

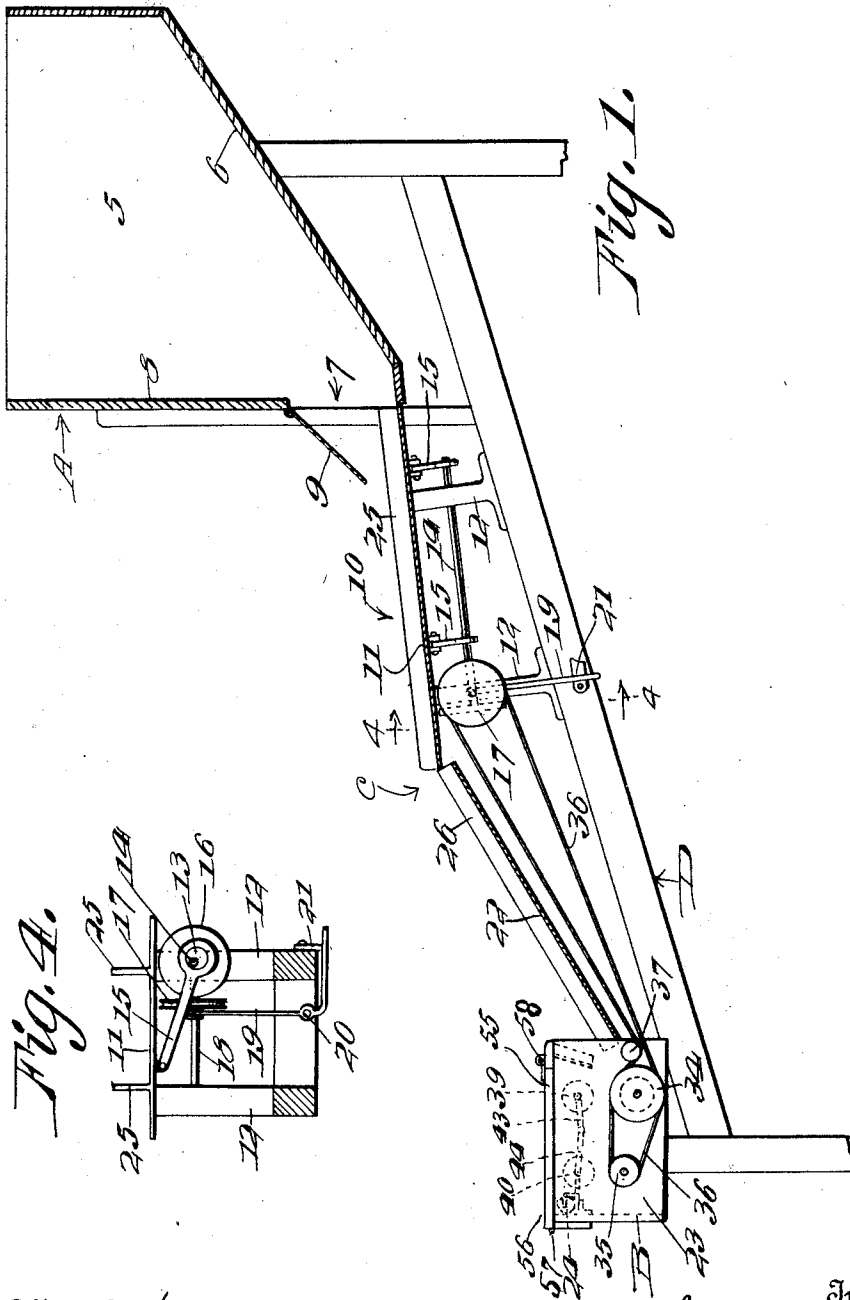
BOBBIN FEEDING AND COUNTING APPARATUS.

APPLICATION FILED APR. 21, 1910.

1,010,332.

Patented Nov. 28, 1911.

3 SHEETS--SHEET 1.



Witnesses
Ada C. Fagerty
Elsa B. DeGra

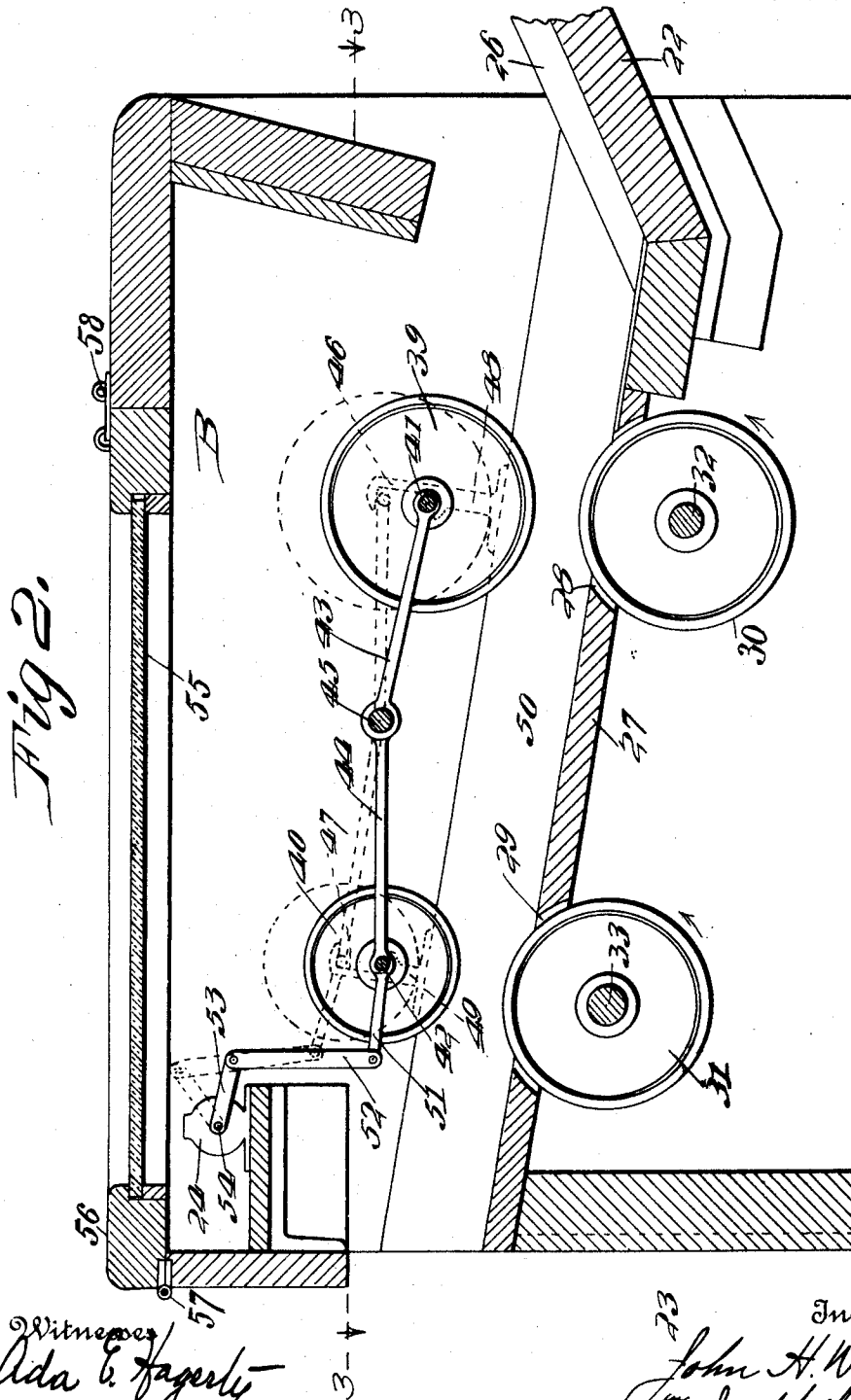
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Elna B. Dana

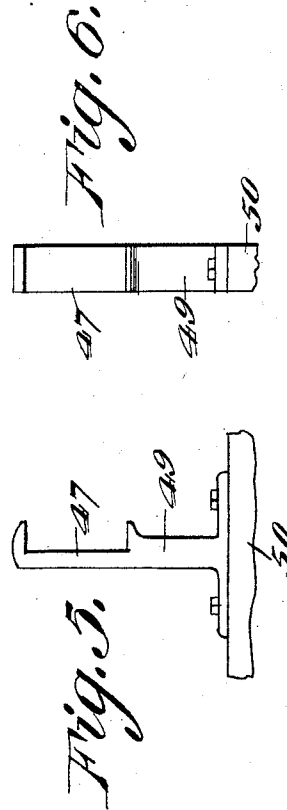
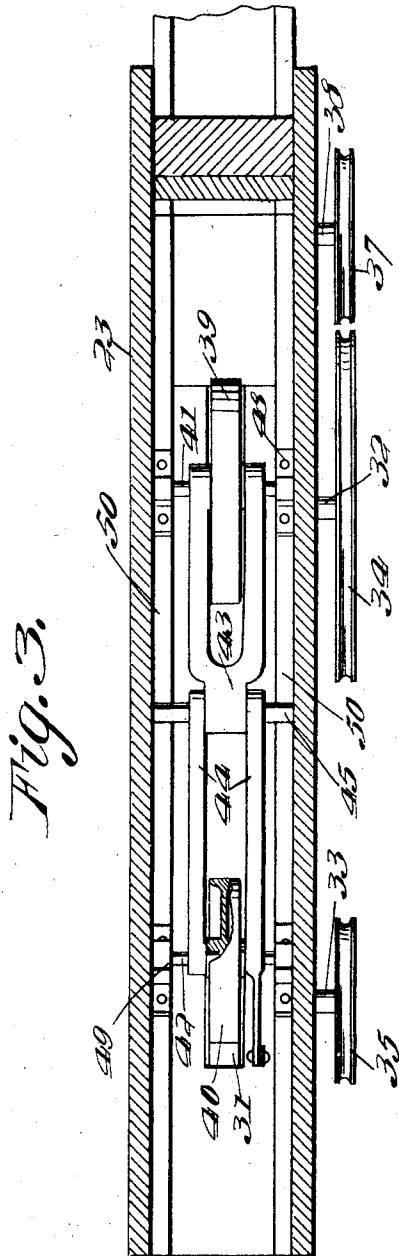
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3 SHEETS—SHEET 3.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN H. WALL, OF BRISTOL, RHODE ISLAND.

BOBBIN FEEDING AND COUNTING APPARATUS.

1,010,332.

Specification of Letters Patent.

Patented Nov. 28, 1911.

Application filed April 21, 1910. Serial No. 556,853.

To all whom it may concern:

Be it known that I, JOHN H. WALL, a citizen of the United States, residing at Bristol, in the county of Bristol and State of Rhode Island, have invented a new and useful Improvement in Bobbin Feeding and Counting Apparatus, of which the following is a specification.

The present invention is an improvement in bobbin feeding and counting apparatus.

It resides primarily in the production of an apparatus so constructed that the bobbins to be employed are delivered into a casing wherein the counter and the actuating and feeding devices are located, and during their passage through this casing are caused to engage and operate the former device, thereby automatically effecting the actuation of the counter which thus registers the total number of bobbins so utilized.

A practical embodiment of the invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a side elevation, with parts in section, of said invention complete, Fig. 2 is an enlarged longitudinal vertical section taken through the casing in which the counter and its actuating and feeding devices are located. Fig. 3 is a horizontal section taken on the line 3—3 of Fig. 2. Fig. 4 is a transverse vertical section taken on the line 4—4 of Fig. 1. Fig. 5 is an enlarged side elevation of one of the supporting brackets arranged within the casing, and Fig. 6 is a front elevation of Fig. 5.

On reference to said drawings, it will be seen that the apparatus as a whole comprises essentially a supply device designated in a general manner by the character A, a register B, and a feed mechanism C from the former element to the latter, the several elements specified being mounted upon an inclined supporting framework D.

In the construction illustrated, the supply device is constituted by a hopper 5 having an inclined bottom feed wall 6 and a discharge opening 7 in its front wall 8, the latter wall having a gate 9 for said opening pivoted thereto.

From the hopper, the bobbins pass on to a device 10 by means whereof they are straightened out and caused to assume an end-to-end position. This device forms one part or member of the feed mechanism C and comprises a table 11 supported upon legs 12, said table having a lateral shaking

movement imparted thereto through the medium of a pair of eccentrics 13 which are mounted on a shaft 14 and have their straps 15 pivotally connected to the table. No limitation however to the specific shaking mechanism just described is intended, since any equivalent mechanism may be substituted therefor. Rotation of the eccentric shaft 14 is effected in the present instance by means of a friction disk 16 secured to the front end thereof and engaged by a grooved friction pulley 17 slidably mounted on the drive shaft 18, to which power may be suitably transmitted from any preferred source. The movements of the sliding pulley 17 are effected and controlled by a bell crank lever 19 pivoted at 20 to the framework D, one arm of the lever being connected with the hub of said pulley while the other arm is normally engaged and depressed by a latch 21 which is likewise pivoted to the framework, such engagement causing a continuous operation of the shaker during the time that the apparatus is working. The other part or member of the feed mechanism is in the form of a downwardly inclined runway 22 which leads from the discharge end of the shaker into the casing 23 of the register B, wherein the counter 24 is located. The table 11 and the runway 22 are provided, respectively, with vertical side flanges or rails 25 and 26 which preclude displacement of the bobbins therefrom during their passage into the counter casing 23.

Within the casing there is arranged a slightly upwardly inclined track or runway 27 along which the bobbins travel on leaving the runway 22, the latter element extending into the interior of the casing for a short distance. The runway 27 is formed with a pair of longitudinal slots 28 and 29, located one in advance of the other, through which slots project a pair of feed rollers 30 and 31 mounted on horizontal shafts 32 and 33 journaled in the side walls of the casing. Said shafts extend at one end beyond the corresponding casing wall and carry grooved pulleys 34 and 35, the former of which has an appreciably greater diameter than the latter. These pulleys are driven by a belt 36 which connects them with the driving pulley 17, there being located adjacent to pulley 34 a guide pulley 37 for said belt mounted upon a pin 38 affixed to the casing wall. The movement of the belt will there-

fore effect the rotation of the feed rollers 30 and 31 in the direction indicated by the arrows in Fig. 2. To cooperate with said rollers in feeding the bobbins along the track or runway 27 there is provided a device comprising in the construction illustrated, a pair of gravity rollers 39 and 40 loosely mounted on axle pins 41 and 42 suspended by yokes 43 and 44 from a horizontal rod 45 affixed at its ends to the side walls of the casing. The yokes extend in opposite directions from the afore-mentioned rod, and their lengths are such as to dispose the rollers 39 and 40 directly over the driving rollers 30 and 31, toward which they have a normal tendency to move by reason of their pivotal mounting. The ends of the axle pins 41 and 42 play in longitudinal recesses 46 and 47 formed in the inner or presented faces of the front and rear pairs of vertical brackets 48 and 49 mounted upon rails 50 at the sides of the track or runway 27, the length of these recesses governing the extent of movement of the gravity feed rollers both toward and away from the driving feed rollers, as will be apparent.

One of the members which constitute the legs of the front yoke 44 is formed with a forward extension 51 having pivoted thereto a link 52 to which in turn is pivoted a link 53 secured to the operating shaft 54 of the counter 24. These connections may be replaced by others of an analogous nature, if desired, or the counter operated in any other suitable manner from the front gravity roll.

In order to permit inspection of the counter, without, however, affording access thereto under ordinary conditions, said counter is arranged beneath a transparent panel 55 provided in the cover 56 of the casing, the cover being hinged as at 57 to the front wall of the casing and designed to be retained in closed position by a lock 58 of any preferred description.

The operation of the register is as follows: On passing one at a time into the interior of the casing from the runway 22, the bobbins are delivered onto the ascending runway 27 and are engaged between the rear gravity and driving feed rollers 39 and 30, the former of which acts as a presser roller and holds the bobbin against the driving roller, which latter thus is enabled to feed the bobbin forwardly until seized between the front gravity and driving rollers 40 and 31 and forced through the exit opening in the front wall of the casing. During this movement, the front gravity roller, which likewise exerts its pressure upon the bobbin, is forced upwardly by the size of the latter, whereupon the drive shaft 54 of the counter will be operated through the links 52 and 53 and the extension 51 of the front yoke 44. The diameter of the front gravity roller is appreciably less than

that of the corresponding rear roller, and consequently its tension is proportionately less and its upward movement more rapid than that of said rear roller. Finally the speed at which the front driving roller rotates exceeds that of the rear driving roller to such an extent that a bobbin engaged between the rollers 31 and 40 will be discharged through the exit opening, and the roller 40 returned to its normal position before the succeeding bobbin is seized.

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

1. In a bobbin counting apparatus, the combination of a casing, means for feeding a bobbin therethrough, a counter located in said casing, gravity operated rollers for holding the bobbin against said feeding means during its passage through the casing, and connections between one of said rollers and said counter for actuating the latter.

2. In a bobbin counting apparatus, the combination of a casing, means for feeding a bobbin therethrough, a counter located in said casing, a pair of vertically movable presser rollers for holding the bobbin against said feeding means during its passage through the casing, and connections between one of said rollers and said counter for actuating the latter.

3. In a bobbin counting apparatus, the combination of a casing, rollers arranged in said casing for feeding a bobbin therethrough, means for driving said rollers, a counter located in said casing, means associated with said rollers and located above the same for holding the bobbin thereagainst, and connections between said holding means and said counter for actuating the latter.

4. In a bobbin counting apparatus, the combination of a casing, rollers arranged in said casing for feeding a bobbin therethrough, means for driving said rollers, a counter located in said casing, gravity operated presser means located above said rollers for holding the bobbin thereagainst, and connections between said presser means and said counter for actuating the latter.

5. In a bobbin counting apparatus, the combination of a casing, rollers arranged in said casing for feeding a bobbin therethrough, means for driving said rollers, a counter located in said casing, a pair of vertically movable presser rollers located above said feeding rollers for holding a bobbin thereagainst, and connections between one of said presser rollers and said counter for actuating the latter.

6. In a bobbin counting apparatus, the combination of a casing, a counter located therein, a pair of rollers located one in advance of the other in said casing for feed-

ing a bobbin therethrough, means for rotating said rollers in unison, a pair of independently movable presser rollers located above said feeding rollers for holding the bobbin against the latter, said presser rollers being operated successively by the bobbin during its travel, and connections between one of said presser rollers and said counter for actuating the latter.

7. In a bobbin counting apparatus, the combination of a casing, a counter located therein, a pair of rollers located one in advance of the other in said casing for feeding a bobbin therethrough, gravity operated means located in said casing above said feeding rollers for holding the bobbin against the latter, connections between said holding means and said counter for actuating the latter, and means for driving said rollers, the front roller rotating at a greater speed than the rear roller, whereby the bobbin is discharged from the casing before the succeeding is engaged by the rear roller.

8. In a bobbin counting apparatus, the

combination of a casing provided with an interiorly located runway formed with a slot, said runway extending through said casing, a feeding wheel projecting through said slot into position to engage a bobbin introduced into the casing, means for driving said roller, a pair of brackets arranged at opposite sides of said runway and formed with vertical recesses, a transversely-arranged pin having its ends working in said recesses, a body mounted on said pin for holding the bobbin against said roller, said body being operable by the bobbin, a yoke connected to said pin, a second pin from which said yoke is suspended, a counter, and connections between said yoke and said counter for actuating the latter.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

JOHN H. WALL.

Witnesses:

ADA E. HAGERTY,

J. A. MILLER.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."