(Model.)

3 Sheets—Sheet 1.

O. J. DIMMICK.

Grain Register.

No. 233,216. Patented Oct. 12, 1880.

Fig. 1.

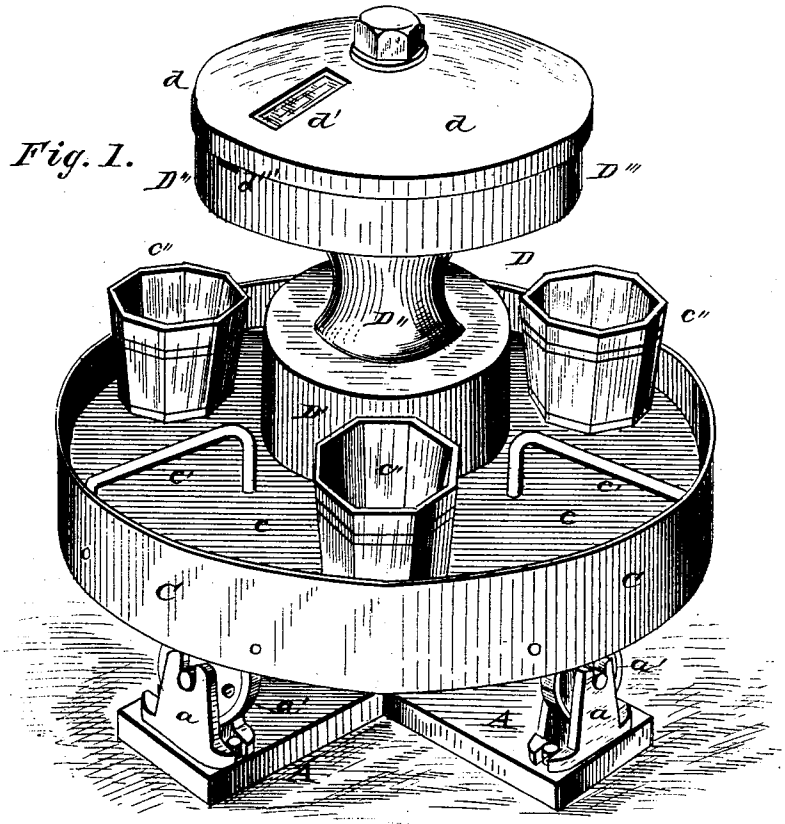


Fig. 3.

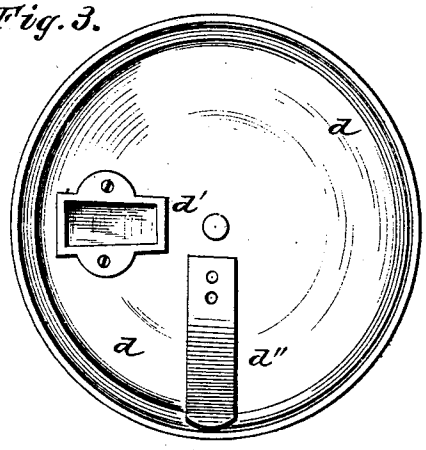
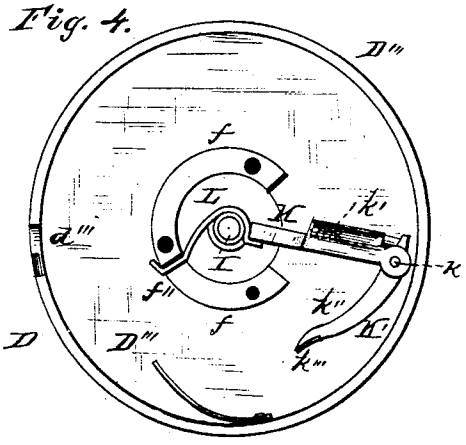


Fig. 4.



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(Model.)

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Grain Register.

No. 233,216. Patented Oct. 12, 1880.

Fig. 5.

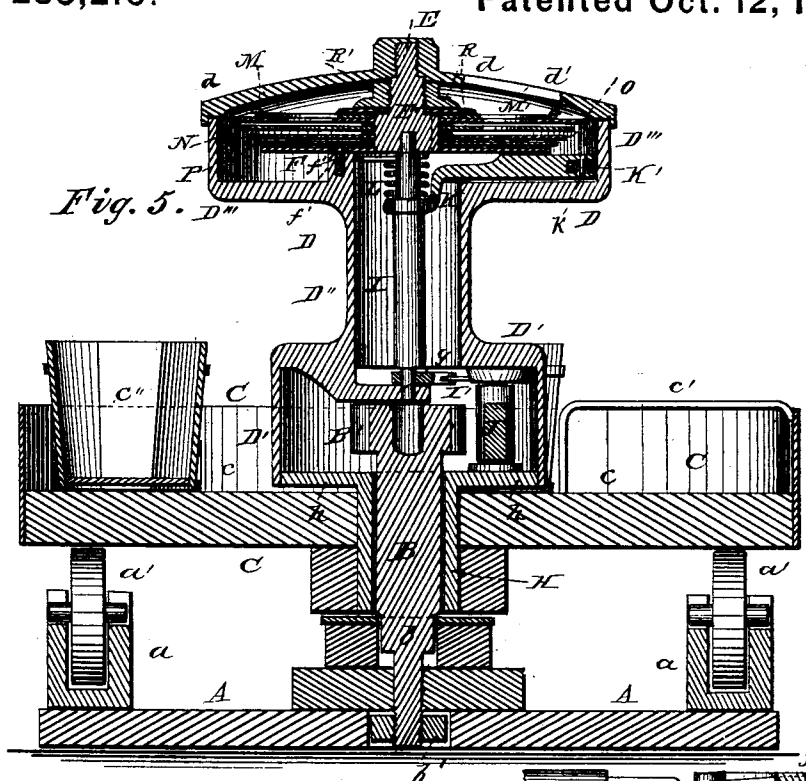


Fig. 2.

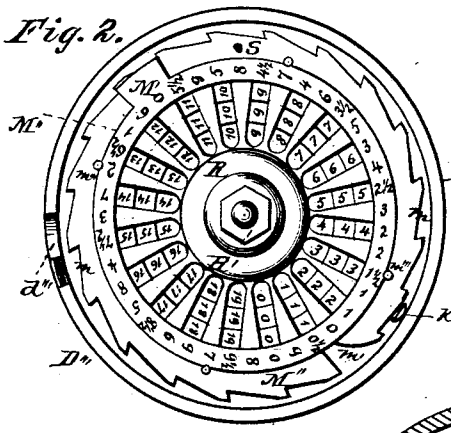


Fig. 6.

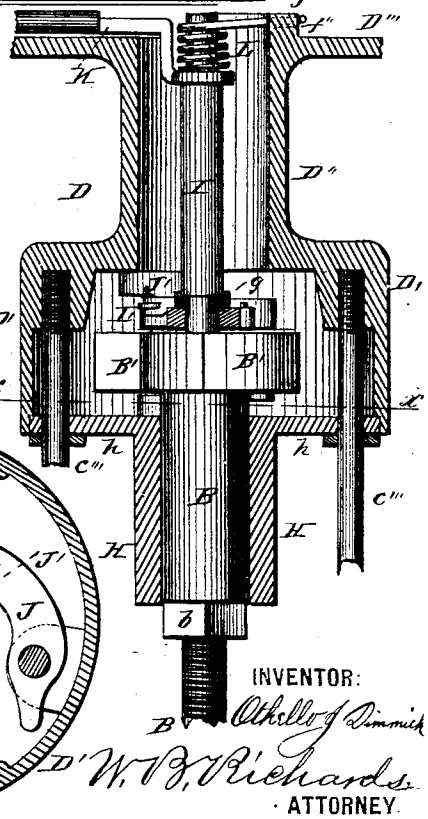
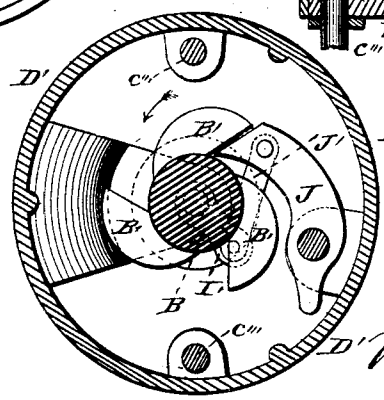


Fig. 7.



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(Model.)

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Fig. 9.

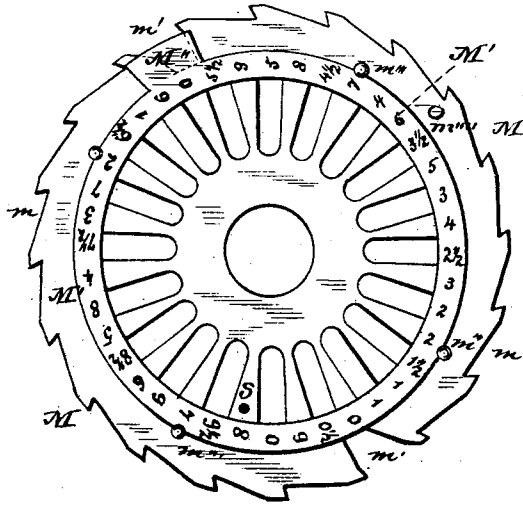


Fig. 11.

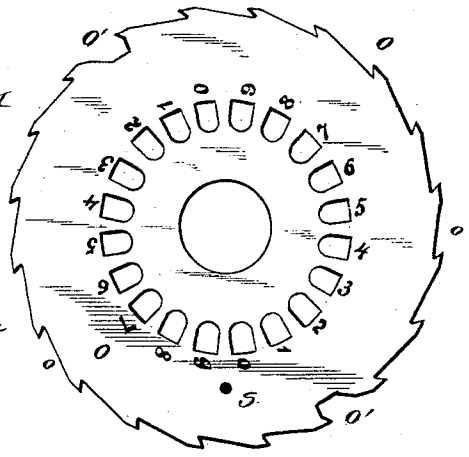


Fig. 10.

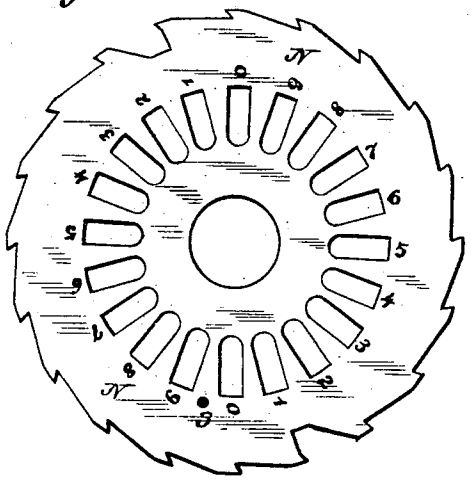


Fig. 12.

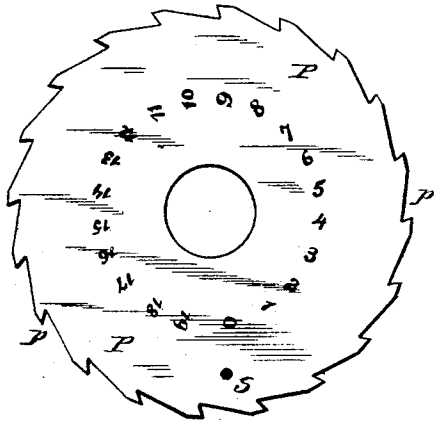


Fig. 8.

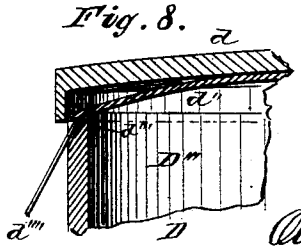
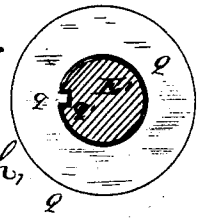


Fig. 13.



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UNITED STATES PATENT OFFICE.

OTHELLO J. DIMMICK, OF FAIRBURY, ILLINOIS.

GRAIN-REGISTER.

SPECIFICATION forming part of Letters Patent No. 233,216, dated October 12, 1880.

Application filed April 9, 1880. (Model.)

To all whom it may concern:

Be it known that I, OTHELLO J. DIMMICK, a citizen of the United States, residing at Fairbury, in the county of Livingston and State of Illinois, have invented certain new and useful Improvements in Grain-Registers; 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 the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

Figure 1 is a perspective of my machine. Fig. 2 is a top plan of the registering device and case with the cap removed. Fig. 3 is a plan of the cap, seen from below. Fig. 4 is a plan of the register-case with the disks and journal-plate removed. Fig. 5 is a vertical section. Fig. 6 is an enlarged vertical section, partly in elevation, of parts below the registering-disks. Fig. 7 is a section in the line *x x* in Fig. 6. Fig. 8 is a detail section, hereinafter referred to. Figs. 9, 10, 11, 12 are plans of the registering-disks separately and enlarged. Fig. 13 is a plan of one of the washers and section of journal E′.

My invention relates to improvements in grain-registering machines in which a rotating measure-carrier operates in conjunction with registering mechanism; and the invention consists in constructions and combinations hereinafter described, and set forth in the claims hereto annexed.

Referring to the drawings by letters and figures, each letter indicating the same part in the different figures, letter A represents a cruciform-shaped base, on which the operating parts are mounted. B is a short shaft projecting upwardly from the central part of the base A, to which it may be preferably fixed by having a square portion, *b*, where it passes through the base A, to prevent rotation of the shaft, and is held by a nut, *b′*, from withdrawal from the base. C is a box, which may be circular, as shown in the drawings, or it may be of any other desirable form. The shaft B passes through the central part of the box C, and is rounded to form a journal, on which the said box may be rotated in a horizontal plane.

The base A has arms *a*, with supports for pulleys *a′*, which act as anti-friction supports, on which the box C is rotated.

The box C is divided into three compartments, *c*, by radial rods *c′*, and each compartment *c* may have a half-bushel or other measuring-vessel, *c″*, seated loosely therein, so that it can be readily removed.

D is a case formed, as shown in the drawings, with an enlarged hollow lower end, D′, a contracted hollow stem, D″, and an upper enlarged cup-shaped end or case, D‴. The lower end of the case D is secured to and above the central part of the box C by bolts *c‴*, so that it will rotate with said box.

The case D‴ has a cap, *d*, with a glass-covered opening, *d′*, through it, and a spring, *d″*, in its lower side. The cap *d* is held in place by a bolt, E, (hereinafter described,) the upper threaded end of which enters a screw-threaded hole in the center of the cap.

When the cap *d* is screwed down close upon the case D‴, the spring *d″* will engage with a recess, *d‴*, in the side of the case D, and thus stop and hold the cap, so that the opening *d′* will be in the proper radial position relatively to the case D‴, for the purposes hereinafter described.

To release the spring *d″* to unscrew the cap *d*, a pin, *d⁗*, may be inserted from below in a groove in the case D‴, to press the spring upward out of the recess *d‴*. (See Fig. 8.)

F is a disk, supported slightly above the bottom of the case D‴ on an arc-shaped flange, *f*, to which it is secured by screws *f′*. The bolt E is fixed to and projects upward from the central part of the disk F, and has its upper end contracted and threaded, as hereinbefore described, and its lower end enlarged to form a journal, E′, on which registering-disks rotate, as hereinafter described.

The upper end of the shaft B extends into the end D′ of registering-case, and carries three cams, B′, each with a radial side or face and a sloping side or face, as shown at Fig. 7.

To preserve the perpendicular position of the shaft B and horizontal position of the cams

B′, a sleeve or thimble bearing, H, is placed through the bottom of the box C, with a broad flange, *h*, on its upper end, which may be securely bolted to the upper side and bottom of the box.

I is a vertical rock-shaft, journaled at its lower end in a lug, *g*, which projects inward from the stem D″, and journaled at its upper end in the central part of the disk F.

J is a vibrating arm, pivoted at one end near the outer side of the case D′ in the same horizontal plane as the cams B′, and so as to come in contact therewith, as hereinafter described.

J′ is a link, hinged at one end to the free end of the arm J, and at its other end to the outer end of an arm, I′, which projects from the lower end of the rock-shaft I.

K is an arm fixed to and projecting radially from near the upper end of the shaft I outward on the bottom and to near the outer side of the case D‴, and has an arm, K′, pivoted at *k* at its outer end with a spring, *k′*, acting on its heel end and tending to force its long end *k″* inward. The long end *k″* is turned upward to form a pawl, *k‴*.

L is a spiral spring encircling the upper end of the shaft I. One end of the spring L is extended outward and held in a groove, *f″*, in the flange *f*, and its other end is turned outward and rests against the inner end of the arm K.

In rotating the box C (and case D, which turns with it) in the direction shown by the arrow at Fig. 7, the sloping side of the cams B′ will force the free end of the arm J outward, and thereby give a partial rotation to the shaft I, which will be resisted by the spring L, so that as the arm J passes the point of each cam B′ the spring L will rotate the shaft I in the opposite direction to that last described, and thus bring the arm J into position for the action of the next cam B′, and in this manner at each rotation of the box C the shaft I is oscillated on its longitudinal axis, and the pawl *k‴* thereby advanced and thrown back three times at each of said rotations. The movements last described are, of course, relatively to the rotary movement of the box C, as the shaft I and arm K have a progressive rotary motion with the box.

M N O P are the registering-disks, each with a central hole, so that it may be seated to rotate on the journal E′. Between each disk a washer, Q, is placed, which has a tongue, *q*, extending into a groove, *q′*, in the journal E′, to secure the washers from rotation, and so that they may prevent the rotation of either disk interfering with the next. On the upper disk a concavo-convex washer, R, is placed, so that by means of a nut, R′, on the bolt E′ the spring-washer R may be pressed downward to regulate and adjust the frictional contact between the disks and washers, and thus provide for the proper freedom of movement of the disks.

The disks M N O P are constructed and provided with series of numbers, as plainly shown at Figs. 9, 10, 11, and 12. The lower disk, P, has one series extending from 0 to 19, and twenty notches, *p*, in its periphery. The disk O, next above P, is larger than P, and has two series of digits, each from 0 to 9, and has twenty notches, *o*, in its periphery, two of which, O′ O′, are deepened. The disk N is notched, and has series of digits similar to disk O, over which it is placed, and is larger than disk O. The disk M is larger than N, is placed over it, and has twenty notches, *m*, in its periphery, two of which, *m′*, are deepened. The disks are cut away, as shown, so that the figures or digits on each can be seen.

M′ is an annular plate or ring, which may be adjusted on the disk M and held by lugs *m‴*, as shown at Fig. 9, and with a radial projection, M″, resting over the deep part of one of the deep notches, *m′*; or the ring M′ may be adjusted in another position on the disk, and with the projection M″ resting against a lug, *m⁗*, so as to leave both deep notches, *m′*, open. The ring M′ has digits, as shown at Fig. 9, which, commencing at 0 on the side opposite the projection M″, and reading alternate digits, reads thus: 1, 2, 3, 4, 5, 6, 7, 8, 9, and then repeat; and reading the other alternate digits we find series thus: ½, 1, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 5½, 6, 6½, 7, 7½, 8, 8½, 9, 9½, extending entirely around the ring. Each disk M N O P has a hole, S, through which a pin may be inserted to bring the four zeros coincident for starting.

In rotating the box C and case D, the disks M N O P are also rotated, and the spring-pawl *k‴* is so located that at every movement it makes it engages with one of the notches in the upper disk, M, and retards the movement thereof, or moves it backward the distance of one notch or one digit, until the deep notch in the disk M is reached. The spring-pawl then enters it and a notch in the disk N, and moves the disk N the space of one notch, and so on in regard to moving the disks O and P.

With the ring M′ adjusted as shown in the drawings, the disk M will perform a complete rotation before moving the disk N, and the series of digits ½, 1, 1½, 2, 2½, and so on, be brought successively beneath the opening *d′* in the case-cover, thus registering one-half bushels, if half-bushel measures *c″* are used, and the device placed so that at each one-third of a rotation of the box C one of the half-bushel measures *c″* is brought beneath a spout delivering the grain to be measured, and another and filled measure removed, emptied, and replaced in the ordinary manner.

For registering bushels, bushel-measures may be used, and the ring M′ adjusted, as hereinbefore described, so as to leave both of its deep notches open, and to bring the series 1, 2, 3, and so on, to register beneath the opening *d′*, the disk M then indicating units, the disk N tens, the disk O hundreds, and the disk

P thousands. The disks N O P, in fact, under all adjustments of the ring M′, always register, respectively, tens, hundreds, and thousands.

When desired to set the disks for commencing to register at the lowest number, the top cap may be removed, as hereinbefore described, and the nut over the disks then loosened, so that they can be turned easily to insert the pin through the hole S.

I am aware that a series of rotating registering-disks mounted on a single shaft, and a pawl adapted to move said disks separately and simultaneously, and also a revolving base and revolving registering apparatus, are common in grain-registers, and such I do not wish to be understood as claiming, broadly, as of my invention.

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

1. In combination with the fixed cams B′ and vibrating arm J, the shaft I, adapted to receive a rocking or oscillating motion from said cams B′ and arm J, and to impart movement to the registering-disks by means of an arm, K, and pawl *k*″, substantially as and for the purpose specified.

2. The combination, with fixed cams B′, of vibrating arm J, link J′, and arm I′, adapted to impart an oscillating motion to the shaft I, substantially as described, and for the purpose specified.

3. The combination, with fixed cams B′, of vibrating arm J, link J′, arm I′, case D, and spring L, adapted to give an oscillating motion to the rock-shaft I by the rotary motion of the case D, substantially as and for the purpose specified.

4. In combination with fixed cams B′, arms J I′, link J′, and shaft I, the arm K, provided with a spring-arm and pawl at its outer end, and adapted to impart movement to the registering-disks, substantially as and for the purpose specified.

5. The combination, with the rotating box C and case D, connected and rotating therewith, a series of rotating registering-disks mounted upon the same shaft, and a pawl adapted to move said disks separately and simultaneously, of actuating mechanism, substantially as described, arranged in said case and operated through the rotating movement thereof, substantially as specified.

6. The rock-shaft I, arm K, connected to said shaft, and having spring-arm and pawl, disk F, having flange *f*′, provided with a groove, *f*″, and spiral spring L, encircling the shaft I, having one end engaging the arm K and its other end engaging the grooved flange *f* of the disk F, in combination with a series of registering-disks adapted to be moved separately and simultaneously through the medium of the pawl connected to arm K, substantially in the manner herein shown and described.

7. In combination with the disk M, the adjustable ring M′, having a series of whole numbers, and a series of mixed numbers alternating therewith, substantially as and for the purpose specified.

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

OTHELLO J. DIMMICK.

Witnesses:
THOMAS F. BAKER,
NATHANIEL BURGER.