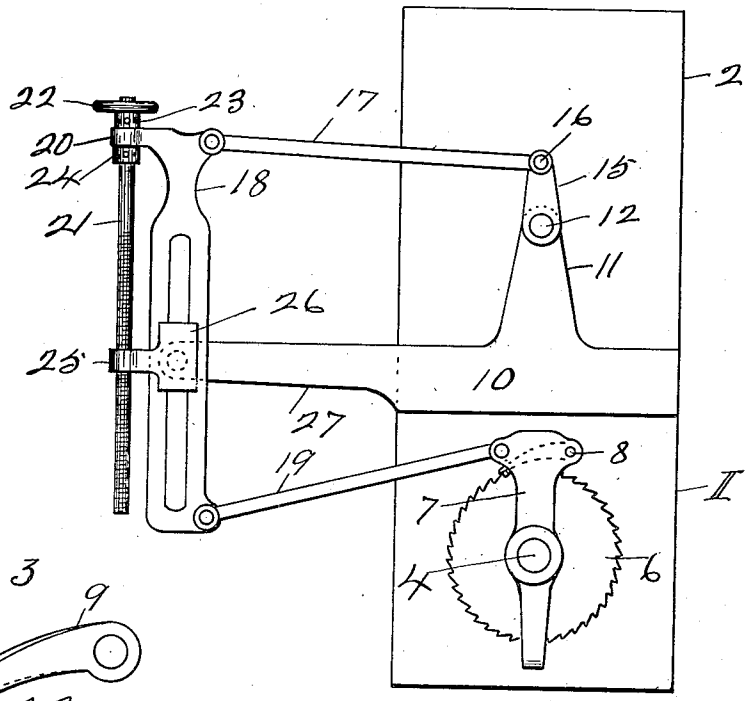
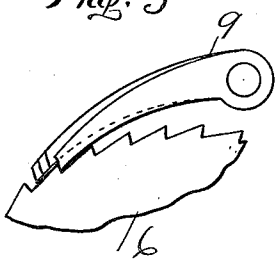


Fig. 3



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UNITED STATES PATENT OFFICE.

FOREST G. GAUNTT, OF FORT WAYNE, INDIANA.

VARIABLE-SPEED MECHANISM.

No. 887,785. Specification of Letters Patent. Patented May 19, 1908.

Application filed August 7, 1906. Serial No. 329,598.

To all whom it may concern:

Be it known that I, FOREST G. GAUNTT, a citizen of the United States, residing at Fort Wayne, in the county of Allen, in the State of Indiana, have invented certain new and useful Improvements in Variable-Speed Mechanism; and I 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 part of this specification.

My invention relates to improvements in variable speed mechanism.

The object of my present invention is to provide a comparatively cheap, simple and efficient automatic feeder specially designed and adapted for use in flouring mills, but also adapted for feeding and measuring shelled grain, potatoes, coal and other suitable materials.

My invention consists of a novel means for actuating a worm conveyer; and novel means for adjusting or regulating the speed of the conveyer.

The novel features of my invention reside in the conveyer actuating and speed regulating means, and in the coöperative relation of the operative parts.

Similar reference numerals indicate like parts throughout the several views of the drawings in which

Figure 1 is a vertical central section of my invention showing the conveyer, the driving shaft, and their connecting mechanism. Fig. 2 is a front end view of my invention showing the relative arrangement of the coöperating actuating and speed regulating means. Fig. 3 is an enlarged detail of the plural pawls of varying lengths in position on a section of the ratchet wheel on the conveyer shaft. Fig. 4 is an enlarged detail of the two-part fulcrum block 26 showing the manner of securing it in position.

Referring now particularly to Figs. 1 and 2, the box or casing 1 within and upon which the operating mechanism is mounted, may have an upward extended portion or hopper 2 at its rear end into which the material to be fed or measured is discharged. This casing has a proper sized opening 14 in its bottom near its forward end in coöperative relation with the contained worm conveyer 3 which is fixed in the usual manner upon the horizontal shaft 4 rotatably mounted in suitable bearings 5 on the outer faces of the said casing.

On the forward extended end of the conveyer shaft 4 is fixed a ratchet wheel 6, and also a pivotally mounted slotted plate or oscillating lever 7 in the upper end of which is fixed a transverse pin 8 on which are pivotally mounted a plurality of pawls 9 of slightly different lengths as shown in Fig. 4 and adapted for an actuating engagement with the ratchet wheel 6 in the manner hereafter described.

Across the front end of the casing 1 at or near the middle of its height is fixed a plate 10, having an upright arm 11 whose apertured free end is adapted to receive and form a bearing for the forward end of the driving shaft 12 whose rear end passes through the hopper 2 of the casing, having a suitable bearing 13 on the rear end of the casing and is provided upon its rear end with a belt pulley, not shown, or other power transmitting means.

On the forward end of the power shaft 12 is fixed a short crank 15 having a wrist-pin 16 to which is pivotally connected one end of the rod 17 whose other end is pivotally connected to the upper end of the vertically arranged lever arm 18, whose lower end is pivotally connected to the upper end of the plate 7 by means of the connecting rod 19.

The lever 18 has an apertured lateral lug 20 upon its upper end in which is rotatably mounted the upper end of the vertical adjusting screw 21, having a thumb-nut 22 and two fixed collars 23 and 24 above and below the said lug respectively to prevent any vertical derangement thereof. The lower end of the screw 21 is arranged in a vertical screw-threaded opening in a lateral lug 25 on the bifurcated fulcrum-block 26 which is pivotally mounted upon the extended end 27 of the plate 10, Fig. 3, whereby a limited vertical adjustment of the lever 18 is secured to afford a regulation of the speed of the conveyer in the manner hereafter described.

The operation of my invention thus described is obvious and briefly stated is as follows: Power being applied to rotate the shaft 12 the crank 15 will impart to the vertical bracket plate 7 an oscillatory motion through the medium of the rods 17 and 19 and the lever 18. Obviously lowering the lever 18 on its fulcrum block 26 by means of the adjusting screw 21 will proportionally increase the arc described by the oscillations of

the plate 7, and consequently will in like proportion increase the speed of the conveyer through the medium of the ratchet actuating gear; and raising the lever 18 will decrease the speed of the conveyer.

By constructing the pawl-carrying plate or bracket 7 with two connected sides, as shown in Fig. 1, and having two opposite bearings it is absolutely secure against such lateral derangement as would interfere with the reliable action of the pawls 9.

By providing a plurality of pawls 9 I secure a finer adjustment of the ratchet mechanism and avoid any appreciable lost motion, in a well understood manner.

By the adjustment of the lever 18 on its fulcrum any desired speed of the conveyer can readily be secured, and when the hopper is kept properly filled, it can readily be ascertained the amount of any particular kind of material which can be fed through the discharge opening 14 in a given time at different speed adjustments of the lever 18, whereby my invention can be employed for automatically measuring any kind of material it is adapted to handle.

Having thus described my invention and the manner of employing the same what I desire to secure by Letters Patent is:

1. In a variable speed mechanism, the combination of a driving shaft and a second shaft parallel therewith; a crank upon one end of the driving shaft; a pivoted lever connected at its upper end to the said crank and having a longitudinal slot therein, and having upon its upper end an apertured lateral lug; a fulcrum block pivotally mounted on a fixed support; a fixed support for the said block; a vertical adjusting screw mounted in the said lug and said block and adapted to raise or lower the said lever; ratchet actuating mechanism mounted on one end of the said second shaft; and means for pivotally connecting the same to the lower end of the said lever.

2. In a mechanism of the class specified a vertical pivotally mounted lever having an apertured lateral lug upon its upper end and provided with a longitudinal slot; a two-part centrally recessed fulcrum block pivotally mounted upon a fixed support in coöperative relation with the slot of the said lever, and provided with an apertured lateral lug; and an adjusting screw mounted in the lugs of the said lever and said block and adapted to impart to the lever a longitudinal adjustment relative to the fulcrum block.

Signed by me at Fort Wayne, in the county of Allen, in the State of Indiana, A. D. 1906.

FOREST G. GAUNTT.

Witnesses:
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