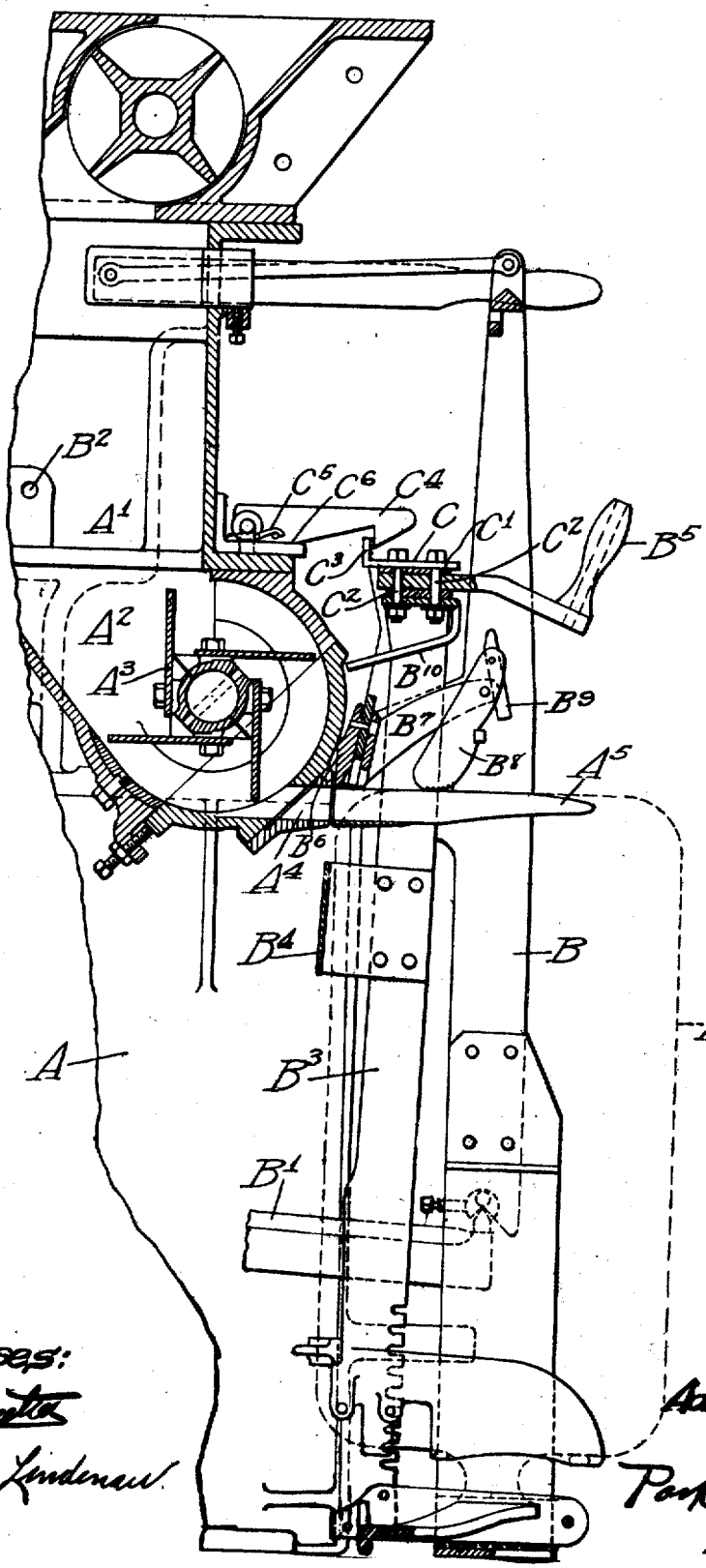
A. M. BATES.

VALVE BAG FILLING MACHINE.

APPLICATION FILED JAN. 25, 1915.

1,209,105. Patented Dec. 19, 1916.



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UNITED STATES PATENT OFFICE.

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VALVE-BAG-FILLING MACHINE.

1,209,105. Specification of Letters Patent. Patented Dec. 19, 1916.

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To all whom it may concern:

Be it known that I, ADELMER MARCUS BATES, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Valve-Bag-Filling Machines, of which the following is a specification.

My invention relates to improvements in machines for filling valve bags and it has for one object to provide means which prevent the premature removal of the bag from its filling relation.

I have illustrated it in connection with a bag filling and weighing machine in which when the bag has been filled to the proper weight that weight operates a mechanism to drop the bag or lower it a slight distance and in my invention I provide means rendering it impossible to remove the bag from the filling relation until it has been so dropped or lowered or moved from its original position.

The invention is more or less diagrammatically illustrated in the accompanying drawing, wherein is shown a fragmentary side elevation in part section of a bag filling and weighing machine showing my device in position.

A is a bag filling machine frame. It carries a material supply chamber A^1, a propeller chamber A^2 and a propeller A^3 therein. This propeller discharges material which is fed to it from above through the feeding throat A^4 and feeding tube A^5 normally in register with it.

A^6 is a cut off plate mounted for movement with the feeding tube A^5 in such position that when the tube A^5 drops down out of register with the throat A^4, the plate takes its place, and this stops the flow of material from the throat.

The feeding tube A^5 is mounted on a frame B. This frame is supported as indicated on a scale beam B^1 and is guided at its upper end by a link B^2.

B^3 is a sub-frame pivoted at its lower end as indicated having a breeching B^4 partially surrounding the bag.

B^5 is a control handle whereby the sub-frame B^3 may be rocked forward so that the breeching B^4 will engage the bag B^6 immediately below the point where it is supported on the tube A^5 and will thus tip the bag backward drawing it off of the tube and freeing it from the machine.

B^7 is a yoke mounted on the sub frame B^3. It has pivoted to it the downwardly depending serrated pawl B^8. The serrated surface of this pawl is adapted normally to rely upon the feeding tube A^5, and to engage the bag mounted thereon. Any movement of the bag along the pipe will tend to jam the pawl tighter against the pipe, and thus such movement will be resisted and prevented. When this pawl, however, is moved away from the feeding tube by any means striking its upper end, the bag can then be freely withdrawn.

B^9 is a latch pivoted on the upper end of the pawl above the pivotal point thereof, and projecting into the path of the releasing member B^{10}, so that when the frame B^3 is rotated in a clockwise direction, the releasing member B^{10} engages such lever and pawl and rocks the pawl out of engagement with the pipe, thus freeing the bag. On the return movement the engaging member strikes the upper end of the pivotally mounted lever, rotates it in the opposite direction, and thus passes by without disturbing the pawl itself.

C is a latch block removably mounted on the upper end of the frame B^3.

C^1 are spacing shims beneath it and the frame held in position with respect to the frame by bolts C^2 which hold all parts in proper relation.

C^3 is a fixed hook or flange projecting upwardly from the block C adapted to be engaged by the spring latch hook C^4. This spring latch hook C^4 is pivoted on the outside wall of the chamber A^2. It is held in position by means of the spring C^5 being limited in its downward movement by the heel C^6 so that it normally engages the member C^3 to hold the parts in fixed position.

It will be evident that while I have shown in my drawings an operative device still many changes might be made both in size, shape and arrangement of parts without departing from the spirit of my invention, and I wish, therefore, that my drawings be regarded as in a sense diagrammatic.

Attention is called to my copending application Serial Number 8203, filed February 15, 1915, which shows an arrangement somewhat similar to that illustrated in the present application. Certain novel features shown but not claimed in this application are claimed in that one.

The use and operation of my invention are as follows:—The material to be filled or fed into the bag is supplied at the top of the machine and flows down freely to the propeller chamber. It is by the propeller projected through the feeding throat into the bag which is supported at its upper end on the tube. The process continues with great rapidity until the bag is filled. When the weight of the bag is sufficient to overcome the resistance of the scale beam the frame carrying the bag drops which it is free to do being supported only by the scale beam and guided at the top by the link. This, of course, throws the feeding throat and feeding tube out of register but since the bag has received its full quota of material and as no more is desired this is of no consequence. The operator then seizes the handle draws it toward him tipping the bag backward, stripping it off the filling tube and allowing it to drop away from the machine in the usual manner. He can do this because the desired movement of the bag frame frees the sub-frame from control by the spring latch hook. If, however, the operator attempted to remove the bag before it was filled and before the weight had caused the mechanism to operate and the bag to drop he would be resisted by the latch and knowing thereby that the bag was not filled he would allow sufficient time for the process to become completed. After the bag has been removed the parts move up into their filling position and the handle and sub-frame are swung back into their normal position the spring control on the latch making this possible without danger of any interference and once the parts are latched they cannot be again disengaged until the frame is moved down either by the weight of the bag or by some other means. My invention, therefore, operates as a protection against premature removal of the bag and against the consequent discharge of insufficiently filled bags from the machine.

I have referred to in my specification and claims and illustrated in the drawing a machine which fills valve bags. It is perfectly obvious that this is one exemplification of my invention and that my invention may be applied to any machine for filling receptacles of any kind whatsoever and the particular kind of filling machine and the particular kind of valve bag which I fill is merely one exemplification or one illustration of the general line of machinery upon which my invention may be applied.

I claim:

1. In a bag filling machine a bag support, a bag mounted thereon, a scale beam carrying said support and free to move up and down under the influence of the bag and means for resisting the removal of the bag before the scale has been moved down, said means comprising a latch in engagement with the support.

2. In a bag filling machine a bag support, a bag mounted thereon, a scale beam carrying said support and free to move up and down under the influence of the bag and means for resisting the removal of the bag before the scale has moved down, said means comprising a latch in engagement with the support, said support being free to move inwardly in engagement with the latch at all times.

3. In a bag filling machine a bag support, a bag mounted thereon, a scale beam carrying said support and free to move up and down under the influence of the bag and means for resisting the removal of the bag before the scale has been moved down, said means comprising a latch in engagement with the support, said latch being out of engagement with the support when the scale has moved down.

4. In a bag filling machine means for locking a bag in filling position and means operative when the bag has been completely filled for releasing such locking means.

5. In a bag filling machine comprising a filling tube, means for locking a bag on the tube and means operative when the bag has been filled for releasing such locking means.

6. In a bag filling machine means for locking a bag in filling position and means operative when the bag has been completely filled for releasing such locking means, and then removing the bag.

7. In a bag filling machine means for locking a bag in filling position and means operative when the bag has been completely filled for releasing such locking means and then removing the bag, means for locking such removing means in position.

8. In a bag filling machine means for locking a bag in filling position and means operative when the bag has been completely filled for releasing such locking means and then removing the bag, means for locking such removing means in position, and means operative after the bag has been filled for unlocking such removing means.

9. In a bag filling machine means for locking a bag in filling position, means for removing it from such position, means for locking the removing means against operation, and means operative after the bag has been filled for releasing the removing means.

10. In a bag filling machine means for locking a bag in filling position, means for removing it from such position, means for

locking the removing means against operation, and means operative after the bag has been filled for releasing the removing means, and means responsive to the operation of the removing means for releasing the bag.

11. A bag filling machine comprising a filling tube, means for locking the bag on the tube, a separate counter-balanced support for the bag, a bag-removing means mounted thereon, means carried by the removing means for disengaging the bag lock, and a latch in engagement with the bag-removing means until the weight of the bag overcomes the counter-balance for holding the bag-removing means in inoperative position.

12. A bag filling machine comprising a filling tube, means for locking the bag on the tube, a separate counter-balanced support for the bag, a bag-removing means mounted thereon, means carried by the removing means for disengaging the bag lock, and a latch in engagement with the bag-removing means until the weight of the bag overcomes the counter-balance for holding the bag-removing means in inoperative position, the bag lock and the bag-removing means lock being both free to permit engagement of the bag and removing means respectively at all times.

13. The combination of a feeding means having an outlet, means for supporting a bag to be filled with the receiving opening of the bag in register with said outlet, mechanism for removing the filled bag from said feeding means and means preventing premature operation of said mechanism.

14. The combination of a feeding means having an outlet, means for supporting a bag to be filled with the receiving opening of the bag in register with said outlet, mechanism for removing the filled bag from said feeding means and means preventing operation of said bag removing mechanism before the said bag has been filled.

15. The combination of feeding means, means for supporting a bag to be filled in a predetermined position with respect to said feeding means, mechanism for removing the filled bag and means preventing the operation of said removing mechanism before the said bag has been filled.

16. The combination of feeding means having an outlet, means for supporting a bag to be filled in position to receive material through said outlet, mechanism for removing the filled bag and means preventing the operation of said mechanism while the bag is being filled.

17. The combination of a stationary feeding means having an outlet, means for supporting a bag with its receiving opening in register with said outlet, mechanism for moving said bag receiving opening past said outlet to discontinue the filling of the bag, means for removing the filled bag and locking means for preventing the removal of the bag before it is filled, said locking means comprising a fixed member, a movable member supported on said bag removing means and means for adjusting said movable member.

18. The combination of feeding means having an outlet, means for supporting a bag with its inlet in communication with said outlet, means for moving the bag inlet past said outlet to discontinue the feeding of the bag, mechanism for removing the bag and locking means preventing the removal of the bag while the said outlet and inlet communicate.

19. The combination of feeding means having an outlet, mechanism for supporting a bag in position to be filled from said outlet, means for operating said supporting mechanism to remove the filled bag from the said position to discontinue the filling thereof, bag discharging mechanism and means preventing the operation of said discharging mechanism while the bag is being filled and moved away from the outlet.

20. The combination of a feeding mechanism having an outlet, means for supporting a bag in position to be filled through said outlet, means for operating said supporting means to remove the bag from said outlet when said bag is filled, discharging means and locking means comprising a fixed and a movable member for preventing operation of the said discharging means while the said supporting means are being operated.

21. The combination of a feeding mechanism, means for supporting a bag to be filled therefrom, mechanism for removing said bag from said feeding mechanism after it has been filled, discharging means for discharging the bag from the machine, locking means for preventing premature operation of said discharging means and comprising a fixed member, a movable member carried by said discharging means and operatively engaged with said fixed member while the bag is being filled.

22. The combination of a feeding mechanism, means for supporting a bag to be filled therefrom, means for discharging said bag after it has been filled and locking means for preventing premature operation of said discharging means said locking means comprising a member secured to the said machine, a movable member secured to said discharging means and means for keeping the movable locking member in engagement with the fixed locking member while the bag is being filled.

23. The combination of a feeding mechanism, a bag supporting chair, a discharge lever pivoted on said chair, a fixed locking member, a movable locking member on said discharge lever and adapted to engage said

fixed member during the filling of the bag and means for operating said movable locking member.

24. The combination of a feeding mechanism, means for supporting a bag to be filled from said mechanism, a bag discharging device, a locking mechanism adapted to prevent said device from being operated before a bag is filled and comprising a fixed member, a movable member carried by said discharging device, and in engagement with said fixed member during the filling of the bag, means for automatically disengaging said two locking members when the bag is filled, means for operating said discharging device away from said feeding mechanism to discharge a bag and means on said locking members for causing the same to engage automatically when said discharging device is moved back into normal position.

25. In a cement packing machine the combination of means for supporting a bag to be filled with cement, clamping means for said bag, discharging mechanism for discharging the filled bag and means preventing the operation of said discharging means before the bag is filled.

26. In a cement packing machine the combination of means for supporting a bag to be filled with cement, clamping means for said bag, discharging mechanism for discharging the filled bag, means on said discharging mechanism for releasing said clamping means to free the bag and a locking device preventing operation of said means for releasing the bag.

27. In a cement packing machine the combination of mechanism for supporting a bag in position to be filled, a discharge device, means for operating the said supporting mechanism to remove the filled bag, locking means preventing operation of said discharging device before the bag is filled, said locking mechanism being adapted to unlock only when the bag is filled and to automatically re-lock when the said discharging device is brought back to normal position.

In testimony whereof, I affix my signature in the presence of two witnesses this 23rd day of January, 1915.

ADELMER M. BATES.

Witnesses:

BESSIE S. RICE,

MINNIE M. LINDENAU.