C. F. BALDWIN.

COUNTING MECHANISM.

APPLICATION FILED NOV. 22, 1920.

1,414,685.

Patented May 2, 1922.

2 SHEETS—SHEET 1.

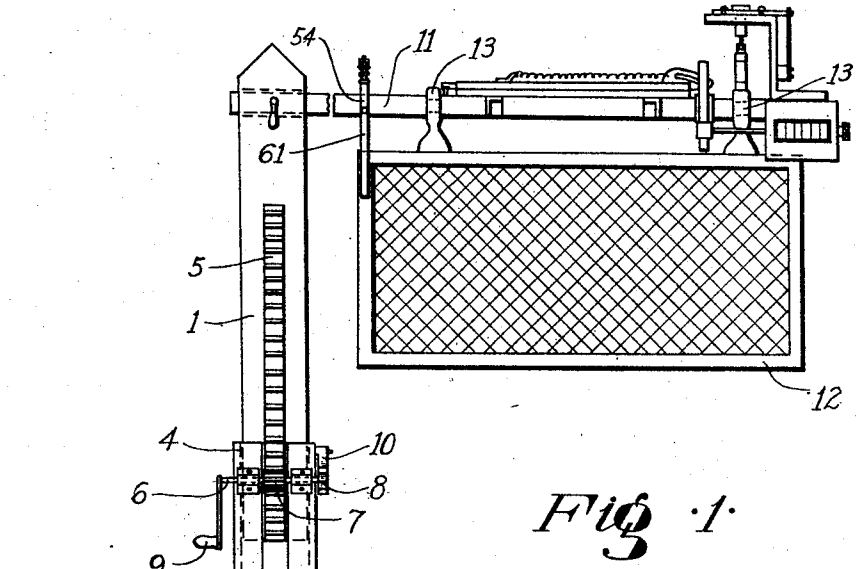


Fig. 1.

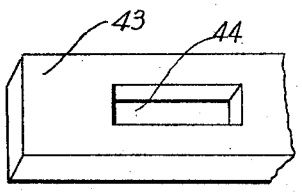


Fig. 7.

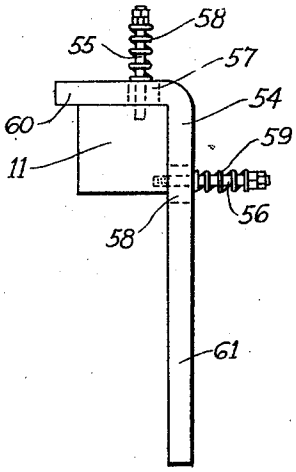


Fig. 2.

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2 SHEETS—SHEET 2.

Fig. 3.

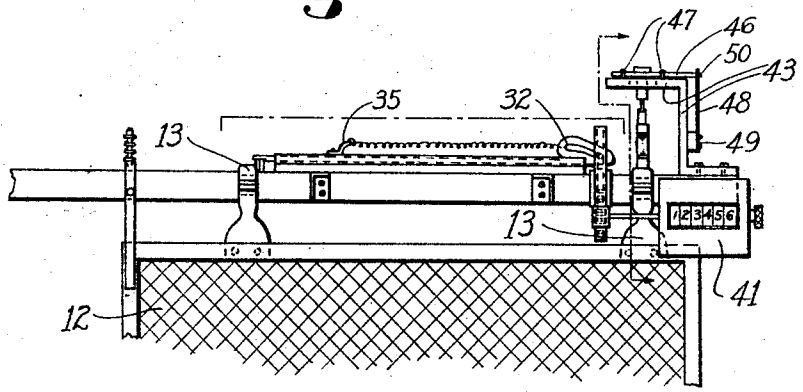
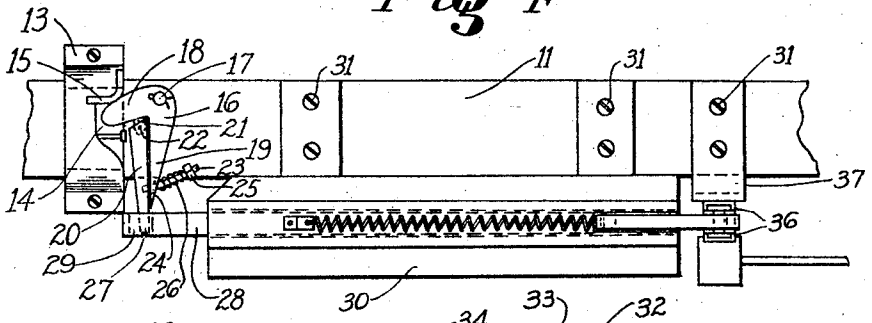


Fig. 4.



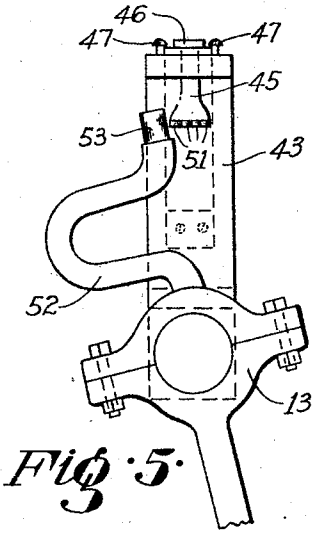


Fig. 5.

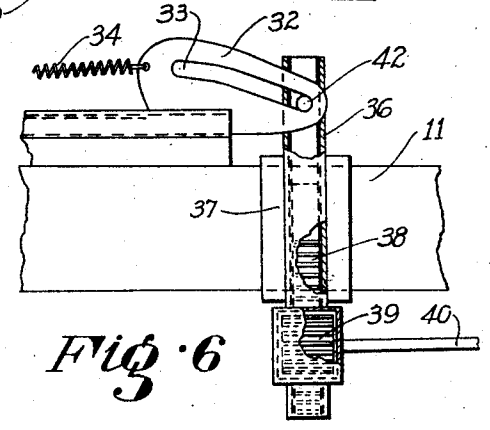


Fig. 6.

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UNITED STATES PATENT OFFICE.

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COUNTING MECHANISM.

1,414,685. Specification of Letters Patent. Patented May 2, 1922.

Application filed November 22, 1920. Serial No. 425,886.

To all whom it may concern:

Be it known that I, CREIGHTON F. BALDWIN, a citizen of the United States, residing in the city of St. Louis and State of Missouri, have invented new and useful Improvements in Counting Mechanisms, of which the following is a specification, reference being had to the accompanying drawings.

This invention pertains to counting mechanisms for use in automatically registering the number of articles, such as furs or the like, as same are handled by the operator.

The object is to provide a relatively simple and efficient device of this kind, whereby the count will be automatically taken care of and the operator relieved of the need of mentally enumerating the articles.

Another object is to provide this mechanism supported on a pedestal in a form which may be readily adjusted adjacent any ordinary table, the latter being used as a receptacle for the furs or other articles to be counted.

In the drawings:

Figure 1 is a frontal elevation;

Figure 2 is a detail of the gate stop;

Figure 3 is an enlarged frontal view of the counter actuating mechanism, showing also a section of the swinging gate hung therefrom;

Figure 4 is a top view of the counter actuating mechanism;

Figure 5 is a detail of the escapement guard and blade;

Figure 6 is a detail of the immediate counter actuating mechanism, partly in section.

Figure 7 is a detail of the upper arm of the escapement stop supporting arbor.

In constructing the invention, I provide a suitable post 1, adjustably mounted upon a weighted pedestal 2 having an inwardly extended arm 3 to admit the support being moved up close to any ordinary table at one end. The post 1 is slidingly telescoped into the pedestal 2 as shown at 4, the pedestal being chambered out longitudinally to admit the post; and a strap rack 5 is mounted on one face of the post 1, while across the corresponding face of the pedestal is journaled a shaft 6. Upon the medial part of the shaft 6 is rigidly mounted a pinion gear 7 which is set through the face of the pedestal 2 and into mesh with the rack 5. At the inner end of the shaft 6 is rigidly mounted a ratchet wheel 8, and at the outer end a crank 9; and a pawl 10 pivoted to the adjacent face of the pedestal acts to prevent the reverse rotation of the pinion 7. Thus the post 1 and attached parts may be readily raised or lowered to adapt the device to tables of varying heights.

Transversely at the top of the post 1 is mounted a rod 11, as a support for the gate and attached counting mechanism. The gate 12 may be of any desired form, and is pivotally suspended from the rod 11 by means of the encircling rings 13 so that the gate may oscillate to and fro over the table below. The back ring 13 as shown in Figure 4 has a portion of its periphery cut away so as to leave a cut out 14 with a shoulder 15. Upon the rod 11 adjacent this cut out 14 is pivoted a two pointed cam 16, upon the pivot pin 17. One leg 18 of this cam extends into the cut out 14, and so that the shoulder 15 will impinge thereon as the gate 12 swings back and forth. The other leg 19 of the cam extends forwardly and clear of the cut out 14. This leg is pointed at its forward end and upon its inner face adjacent the cut out 14, is hinged a compensating finger 20, by means of a horizontal fin 21 extended from the angle formed by the legs 18 and 19 into the rear end of the finger 20 and there secured by a pin 22. A pin 23 is rigidly joined to the outer vertical face of the finger 20 and passes slidingly through a hole 24 cut through the outer point of the leg 19. A head 25 is formed on the free end of the pin 23 and a coil spring 26 is positioned over the pin and braced between the head 25 and the leg 19. The outer end 27 of the finger 20 extends beyond the outer point of the leg 19, and loosely engages the end of the sliding shaft 28 by means of a mortise 29 cut in said end, or otherwise. The shaft 28 is slidingly mounted on a bracket 30 extended forwardly from the top of the rod 11 and fastened thereto with screws 21. At the opposite end of the shaft 28 is fixedly joined a guide plate 32 through which is cut an inclined guide slot 33. A retractile spring 34 extended between the plate 32 and a brace 35 on the bracket 30 serves to normally hold the shaft 28 over toward the cam 16. Upon the outer end of the rod 11, adjacent the guide plate 32, is mounted a rack guide 36, supported by the bracket 37 which is secured by screws 31 to the rod 11. Within this rack guide is vertically and slidingly mounted the stub rack 38, its lower end in mesh with the pinion 39

at the end of the counter shaft 40 and thus controlling the counter 41 which is of any usual or desired kind and is likewise bracketed at the outer end of the rod 11. From the upper end of the stub rack 38 is extended a stud 42 into sliding engagement with the guide slot 33. The adjustment is such that each time the inclined guide slot 33 travels outwardly, the stud 42 and attached rack 38 are raised just enough to rotate the pinion 39 sufficiently to register the count of one unit upon the counter 41.

Bracketed also at the outer end of the rod 11 is an arbor 43, the upper horizontal arm of which is slotted longitudinally as shown at 44 in Figure 7, and depending through this slot is a thin escapement stop 45 mounted in a sliding guide 46. The guide 46 is held slidingly in place by the screw heads 47, and a stiff spring 48 is attached at 49 to the vertical leg of the arbor and at 50 to the end of the guide 46, and thus serves to normally hold the stop 45 in central position. The inner vertical edge of the stop 45 is provided with a number of backwardly directed teeth 51.

Mounted upon the outer ring 13 immediately below the stop 45 is the escapement guard arm 52, provided with a blade 53. The stop 45 and blade 53 are disposed at such angles relative to each other that as the gate 12 swings forwardly toward the table the blade 53 will move backwardly over the teeth 51, and on the return swing of the gate the inclined forward edge of the blade 53 will impinge the opposite or outer face of the stop 45. Thus on the full swing of the gate 12 back and forth the blade 53 will pass forward and back of the teeth 51 on the backward movement of the gate, and backward over the points of the teeth 51 on the forward movement of the gate. It will be noted that the backward movement of the gate is caused by the operator passing furs or other articles to be counted under the gate, and should the operator fail to move the gate fully backward, sufficient to register upon the counter 41, then the blade 53 will not clear the teeth 51 but will catch therein and thus warn the operator of his mistake. An angular gate stop 54 is rockingly mounted at the inner end of the rod 11, by means of two pins 55 and 56 extended through slots 57 and 58 cut through the arms 60 and 61 of the stop and set into the rod 11. Springs 58 and 59 are mounted over these pins. The lower arm 61 depends forwardly of the gate and prevents same from swinging too far forward.

In operation, the furs or other articles to be counted are passed through and under the gate one at a time. As the gate swings outward or backward, the shoulder 15 forces the leg 18 of the cam 16 forwardly, thus causing the outer end 27 of the finger 20 to rock against the end of the sliding shaft 28, the guide plate 32 to move outwardly, the stud 42 to move up the slot 33, and the rack 38 to rotate the pinion 39 so as to register upon the counter 41. As above stated, the escapement guard mechanism described prevents any miscounts by compelling the operator to move the gate to its full swing at each count.

The purpose of the spring pressed compensating finger 20 is to allow the gate 12 to swing fully backward without corresponding excessive lateral movement in the shaft 28, as the finger 20 will spread apart from the leg 19 of the cam and thus reduce the action against the end of the shaft 28.

While I have herein described a certain specific method of constructing and assembling the elements of my invention, it is understood same may be varied in minor details, not departing from the spirit of my invention as defined in the appended claims.

What I claim to be new and patentable is:

1. In a counting mechanism embodying a swinging gate and gate support, an angular stop mounted on the support to prevent the excessive back movement of the gate, same comprising two arms rigidly joined at right angles, a slot cut through each arm, a headed pin inserted through each slot and set in the support at right angles to each other, and a coil spring mounted over each said pin and braced between its head and the said support.

2. In a counting mechanism embodying a gate swingingly mounted on a stationary gate support and a counter fixedly mounted on the gate support, a cam and sliding shaft mechanism to actuate the counter as the gate is swung, same comprising a shaft slidingly mounted on the gate support and adapted to drive the counter, a cam pivoted on the gate support with one eccentric point thereof in contact with and adapted to drive the shaft, and a driving element extended from the gate into contact with another eccentric point of the cam and adapted to drive the cam as the gate swings to and fro.

3. In a counting mechanism embodying a gate swingingly mounted on a stationary gate support and a counter fixedly mounted on the gate support, a cam and sliding shaft mechanism to actuate the counter as the gate is swung, same comprising a shaft slidingly mounted on the gate support and adapted to drive the counter, a compensating cam pivoted on the gate support and having a spring set element in contact with and adapted to drive the shaft, and a driving element extended from the gate into contact with the cam and adapted to drive the cam as the gate swings to and fro.

4. A counting mechanism consisting of the combination of a fixed horizontal rod; a gate swingingly mounted thereon; a pinion-con-

trolled counter fixed on the rod; a shaft mounted on the rod for longitudinal sliding movement; a cam pivoted on the rod and connecting the gate and shaft so that they move in unison; a guide plate with an inclined guide slot at the end of the shaft; and a stub rack mounted for vertical movement on the rod in mesh with the counter pinion and slidingly connected with the guide slot.

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Witnesses:
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CLARA J. MUELLER.