(No Model.)

J. C. RAND & E. THOMPSON.

COUNTING ATTACHMENT FOR THRASHERS.

No. 375,507. Patented Dec. 27, 1887.

Fig. 1.

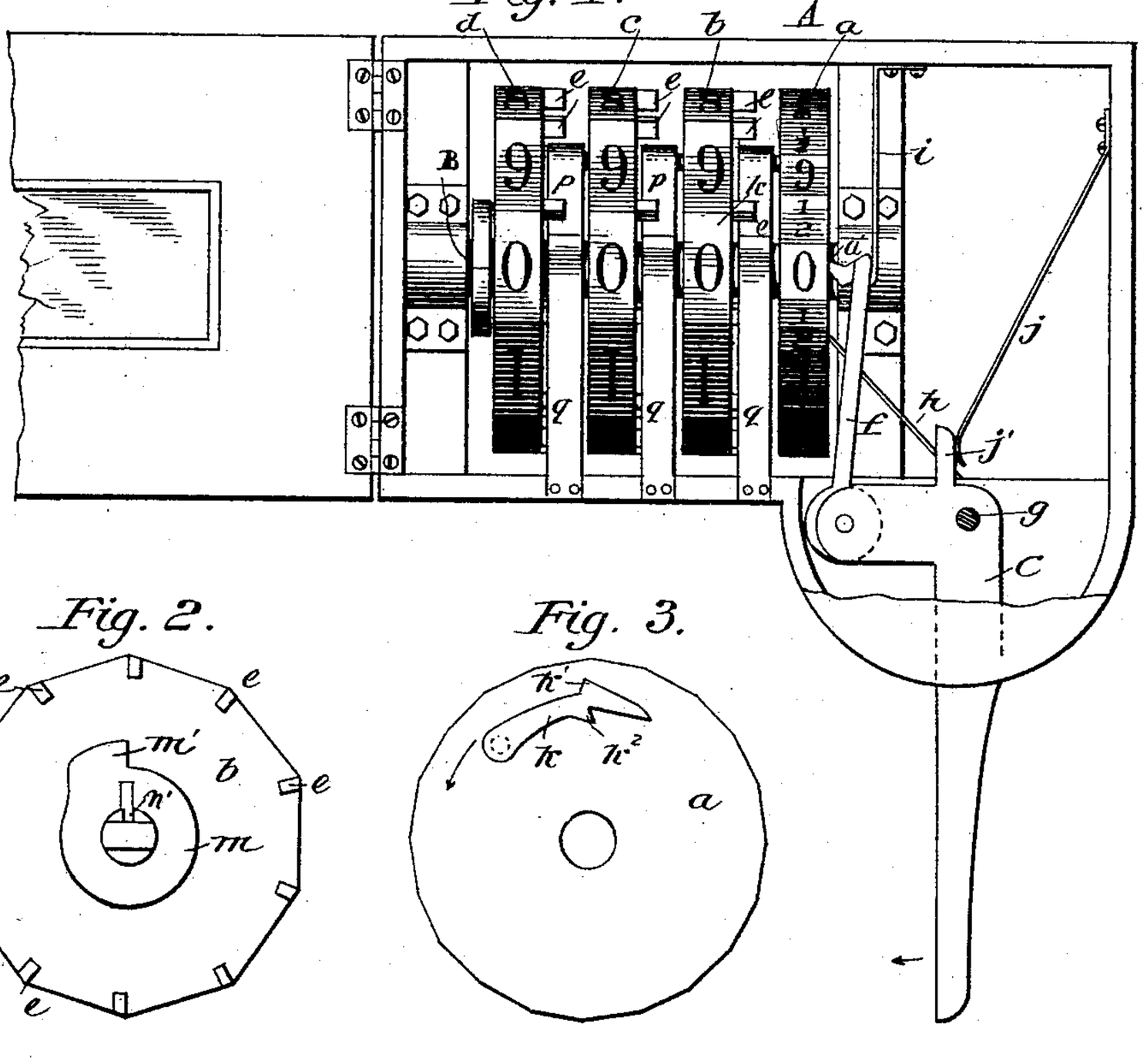


Fig. 2.

Fig. 3.

Fig. 4.

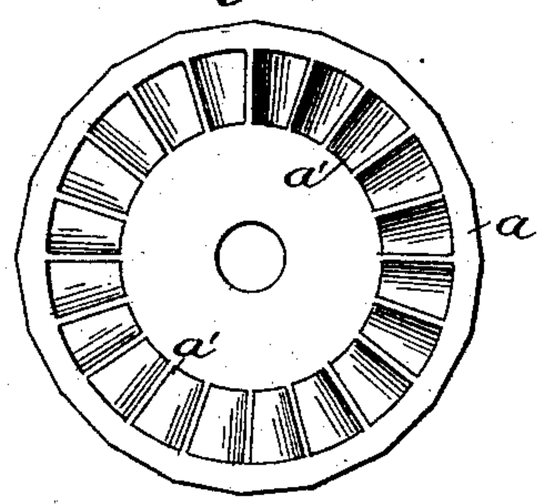


Fig. 5.

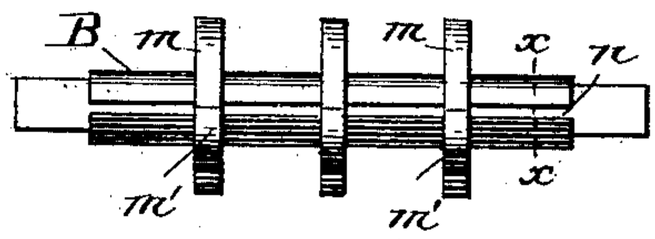
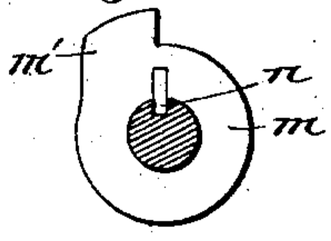


Fig. 6.



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JEFFERSON C. RAND AND EDWIN THOMPSON, OF MAYNARD, IOWA.

COUNTING ATTACHMENT FOR THRASHERS.

SPECIFICATION forming part of Letters Patent No. 375,507, dated December 27, 1887.

Application filed May 11, 1887. Serial No. 237,847. (No model.)

To all whom it may concern:

Be it known that we, JEFFERSON C. RAND and EDWIN THOMPSON, of Maynard, in the county of Fayette and State of Iowa, have invented a new and Improved Counting-Machine, of which the following is a full, clear, and exact description.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a broken plan view of our new and improved register, showing the cover tipped back and partly broken away. Fig. 2 is a side elevation of one of the numbered disks, showing the shaft on which it is placed and showing the fixed cam on the shaft. Fig. 3 is a side elevation of one of the disks having whole and half numbers marked upon it. Fig. 4 is a similar view of the opposite side of the same disk. Fig. 5 is a plan view of the shaft, and Fig. 6 is a sectional elevation on the line *x x* of Fig. 5.

The object of this invention is to provide a practical adding or counting machine to be used principally in connection with thrashing-machines for tallying the measures of grain; and the invention consists of the construction, arrangement, and combination of parts, all as hereinafter described and claimed.

In a suitable frame or casing, A, is held the shaft B, on which are placed loosely the disks *a b c d*, which indicate, respectively, units, tens, hundreds, and thousands. The disk *a* is numbered upon its periphery from 0 to 9, and between the numbers appear one-half marks. The disks *b c d* are each numbered from 0 to 9, so that the limit of the register in this instance is 9999½.

It is obvious that by adding more disks the numbering capacity may be indefinitely increased. The units-disk *a* is formed at its outer surface with teeth or notches *a'*, with which a reciprocating pawl, *f*, successively engages for turning the said disk. The pawl *f* is reciprocated in this instance by the bell-crank C, pivoted on the pin *g* in the frame A. The disk *a* is prevented from turning back by the spring-pawl *h*, which engages the teeth *a'*. The pawl *f* is held in contact with the said teeth *a'* by the spring *i*, and the lever C is held normally in the position shown in Fig. 1 by the spring *j*, which presses against the projection *j'* of the said lever, as shown clearly in Fig. 1.

Upon the inner surface of the disk *a* is pivoted loosely the pawl *k*, formed with a notch or projection, *k'*, upon its outer surface to engage with projections *e* of disk *b* for turning the same. The projection *k'* is slanted outward and away from the pivot of the pawl, so that it will pass the projections *e* without moving the disk *b*, except when said pawl is held by some external means in contact with one of the projections *e*. For this purpose we form the pawl with the projection k^2 upon its inner surface, and provide the shaft B with a cam, *m*, over which the pawl *k* must pass, and which holds the projection *k'* in engagement with one of the pins *e* until the inner projection, k^2, passes the toe *m'* of the cam, which is sufficient to cause the pawl to move the disk *b* one-tenth of a revolution, the space occupied by each of the numbers on its periphery.

The disks *b c d* are duplicates of each other, each being provided upon one side with ten pins or projections, *e*, and each provided upon the opposite side with a pawl, *p*, similar to the pawl *k* of disk *a*, so that the disk *b* will turn intermittently the disk *c* and the latter turn intermittently the disk *d*. The disk *d* will not be provided with a pawl unless other disks are used. Between the disks *b c* is placed upon the shaft B a cam precisely similar to the cam *m* for causing the pawl *p* to engage with the pins *e* of the disks *c* and a similar cam is placed on said shaft between the disks *c d* to in like manner cause the pawl of disk *c* to turn the disk *d*. The disks *b c d* are prevented from turning, except at the proper time, by the plate-springs *q*, which bear upon the pins *e* of the said disks.

In operation the lever C is to be moved at every count in the direction indicated by the arrow in Fig. 1, and released, whereupon the spring *j* will return the said lever and the pawl *f* to the position shown in Fig. 1, which will turn the disk *a* one-twentieth of a complete revolution. The disk *a* standing with "naught" uppermost to be read, this first movement will indicate one-half. The next movement will indicate one, the next one and one-half, the next two, and so on up to nine

and one-half. At this time the pawl *k* will be held in engagement with one of the pins *e* of the disk *b* by the cam *m*, so that the next two movements of the lever C will cause the disk *b* to move with the disk *a*, bringing the figure 1 of the former disk uppermost or to "reading" position with the naught of the disk *a*, thus indicating 10. The disk *b* will now be the "tens" disk, and the figure 9 thereon will be brought uppermost, together with one one-half mark of the disk *a* just in front of the naught when nine actuations of the tens-disk have taken place. At this time the pawl *p* of the disk *b* will be held in engagement with one of the pins *e* of the disk *c*, so that the disks *c b* will move with the units-disks *a*, bringing the "1" of the disk *c* into reading position at the same time that the naughts of the "tens" and "units" disks are uppermost, thus indicating one hundred. The units-disks will make one revolution to each movement of the tens-disk, and the latter will make a complete revolution to each movement of the thousands-disk *d*, which latter will derive its motion from the disk *c* as it receives its motion from the disk *b*. In this manner the device will count accurately from one-half to nine thousand nine hundred and and ninety-nine and one-half, and by adding more disks will add to any number as high as desired.

The shaft B is grooved or slotted, as shown at *n*, and the cams *m* are each provided with a key, *n'*, to fit in said groove or slot, as shown clearly in Fig. 6, to lock the cams in place upon the said shaft between the numbering-disks.

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

1. In a counting-machine, the shaft B, having the cams *m* secured thereon, in combination with the numbering-disks placed loosely upen the shaft, the pawls *k*, pivoted to the sides of the disks, and the projections *e*, secured to the sides of the disk adjacent to the pawls *k*, substantially as and for the purposes set forth.

2. The disk *a*, provided at one side with a pawl, *k*, formed with projections *k' k²*, and the disk *b*, provided with the pins *e*, in combination with the shaft B, passed through the said disks and provided with a cam for holding the pawl in contact with the pins *e*, substantially as described.

3. In a counting-machine, the shaft B, passed through the numbered disks and formed with a slot, *n*, and the cams *m*, formed with the tongues *n'*, to fit in the slot *n*, in combination with the units-disk *a*, pawl *k*, and the tens-disk *b*, and pins *e*, substantially as described.

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