(No Model.) 2 Sheets—Sheet 1.

W. N. DURANT.

PACKAGE REGISTER.

No. 379,106. Patented Mar. 6, 1888.

FIG. 1.

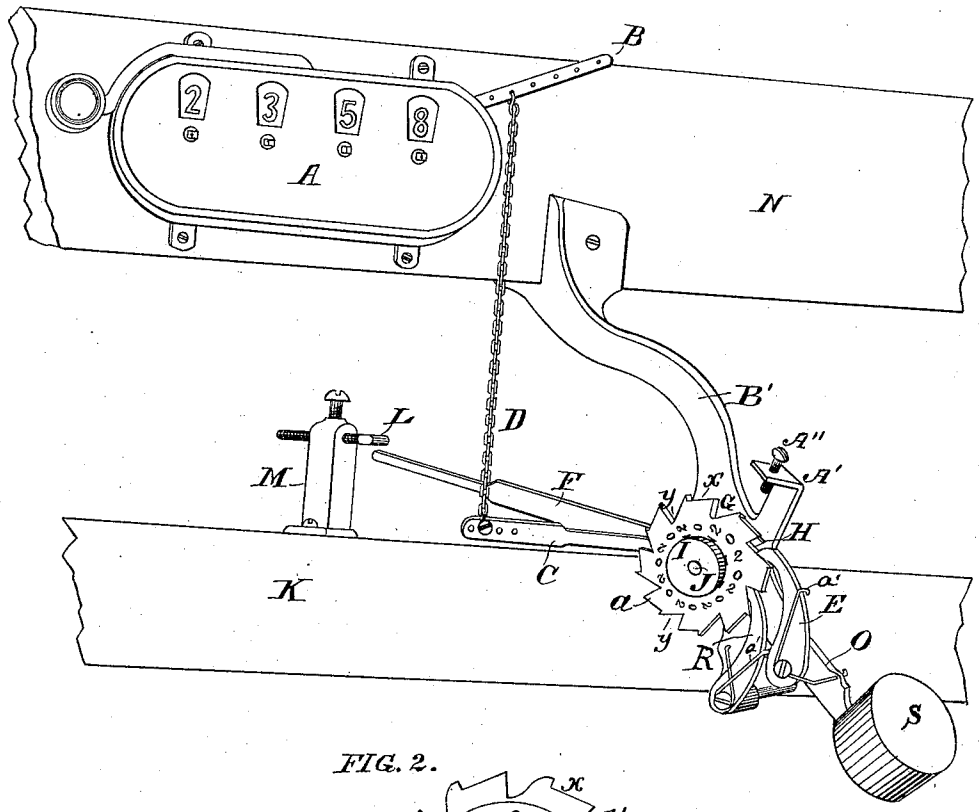


FIG. 2.

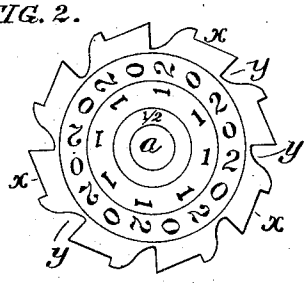


FIG. 5.

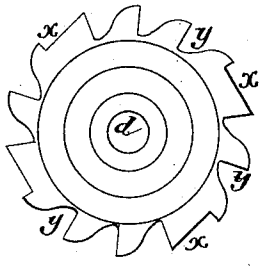


FIG. 3.

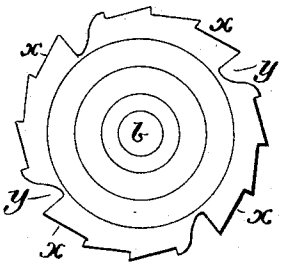
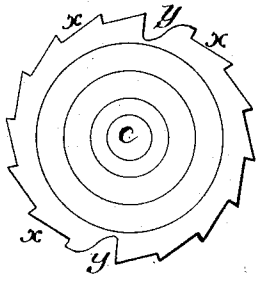


FIG. 4.



Witnesses.

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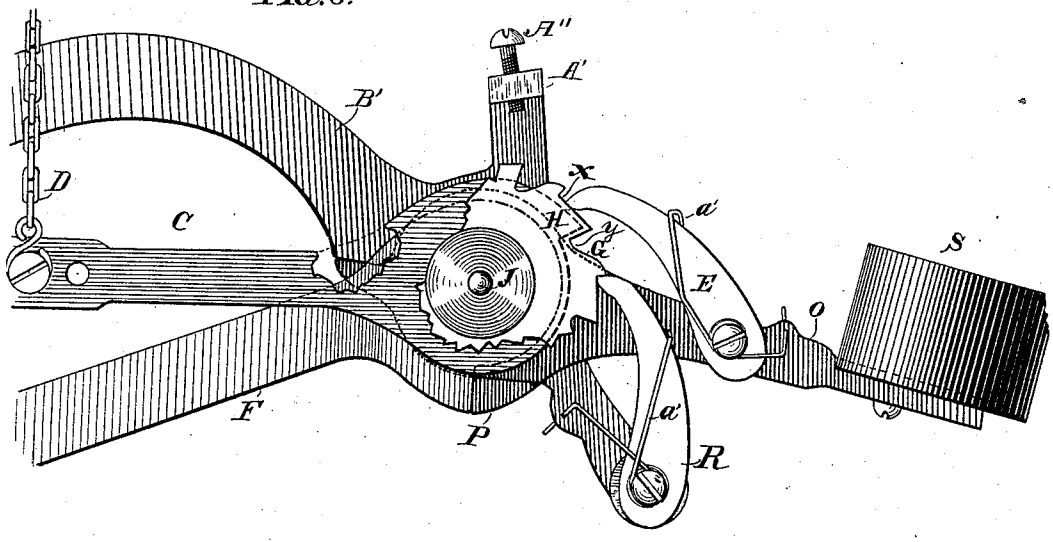
(No Model.) 2 Sheets—Sheet 2.

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PACKAGE REGISTER.

No. 379,106. Patented Mar. 6, 1888.

FIG. 6.



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UNITED STATES PATENT OFFICE.

WALTER N. DURANT, OF MILWAUKEE, WISCONSIN.

PACKAGE-REGISTER.

SPECIFICATION forming part of Letters Patent No. 379,106, dated March 6, 1888.

Application filed February 15, 1887. Serial No. 227,666. (No model.)

To all whom it may concern:

Be it known that I, WALTER N. DURANT, of Milwaukee, in the county of Milwaukee and State of Wisconsin, have invented new and useful Improvements in Tallies; and I do hereby declare the following to be a full, clear, and exact description of said invention, reference being had to the accompanying drawings, and to the letters or figures of reference marked thereon, which form a part of this specification.

The object of my invention is to provide a counting-machine or tally by which the total sum of any number of parts or fractions of a unit may be registered in whole numbers, the same being especially adapted to keep a record of the quantity of flour handled in a mill—*e. g.*, when desirous to keep a record in barrels of the total quantity of flour packed when such quantity is put up in packages of various sizes, quarters, halves, eighths of a barrel, &c.

The construction of my improvement is explained by reference to the accompanying drawings, in which—

Figure 1 represents a perspective view thereof. Figs. 2, 3, 4, and 5 are details representing some of the ratchet-wheels used in tallying fractions, a special wheel being provided for each different denomination of fractions tallied. Fig. 6 represents a front view of the operating-levers of the tally.

Like parts are represented by the same reference-letters throughout the several views.

A represents a tally of the ordinary construction, adapted to register units or whole numbers only.

The figures of the tally as shown represent the number 2,358.

With each downward movement of the lever B the tally registers one additional unit up to 9,999.

My present invention does not pertain to the internal construction of the tally A, but simply to the device for operating the lever B thereof, and the description and drawings of the interior of the tally are therefore omitted as superfluous.

As every downward stroke of the lever B tallies one, it becomes necessary in registering the sum of a number of parts or fractions to permit the lever B to remain at rest during a part of the movement of the packer or other machine, which moves with each package packed. It follows that when quarter-barrels are being packed the lever B is moved only with every fourth movement of the packer, and when eighths are being packed it moves only once with each eighth movement of the packer, &c. To accomplish this end, a number of ratchet-wheels, *a*, *b*, *c*, and *d*, are provided, one for each denomination of fraction packed, which ratchet-wheels carry the operating-pawl over the operating-lever C without communicating motion to such lever until the sum of the number of fractions packed make up a whole number, when the operating-pawl E is permitted to drop into one of the deep notches G of the escapement-wheel, whereby it is brought into contact with an upward-projecting lug or tooth, H, formed on the operating-lever C, and shown in dotted lines in Fig. 6, whereby the free end of said lever C is thrown downward and motion is communicated therefrom, through the chain D and lever B, to the tally, and a whole number is thereby tallied.

In the ratchet-wheel *a* (shown also in Fig. 2) each alternate notch is made deep, whereby the pawl E is permitted to drop into contact with the operating-lever C with every second package packed, and consequently such wheel is adapted to tallying one-half-barrel packages only. When packing one-quarter-barrel packages, the ratchet-wheel *a* is removed and the wheel *b* is substituted, in which wheel each fourth notch is a deep one, thus permitting each fourth movement of the packer only to be communicated to and registered by the tally. When one-eighth-barrel packages are packed, the wheel *c* is used, in which wheel every eighth notch only is a deep one. When the flour is packed in packages containing five-sevenths of a barrel, the ratchet *d* is used, in which ratchet five out of every seven movements of the packer are communicated to the tally. Thus it is obvious that by changing the ratchet-wheels, as indicated, the sum of any denomination of fractions may be registered in whole numbers. The series of figures arranged in the annular circle upon the ratchet-wheels indicate the number and denomination of the fractions tallied by such wheel.

I is a hand-nut by which the ratchet-wheel and the several leaves are retained upon the pin J.

K represents a movable part of the packer or other machine, the movements of which are registered by the tally.

L is an arm or bracket, which is adjustably connected to the frame K, by the standard M or other equivalent device, in such a position as to be brought in contact with the free end of the lever F.

The tally is affixed rigidly to a stationary support, N, as shown, in such a manner that the movement of the packer will be communicated to it. The ratchets and levers, by which motion is communicated from the packer through the connecting-chain to the tally, are supported at a convenient distance from the tally and held in place by the supporting arm or bracket B′, which arm is preferably formed in one piece of cast metal, which is rigidly affixed at its upper end to the tally-support N.

The ratchet-wheel *a*, the levers C and F, and the lever O are all supported upon the same pivotal bolt J. As the free end of the lever F is thrown upward by the upward movement of the packer, it turns upon the pin or pivot J without communicating any motion to the other parts. When said arm L has moved up a certain distance, the end of the lever F escapes past and drops beneath it. With the downward movement of the arm L it is brought in contact with the end of the lever F again and inclines said lever downward, when by such downward movement the laterally-projecting lug P (which is cast on said lever and forms a part thereof) is brought in contact with the under side of the lever O and inclines said lever upward, as shown in Fig. 6, whereby the pawl E, which is pivoted to said lever O, is thrown forward and in contact with the teeth of and moves the ratchet *a* forward one notch. Thus with each downward movement of the lever F said pawl moves said wheel forward a notch at a time, and as said pawl is drawn back over the teeth of the wheel *a* said wheel is prevented from turning backward by the pawl R, as shown. The lever O is moved downward as the lever F ascends by the gravity of the weight S. When the pawl E is in one of the shallow notches, *x*, it is carried thereby as it moves upward over the lug or tooth H of the lever C; but when it reaches one of the deep notches, *y*, it drops into contact with the notch H of the lever C, and thereby forces said lever C downward, as mentioned, whereby the tally is operated and a whole package registered. The pawls E and R are held in contact with the ratchet-wheel by the springs *a′ a′*. A′ is a stop cast in one piece with the supporting-arm B′, and is provided with a set-screw, A, which serves to arrest the upward movement of the lever O and pawl E at the extremity of their upward movement.

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

1. The device for tallying the sum of a number of fractions in whole numbers, consisting in the combination, with the operating mechanism of a tally adapted to register whole numbers, of a lever or arm adapted to be moved by contact with a packer or other machine, the operations of which are registered, an operating-pawl adapted to communicate the movements of said lever through intermediate mechanism to the tally, and a ratchet-wheel provided on its periphery with a series of deep and shallow notches, the relative number of deep and shallow notches varying according to the denomination of the fraction to be tallied, substantially as and for the purpose specified.

2. In a device for registering the sum of a number of fractions in whole numbers, the combination of the radial arms F, O, and C, turning upon a common pivotal support, the operating-pawl E, pivoted to said lever O, a ratchet-wheel having shallow notches *x*, adapted to carry the end of said pawl E over said lever C without contact therewith as said wheel is moved forward by said pawl, and the deeper notches *y*, adapted to permit said pawl E to be brought into contact with and move said lever C with its forward movement, substantially as and for the purpose set forth.

3. In devices for tallying fractions, the combination, with the arm B′ or other suitable support, of the motion-communicating arm F, moved by contact with the arm L, the arm O, actuated in one direction by said arm F and in the opposite direction by the gravity of a weight, the arm C, having its free end connected with the actuating mechanism of the tally or register and its opposite end supported upon the same pivotal pins J, with levers O and F, a ratchet-wheel turning on said pin J, having notches *x* and *y*, of varying depths, adapted, respectively, one to prevent and the other to permit contact of the pawl E with the lever C, the pawl E, adapted to rotate the ratchet-wheels *a*, *b*, *c*, or *d*, and to communicate the movement from said lever O to the operating-lever C, the pawl R, adapted to prevent the ratchet-wheels from turning backward, and the pawl-retaining springs *a′*, all substantially as and for the purpose specified.

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

WALTER N. DURANT.

Witnesses:
JAS. B. ERWIN,
C. T. BENEDICT.