

A. BOGDÁNYFY.
FEEDING ATTACHMENT FOR CROWN CORK MAKING MACHINES.
APPLICATION FILED JUNE 7, 1912.

1,055,126.

Patented Mar. 4, 1913.

3 SHEETS—SHEET 1.

Fig. 1.

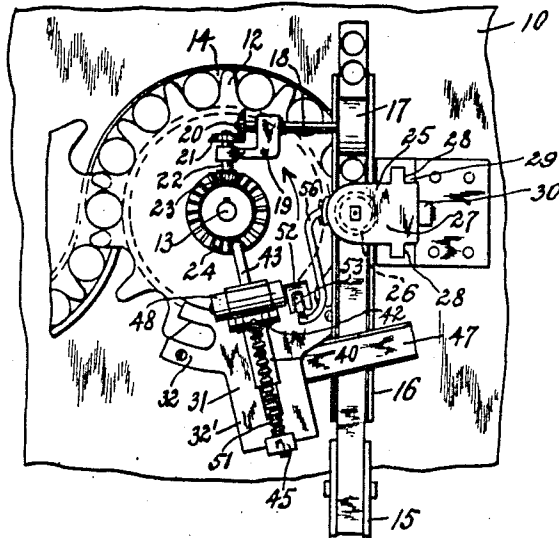
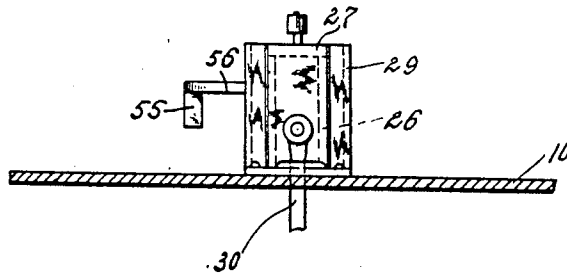


Fig. 2.



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3 SHEETS-SHEET 2.

Fig. 3.

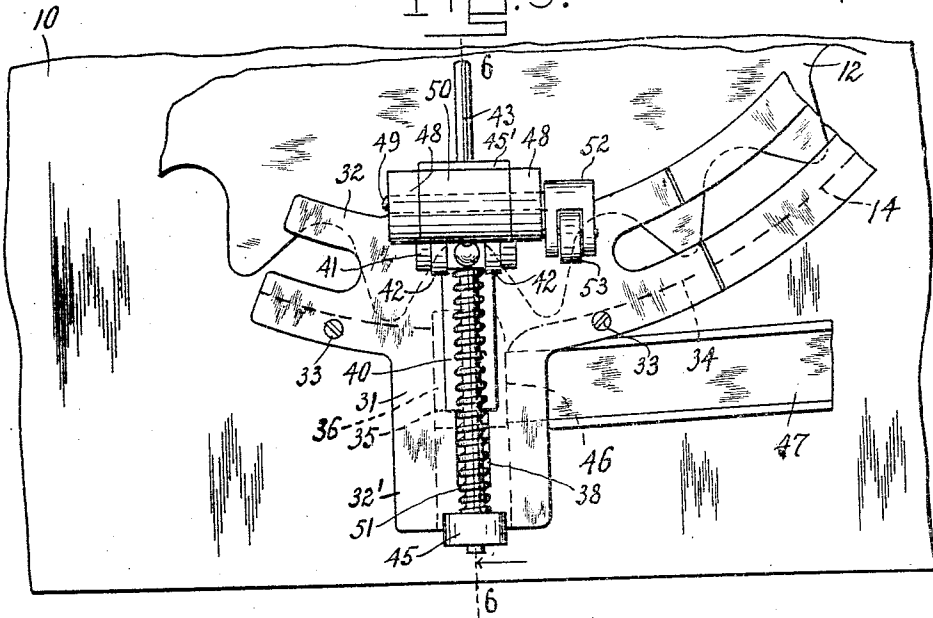
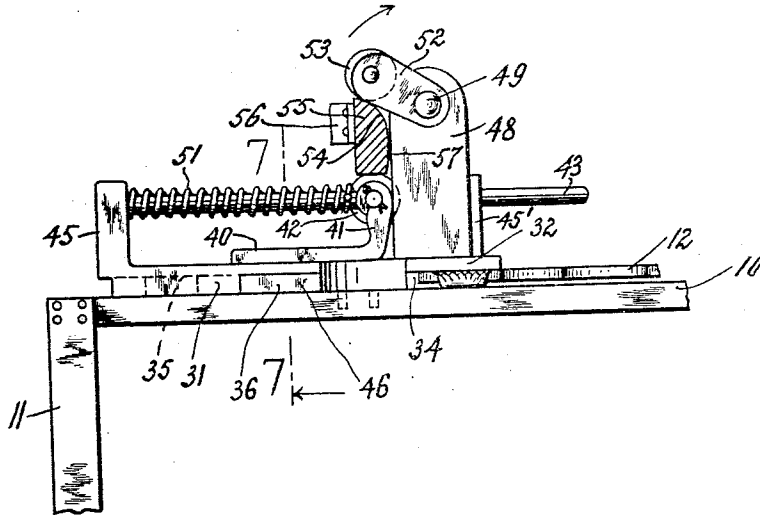


Fig. 4.



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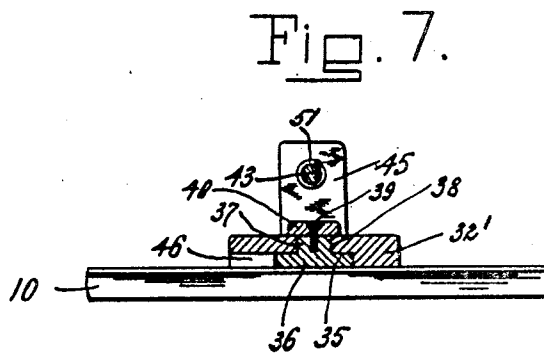
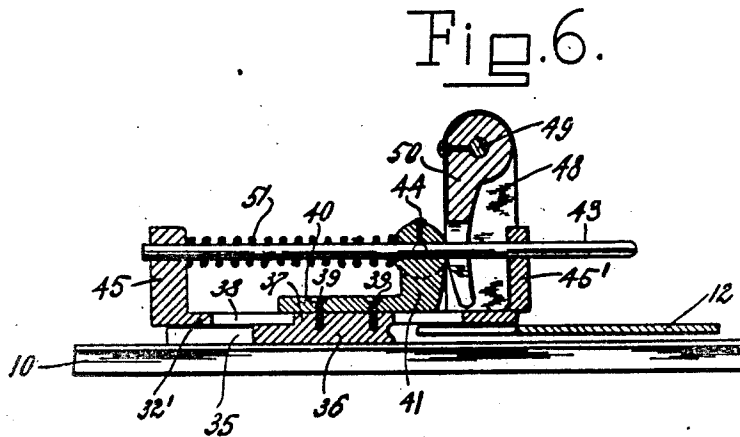
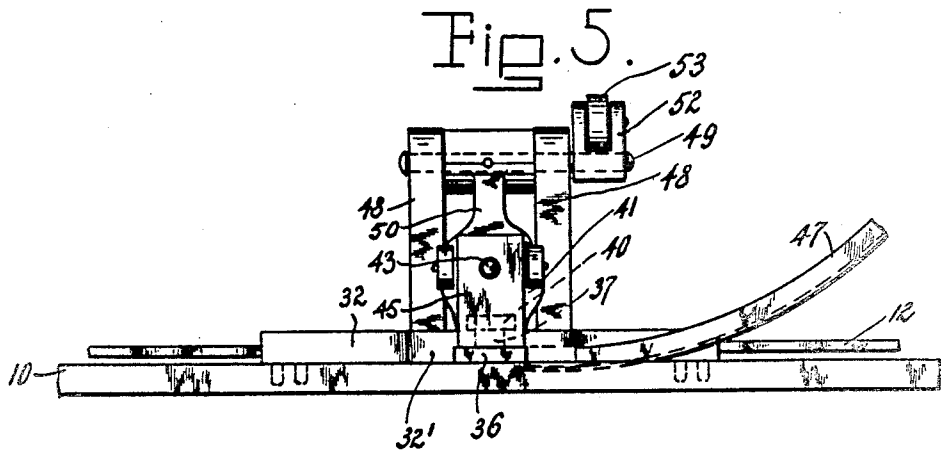
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UNITED STATES PATENT OFFICE.

ALEXANDER BOGDANFFY, OF NEW YORK, N. Y., ASSIGNOR TO INTERNATIONAL CORK CO., OF BROOKLYN, NEW YORK, A CORPORATION OF NEW YORK.

FEEDING ATTACHMENT FOR CROWN-CORK-MAKING MACHINES.

1,055,126.

Specification of Letters Patent.

Patented Mar. 4, 1913.

Application filed June 7, 1912. Serial No. 702,263.

To all whom it may concern:

Be it known that I, ALEXANDER BOGDANFFY, a subject of the King of Hungary, and resident of the city of New York, in the county of Kings and State of New York, have invented certain new and useful Improvements in Feeding Attachments for Crown-Cork-Making Machines, of which the following is a specification.

The present invention relates to the manufacture of bottle closures of the class known as "crown cork sealing caps or closures", and more particularly to means for feeding the metallic parts or caps of the closure to the assembling devices of the machine.

Heretofore, as far as known, the metallic caps were fed by hand or automatically through a chute onto a rotary transporting plate, which conveyed the same in their inverted positions one by one into recesses or pockets of a toothed wheel, to which intermittent rotary movement was imparted. The wheel carried the crowns to a disk cutting device, where they received impervious disks, to be transported then by another toothed wheel to the other parts of the machine. It has been found that, when the inverted caps are conveyed by the rotary transporting plate to the toothed wheel, it often happens that the intermittent rotary movement of said toothed wheel starts before the cap is in its proper position, whereby the same is either thrown backward onto the rotary transporting plate or crushed. In the first case one of the recesses or pockets in the toothed wheel remains empty, causing thereby serious trouble, and in the second case the machine must be stopped in order to remove the crushed cap or caps from the mechanism.

One of the objects of the present invention is to obviate the defects hereinbefore mentioned, and to provide a simple and effective feeding attachment, whereby the inverted caps are seated in the recesses or pockets of the toothed wheel automatically and in a reliable manner.

Another object of the invention is to produce a feeding attachment which transports the caps from the chute immediately into the pockets or recesses of the toothed wheel, thereby doing away with the rotary transporting plate above-mentioned.

A further object of the invention is to

provide a feeding attachment which is actuated by a reciprocating part of the crown cork assembling machine and in such a manner that the feeding finger of the attachment is actuated during the feeding operation by a spring, thereby preventing the breaking or crushing of the caps as the same are seated in the pockets or recesses of the toothed wheel.

With these and other objects in view, which will more fully appear as the nature of the invention is better understood, the same consists in the combination, arrangement and construction of parts hereinafter fully described, pointed out in the appended claims and illustrated in the accompanying drawings, it being understood that many changes may be made in the size and proportion of the several parts and minor details of construction within the scope of the appended claims without departing from the spirit or sacrificing any of the advantages of the invention.

One of the many possible embodiments of the invention is illustrated in the accompanying drawings, in which:—

Figure 1 is a plan view of a portion of a crown cork seal manufacturing machine with the attachment embodying the present invention; Fig. 2 is a side elevation of a portion of the device shown in Fig. 1; Fig. 3 is a plan view of the attachment with the adjacent parts of the crown cork seal manufacturing machine; Fig. 4 is a side elevation of the device shown in Fig. 3; Fig. 5 is a front elevation of the same; Fig. 6 is a section taken on line 6—6 of Fig. 3; and Fig. 7 is a section taken on line 7—7 of Fig. 4.

In the drawings only so much of the crown cork making machine is shown as is necessary to understand the operation of the attachment, which forms the subject matter of the present application.

The crown cork making machine includes a horizontal frame member or table 10, which is supported by legs or standards 11, the latter being attached in any suitable manner to the floor. The inverted metallic caps of the crown corks are fed by means hereinafter to be described to the recesses or pockets of a toothed wheel 12, which is attached above the table 10 to a vertical shaft 13, to which intermittent rotary motion is imparted in the direction of the arrow shown

in Fig. 1 of the drawings by any suitable means, which have not been shown in the drawings for the reason that they do not form part of the invention. The wheel 12 engages the flange portions of the caps and conveys them along a guiding passage 14 on the table 10 to rest directly beneath the means which cuts an impervious binding disk from a strip of suitably prepared paper, or other material, and places the disk into the inverted cap. The paper strip from which the disks are cut is wound upon a reel 15, which is suitably journaled in the frame of the machine, and from which the strip is conducted into a guide 16 to pass between feeding rollers 17, which are journaled also in the frame of the machine. The upper one of these feeding rollers is shown in Fig. 1 of the drawings, its spindle 18 being journaled in a bearing 19, and carries at its outer end a bevel gear 20, meshing with a similar gear 21, upon the shaft 22 of which is mounted another bevel gear 23 in mesh with a similar gear 24, which latter is attached to the shaft 13 of the wheel 12. Obviously the feeding rollers will thus rotate intermittently and advance the paper strip to the cutting means 25. The cutting means comprises a tubular cutter 26, which is secured in any suitable manner to an arm 27, the latter being slidably arranged in vertical guideways 28 of a bracket 29, which is held upon the table 10. The arm 27 is pivotally engaged by an actuating rod 30, which is reciprocated by the intermediary of any suitable mechanism from the main driving shaft of the machine. The cutter 26 performs the cutting operation while moving downward and during the time at which the wheel 12 is at rest. The paper strip, on the other hand, is fed to the cutter during the movement of said wheel.

The caps are fed to the pockets of the toothed wheel by an attachment which comprises a substantially T-shaped base plate 31, the head 32 of which is arc-shaped, its curvature conforming to that of the wheel 12. The base plate is attached, for instance by means of screws 33, 33, to the table 10, and is provided in the underface of its head 32 with an arc-shaped recess 34, which accommodates the wheel 12 and forms, as it were, a continuation of the guiding passage 14 on the table. The recess 34 communicates with a channel 35 in the leg 32' of the base plate, which channel extends radially to the recess 34.

In the channel 35 is slidably arranged a feeding finger 36, provided with a reduced portion 37, which engages a longitudinal slot 38 in the leg 32' of the base plate, and is fastened, for instance, by means of screws 39, 39, to a plate member 40, which is provided upon its inner end with an upwardly extending post 41, which carries rollers 42,

42. To the post is attached a substantially horizontal rod 43, for instance by means of a screw 44, said rod being slidably arranged in substantially vertical extensions 45 and 45' upon the ends of the base plate 31.

The channel 35 in the leg 32' is provided with an inlet 46, which communicates with the outlet of a cap charging chute 47, to which the caps are fed in their inverted positions automatically by any suitable means. The chute runs substantially at right angles to the longitudinal axis of the leg 32' of the base plate, or in other words parallel with the tangent to the toothed wheel 12 at that point.

At its inner end the head 32 of the base plate is provided with two upwardly extending standards 48, 48, in which is mounted a rocking spindle 49, to which is attached a downwardly extending fork-shaped actuating member 50, the prongs of which engage the rollers 42, 42 upon the upwardly extending post 41 of the plate member 40. Against this post and the vertical extension 45 bears a spring 51, which is coiled upon the rod 43, said spring tending to force the feeding finger 36 to its innermost position toward the pockets of the wheel 12. To the spindle 49 is furthermore keyed or otherwise attached an arm 52, carrying upon its free end a roller 53, said roller being kept continuously in contact by the spring 51 with the cam shaped face 54 of a block 55, which is rigidly attached by the intermediary of a connecting member 56 to the arm 27 of the tubular cutter 26.

In Fig. 4 of the drawings the block 55 is shown in its lowermost position, in which the substantially vertical portion 57 of the cam shaped face 54 of said block is held a substantial distance beyond the center of the roller 53. Obviously in moving the block upward, the arm 52 will be caused to move in the direction of the arrow shown in Fig. 4 of the drawings in an arc-shaped path, whereby the spindle 49 will be given a turn, thereby causing the fork-shaped actuating member, which bears against the rollers 42 upon the upwardly extending post of the plate member 40, to shift the said upwardly extending post and the parts connected therewith against the action of the spring 51 outward toward the vertical extension 45. By this movement, the inlet of the channel 35 will be uncovered, and the spring 51 compressed.

The operation of this device is as follows: The caps are fed in their inverted positions into the chute 47 automatically and slide down toward the inlet 46 to the channel 35. The intermittently moving wheel 12 is timed in such a manner that whenever it stops, one of its recesses or pockets registers with the said channel 35. While the tubular cutter 26 and the block 55 are moving upward, or

in other words during the movement of the wheel 12, the substantially vertical face 57 of the said block will cause the arm 52 to move in the direction of the arrow shown in Fig. 4 of the drawings, by which operation the fork-shaped actuating member 50 upon the spindle 49 will swing toward the vertical extension 45, causing thereby the feeding finger 36 to move toward said extension and to uncover the inlet 46 to the channel 35. Obviously the spring 51 is thereby compressed. As soon as the inlet to the channel is uncovered, one of the metallic caps is fed into said channel in front of the feeding finger by the weight of those above it. When the tubular cutter and the block 55 move downward, the arm 52 will be held for some time by the substantially vertical face 57 of said block in its outermost position. When the block is about to reach its lowermost position, the roller 53 upon the arm 52 is adapted to swing into contact with the curved face of the block, releasing thereby the spring 51, which will move the feeding finger with the cap in front of it toward the registering pocket in the wheel 12 and seat said cap in said pocket. The tubular cutter moves then again upward, the cap in the pocket mentioned travels toward the cutter, and the operation now described is repeated.

From the foregoing, it will be seen that a simple and effective feeding attachment is produced which seats the caps in the recesses or pockets of the toothed wheel automatically and in a reliable manner. The caps are transported by the said feeding attachment from the chute immediately into the pockets or recesses of the wheel without the intermediary of the rotary transporting plates provided in devices heretofore in use. It is to be observed that, since the feeding finger of the attachment is actuated by a spring, the breaking or crushing of the caps as they are being seated in the pockets of the toothed wheel is effectively prevented. In other words if, for instance, an obstruction should be in the path of the caps, the latter will not be broken or crushed as the feeding finger is not actuated by a positively moving device, but by a spring only, which, of course, is normally too weak to crush the caps.

Attention is called to the fact that, while herein the attachment has been shown and described as being actuated by the reciprocating tubular cutter, the same may be operated by any other reciprocating element of the crown cork making machine. Of course, the said element must move in unison with the wheel 12.

What I claim is:—

1. In a machine for making composite bottle-sealing caps, the combination with an intermittently operated cap transporting wheel provided with pockets in its periph-

ery, of a cap charging chute, and spring actuated feeding means for seating each cap as soon as received from said chute into a pocket in said wheel when the latter stops.

2. In a machine for making composite bottle-sealing caps, the combination with an intermittently operated cap transporting wheel provided with pockets in its periphery, of a plate having a channel in alignment with one of said pockets during each stop of said wheel, a cap charging chute leading to said channel, and a spring pressed feeding finger directly engaging a cap from said chute while said wheel is in motion and moving the said cap under the action of its spring in said channel when said wheel stops into the alining pocket in said wheel.

3. In a machine for making composite bottle-sealing caps, the combination with an intermittently operated cap transporting wheel provided with pockets in its periphery, of a plate having a channel in alignment with one of said pockets during each stop of said wheel, a cap charging chute leading to said channel, a spring actuated feeding finger slidably arranged in said channel and adapted to close the communication between said channel and said chute, and means for shifting said feeding finger so as to open a communication between said channel and said chute, whereby a single cap is fed into said channel in front of said feeding finger while said transporting wheel is in motion, said means rendering at the same time the spring acting upon said finger operative and allowing the same to act when said wheel stops, whereby said feeding finger seats the said cap in said channel into the alining pocket in said wheel.

4. In a machine for making composite bottle-sealing caps, the combination with an intermittently operated cap transporting wheel provided with pockets in its periphery, of a plate having a channel in alignment with one of said pockets during each stop of said wheel, a cap charging chute leading to said channel, a spring actuated feeding finger slidably arranged in said channel and adapted to close the communication between said channel and said chute, and means operated by a reciprocating element of the machine for shifting said feeding finger so as to open a communication between said channel and said chute, whereby a single cap is fed into said channel in front of said feeding finger while said transporting wheel is in motion, said means rendering at the same time the spring acting upon said finger operative and allowing the same to act when said wheel stops, whereby said feeding finger seats the said cap in said channel into the alining pocket in said wheel.

5. In a machine for making composite

bottle-sealing caps, the combination with an intermittently operated cap transporting wheel provided with pockets in its periphery, of a plate having a channel in alignment with one of said pockets during each stop of said wheel, a cap charging chute leading to said channel, a spring actuated feeding finger slidably arranged in said channel and adapted to close the communication between said channel and said chute, a rocking shaft, an actuating member upon said shaft in engagement with said finger, an arm upon said shaft, and means for rocking said arm in one direction while said wheel is moving, thereby shifting said finger so as to open a communication between said channel and said chute, whereby a single cap is fed into said channel in front of said feeding finger and the spring acting upon said finger is rendered operative, said arm moving in the other direction when said wheel stops, allowing thereby the spring to act, whereby said feeding finger seats the said cap in said channel into the alining pocket in said wheel.

6. In a machine for making composite bottle-sealing caps, the combination with an intermittently operated cap transporting wheel provided with pockets in its periphery, of a plate having a channel in alignment with one of said pockets during each stop of said wheel, a cap charging chute leading to said channel, a spring actuated feeding finger slidably arranged in said channel and adapted to close the communication between said channel and said chute, a rocking shaft, an actuating member upon said shaft in engagement with said finger, an arm upon said shaft, and means operated by a reciprocating element of the machine for rocking said arm in one direction while said wheel is moving, thereby shifting said finger so as to open a communication between said channel and said chute, whereby a single cap is fed into said channel in front of said feeding finger and the spring acting upon said finger is rendered operative, said arm moving in the other direction when said wheel stops, allowing thereby the spring to act, whereby said feeding finger seats the said cap in said channel into the alining pocket in said wheel.

7. In a machine for making composite bottle-sealing caps, the combination with a horizontal table having an arc-shaped guiding passage, of an intermittently operated cap transporting wheel provided with pockets in its periphery, a substantially T-shaped base plate provided in the underface of its head with an arc-shaped recess which accommodates the said wheel and forms a continuation of the guiding passage on said table, said recess communicating with a channel in the leg of said base plate,

said channel extending radially to said recess and being in alinement with one of said pockets during each stop of said wheel, a cap charging chute leading to said channel, and a spring pressed feeding finger directly engaging a cap from said chute while said wheel is in motion and moving the said cap under the action of its spring in said channel when said wheel stops into the alining pocket in said wheel.

8. In a machine for making composite bottle-sealing caps, the combination with a horizontal table having an arc-shaped guiding passage, of an intermittently operated cap transporting wheel provided with pockets in its periphery, a substantially T-shaped base plate provided in the underface of its head with an arc-shaped recess which accommodates the said wheel and forms a continuation of the guiding passage on said table, said recess communicating with a channel in the leg of said base plate, said channel extending radially to said recess and being in alinement with one of said pockets during each stop of said wheel, a cap charging chute leading to said channel, a spring actuated feeding finger slidably arranged in said channel and adapted to close the communication between said channel and said chute, and means for shifting said feeding finger so as to open a communication between said channel and said chute, whereby a single cap is fed into said channel in front of said feeding finger while said transporting wheel is in motion, said means rendering at the same time the spring acting upon said finger operative and allowing the same to act when said wheel stops, whereby said feeding finger seats the said cap in said channel into the alining pocket in said wheel.

9. In a machine for making composite bottle-sealing caps, the combination with a horizontal table having an arc-shaped guiding passage, of an intermittently operated cap transporting wheel provided with pockets in its periphery, a substantially T-shaped base plate provided in the underface of its head with an arc-shaped recess which accommodates the said wheel and forms a continuation of the guiding passage on said table, said recess communicating with a channel in the leg of said base plate, said channel extending radially to said recess and being in alinement with one of said pockets during each stop of said wheel, a cap charging chute leading to said channel, a spring actuated feeding finger slidably arranged in said channel and adapted to close the communication between said channel and said chute, a rocking shaft, an actuating member upon said shaft in engagement with said finger, an arm upon said shaft, and means for rocking said arm in

one direction while said wheel is moving,
thereby shifting said finger so as to open
a communication between said channel and
said chute, whereby a single cap is fed into
5 said channel in front of said feeding finger
and the spring acting upon said finger is
rendered operative, said arm moving in the
other direction when said wheel stops, al-
lowing thereby the spring to act, whereby
10 said feeding finger seats the said cap in said

channel into the alining pocket in said
wheel.

Signed at New York, in the county of
Kings and State of New York, this 26th
day of April, A. D. 1912.

ALEXANDER BOGDÁNFFY.

Witnesses:

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WM. KLINK.