

(No Model.)

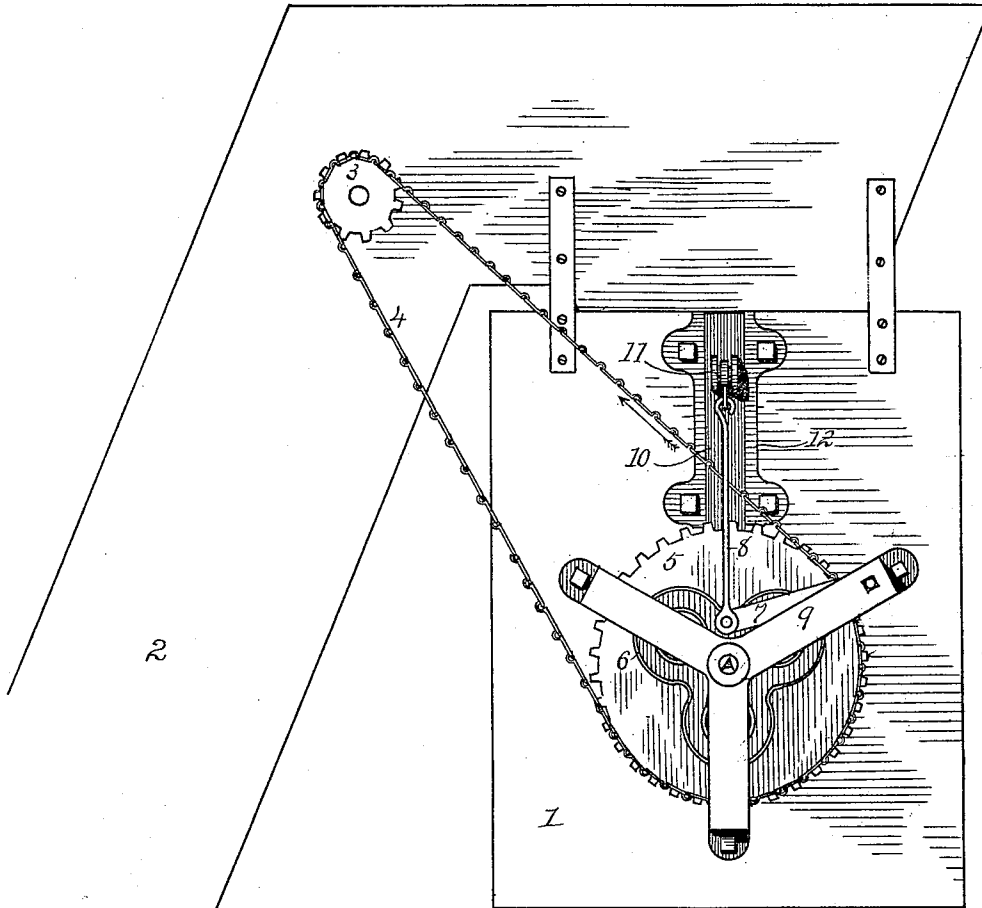
3 Sheets—Sheet 1.

C. J. HARTLEY.
GRAIN METER.

No. 463,988.

Patented Nov. 24, 1891.

Fig. 1.



ATTEST

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William Graham.

INVENTOR
C. J. HARTLEY.
by his attorney
L. P. Graham.

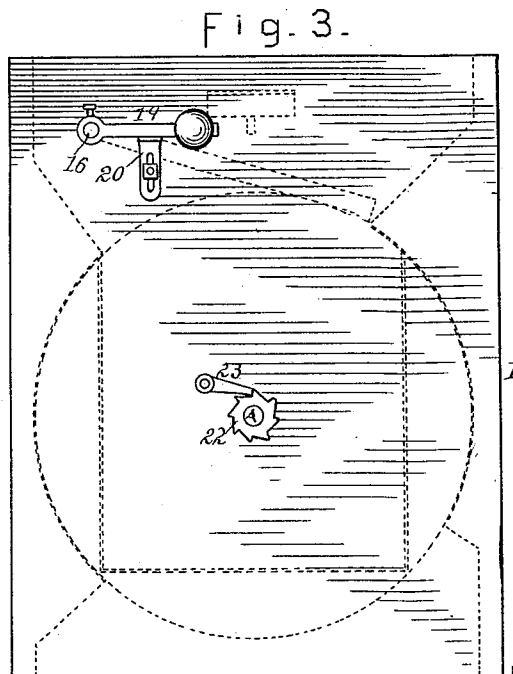
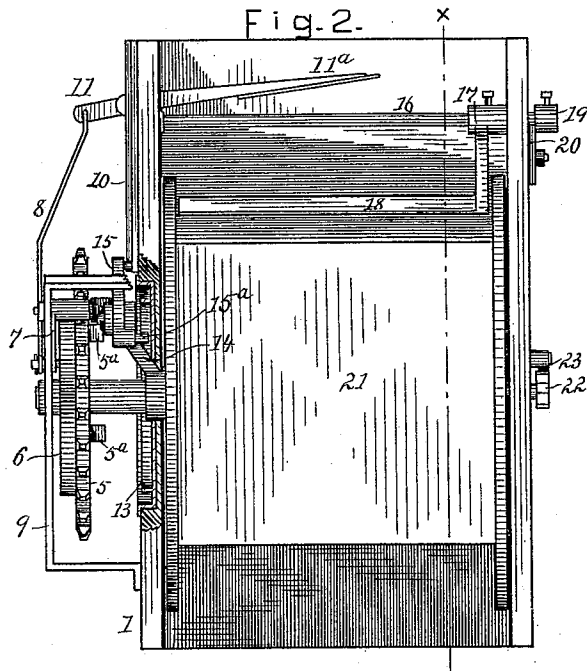
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Fig. 4.

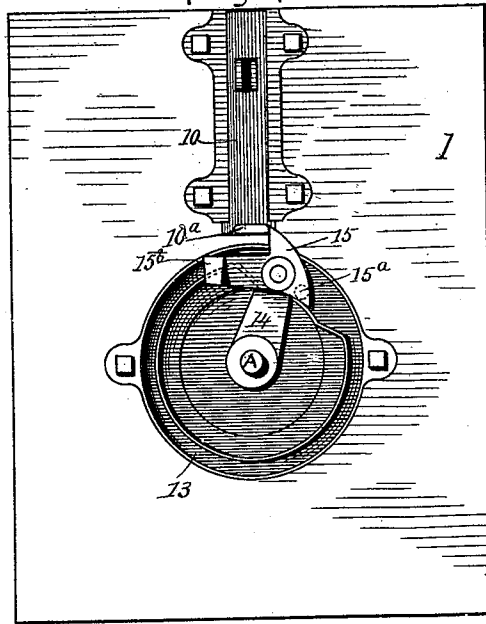
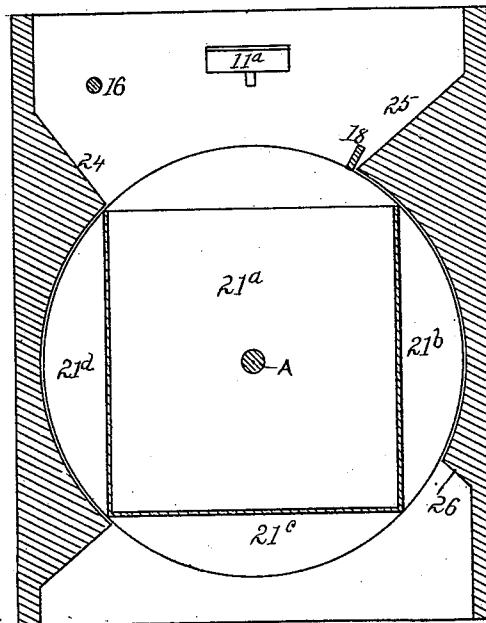


Fig. 5.



ATTEST

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L. P. Graham.

UNITED STATES PATENT OFFICE.

CHARLES J. HARTLEY, OF DECATUR, ILLINOIS, ASSIGNOR OF TWO-THIRDS
TO JOHN K. WARREN AND BRADFORD K. DURFEE, OF SAME PLACE.

GRAIN-METER.

SPECIFICATION forming part of Letters Patent No. 463,988, dated November 24, 1891.

Application filed March 26, 1891. Serial No. 386,461. (No model.)

To all whom it may concern:

Be it known that I, CHARLES J. HARTLEY, of Decatur, in the county of Macon and State of Illinois, have invented certain new and useful Improvements in Grain-Meters, of which the following is a specification.

The object of this invention is to automatically measure grain.

The invention consists in the details of construction and combination of parts hereinafter set forth and claimed, reference being made to the drawings accompanying and forming a part of this specification.

Figure 1 is a front view of my meter connected with the discharge end of a grain-elevator. Fig. 2 is a side view of the same with a side of the casing removed and a part of the front of the casing broken away. Fig. 3 is a rear view of the meter. Fig. 4 is a front view of the meter with part of the mechanism removed. Fig. 5 is a vertical section on broken line X in Fig. 2.

The outer casing is indicated by numeral 1, and it may be of any desired size, form, or proportion.

In Fig. 1 an elevator is shown at 2, and 3 is a sprocket-wheel on the drive-shaft of the elevator. Sprocket-wheel 5 rotates loosely on the meter-shaft A, and it is driven continuously when the meter is in operation by chain 4. Cam 6 is rigidly attached to the face of wheel 5 or is integral therewith. Lever 7 is pivotally connected with spider 9, and it has a lateral pin or projection on its swinging end, which engages and is actuated by the recess of cam 6. Rod 8 connects pivotally with lever 7 and with arm 11. Slide 10 has bearings in plate 12 and it provides a fulcrum for arm 11. The arm has a packer or feeler 11^a on its inner end, and the bearing on which it pivots is rigid in the slide to such extent that the fulcrum cannot move vertically without moving the slide. The spider 9 is fixed on casing 1 and it provides a bearing for an end of shaft A. An arm 14 is secured rigidly to the meter or the shaft thereof and carries the clutch-dog 15. (Seen in Figs. 2 and 4.) The dog is adapted to engage the projection 10^a on slide 10, and it has catch 15^b on the side next wheel 5 and pin 15^a on the opposite side. Cam 13 is secured to the casing and it affects

the dog through pin 15^a in such manner that when the catch end of the dog falls toward the shaft and the shaft begins to rotate the position will be permanent until a complete rotation is nearly accomplished. The sprocket-wheel 5 has lateral projections 5^a, as seen in Fig. 2, with which the clutch-dog engages when the slide is raised. The shaft 16 has bearings in the casing above the meter, and to it are rigidly connected arms 17 and 19, one inside and the other outside the casing. Arm 17 carries rake 18 immediately above the meter, and arm 19 carries a weight which presses down on the rake. Stop 20 regulates the descent of arm 19 and it is adjustable on the casing. The meter 21 has a principal compartment 21^a and auxiliary compartments 21^b, 21^c, and 21^d. The inner faces of the casing 24 and 25 conform to the circular heads of the meter, and one is cut away at 26 to permit the auxiliary compartment 21^b to discharge its grain. A ratchet-wheel 22 is fixed on an end of shaft A, as seen in Fig. 3, and backlash-pawl 23 is pivoted on a pin connected with the casing and is adapted to the ratchet-wheel.

In operation grain is supplied to the meter and the cam 6 on the continuously-rotating wheel 5 gives the packer 11^a an oscillating movement by means of a cam 6, lever 7, and rod 8. When the large compartment is filled and the grain heaps above it to a certain extent, the packer will be unable to descend and the slide 10 will be raised, thereby releasing dog 15 and permitting its catch end to fall in clutch with a projection of the wheel. As the meter is carried around by the clutch the pin 15^a will follow the cam-groove and prevent disengagement and the accumulated grain will be received by the auxiliary compartments. As the grain descends in the meter-box the slide 10 descends also, and by the time the rotation is completed the projection 10^a will be in position to arrest the motion of the dog and throw it out of clutch with the wheel.

The combined capacity of the several compartments constitutes a unit of measure—that is to say, the several compartments jointly hold a bushel or other unit of measurement. When it is desired to vary this to compensate for variations in the weight of

grain or for other reasons, the rake 18 is so adjusted by means of stop 20 that the diameter of the meter is practically increased or diminished and the capacity thereof correspondingly varied.

I claim—

1. In a grain-meter, the combination of a meter, a slide holding the meter in position to receive the grain, and a packer-arm pivoted in the slide and adapted to be continuously oscillated, whereby an accumulation of grain will cause the packer-arm to raise the slide and permit the meter to discharge, as set forth.

2. In a grain-meter, the combination of a rotary meter, a slide holding the meter in position to receive the grain, a drive-wheel mounted loosely on the meter-shaft and adapted to be continuously rotated, a packer-arm pivoted in the slide and connected with a cam on the drive-wheel, and a clutch-dog connected with the meter and adapted to engage the drive-wheel when the slide is raised, as set forth.

3. The combination of the rotary meter, the

drive-wheel on the meter-shaft, the cam on the drive-wheel, the packer-arm actuated by the cam on the drive-wheel, the slide acting as a stop for the meter and providing a pivot for the packer-arm, the clutch-dog connected with the meter and adapted to engage the drive-wheel, the cam on the meter-casing, and the pin on the clutch-dog adapted to the cam of the casing, as set forth.

4. A circular meter adapted to make a complete rotation at each operation and having a principal compartment inside chords of the circle of the meter and auxiliary compartments outside such chords, as set forth.

5. The combination, with the rotary meter, of rake 18, the weighted arm 19, and the adjustable stop 20, as set forth.

In testimony whereof I sign my name in the presence of two subscribing witnesses.

CHARLES J. HARTLEY.

Attest:

JAS. MICHL, Jr.,
WALTER C. KEELER.