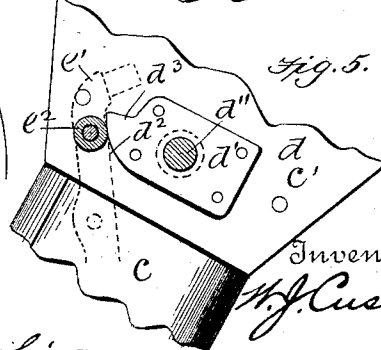
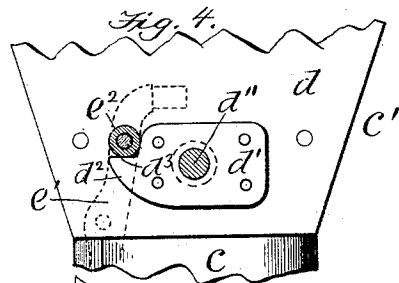
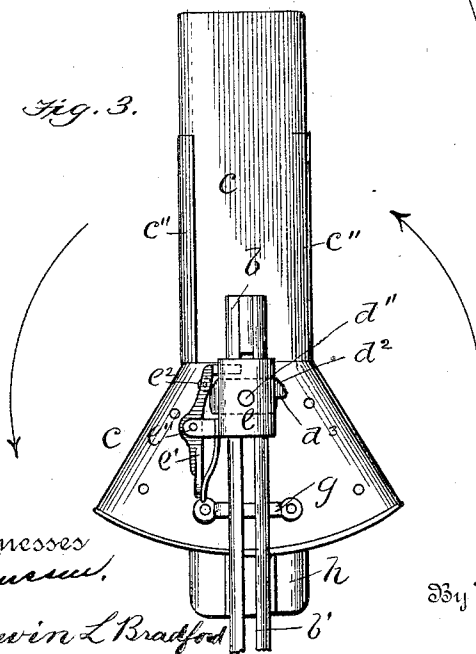
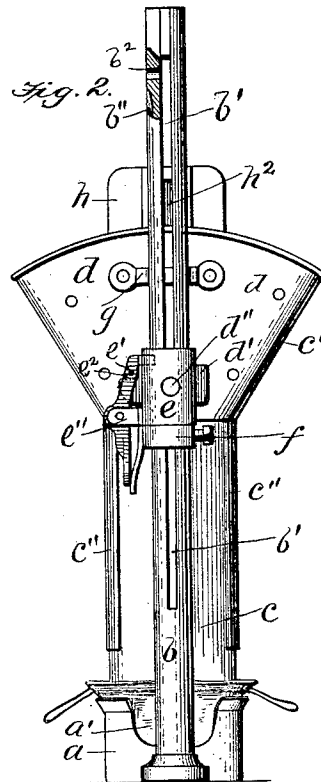
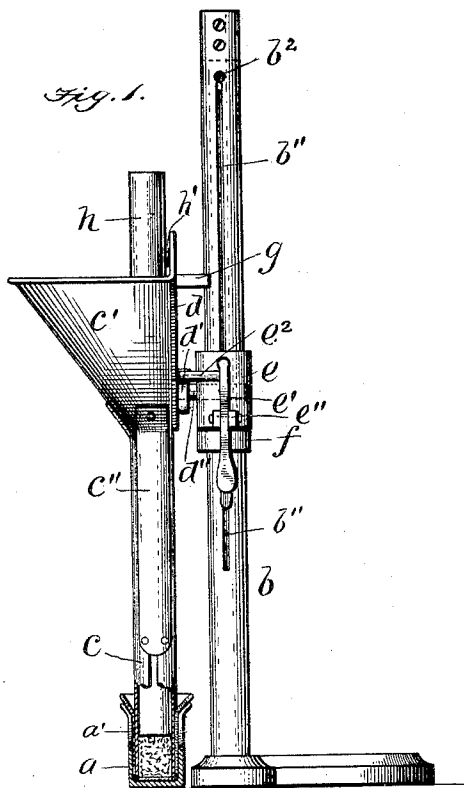


W. J. CUSSEN.
MACHINE FOR PACKING TOBACCO.

No. 477,186.

Patented June 14, 1892.



Witnesses
E. J. Cussen.

Edwin L. Bradford

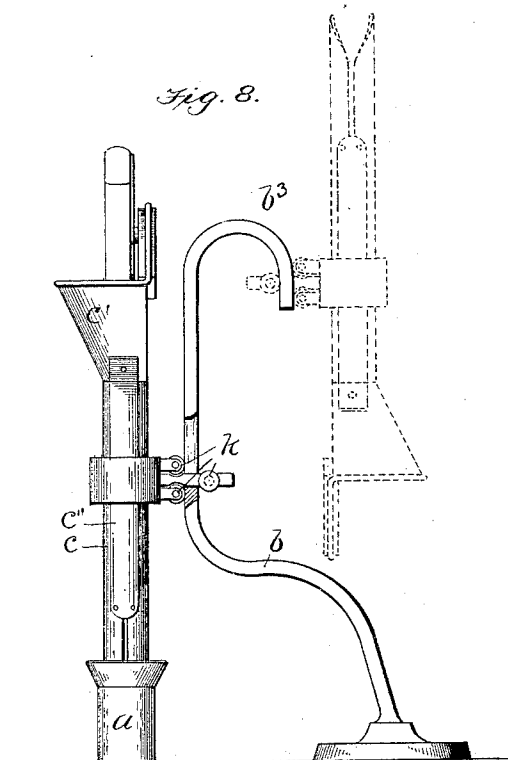
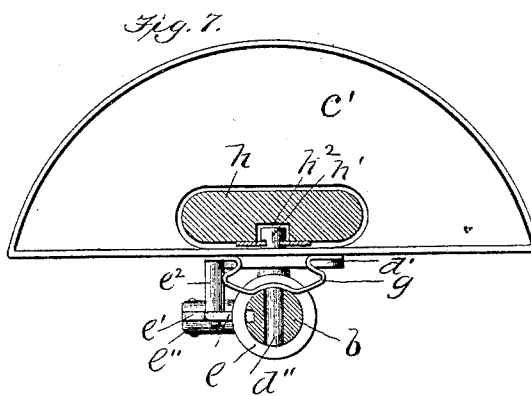
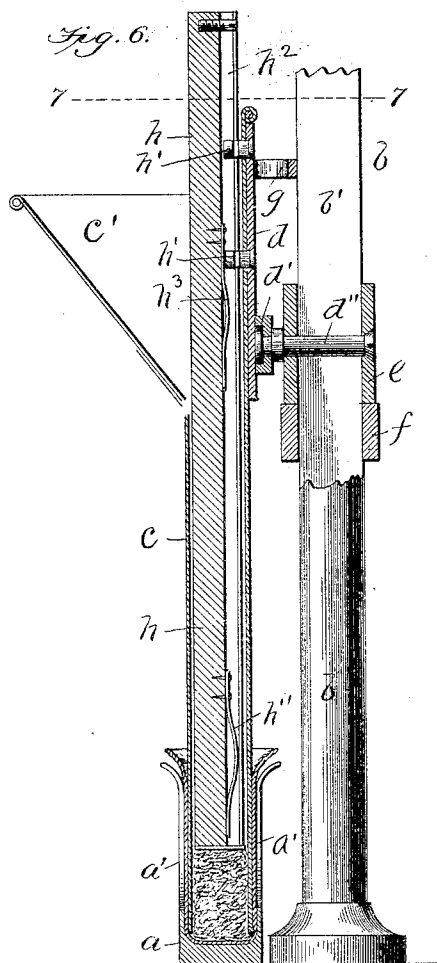
By his Attorneys

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Edwin L. Bradford

Inventor
W. J. Cussen
By his Attorneys
Alexander & Davis

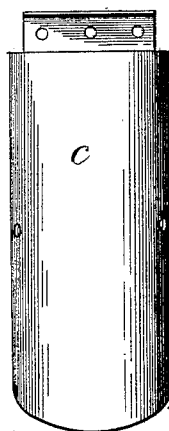
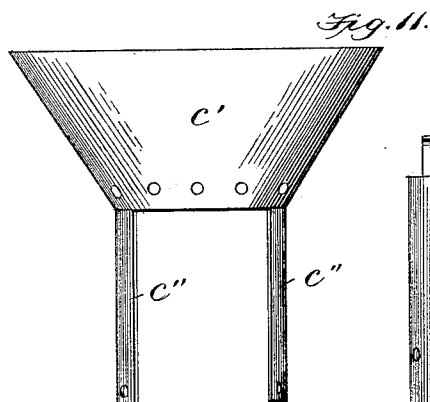
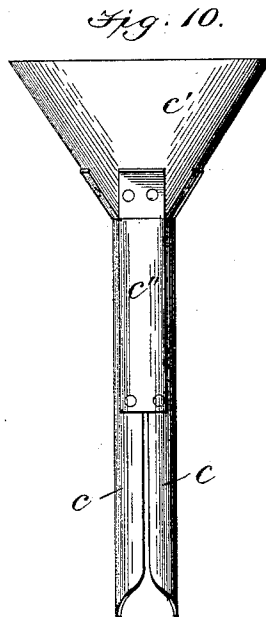
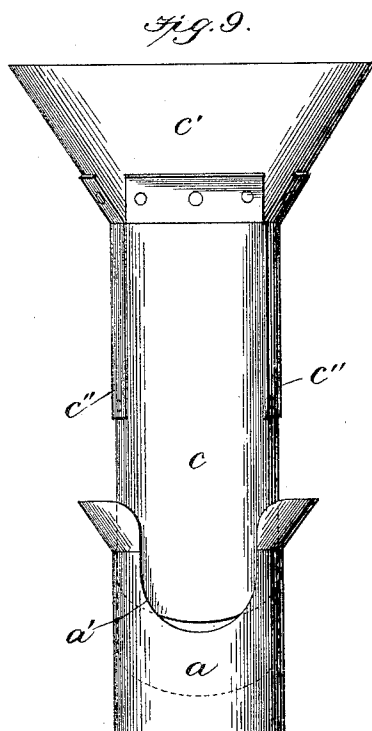
(No Model.)

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Inventor
W. J. Cussen
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Alexander Davis

UNITED STATES PATENT OFFICE.

WILLIAM J. CUSSEN, OF RICHMOND, VIRGINIA, ASSIGNOR OF THREE-FIFTHS
TO M. MILLHISER & CO., OF SAME PLACE.

MACHINE FOR PACKING TOBACCO.

SPECIFICATION forming part of Letters Patent No. 477,186, dated June 14, 1892.

Application filed March 4, 1892. Serial No. 423,765. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM JAMES CUSSEN, a citizen of the United States, residing at Richmond, in the county of Henrico and State of Virginia, have invented certain new and useful Improvements in Machines for Packing Tobacco, &c., of which the following is a specification, reference being had therein to the accompanying drawings, in which—

Figure 1 represents a side elevation of one form of my improved packing-machine; Fig. 2, a rear view thereof; Fig. 3, a rear view of the upper part of the machine, the funnel being inverted for the purpose of placing the bag thereon; Figs. 4 and 5, detail views showing the locking and cam devices; Fig. 6, a vertical sectional view of the machine; Fig. 7, a horizontal section on the line 7 7 of Fig. 6; Fig. 8, a side elevation of another form of the machine, showing different inverting devices; Figs. 9 and 10, detail views of the funnel and mold; and Fig. 11 detail views of the parts of the funnel.

This invention has relation to that class of tobacco-packing machines wherein are employed a stationary mold or cup and a removable funnel and a packing-plunger, the bag to be packed being slipped over the lower end of the funnel and then inserted in the mold and the tobacco being filled into the bag through the funnel and packed firmly therein by the plunger while in the mold and on the funnel, as is well known; and it has for its object to improve the construction of the machine and render it more durable and efficient in operation, as will fully hereinafter appear.

Referring to the annexed drawings by letter, *a* designates a mold of suitable form provided with a slightly-flaring mouth and having openings *a'* in its opposite sides, these openings extending nearly to the bottom of the mold and being nearly the full width of the same, as shown most clearly in Fig. 9. This mold is securely fastened to a table or other suitable support along side the vertical standard *b*, which movably supports the funnel and plunger directly over and in line with the mold. The funnel has its depending tube *c* shaped to exactly fit the mold, this tube be-

ing formed in a peculiar manner. The hopper or flaring mouth *c'* of the funnel is constructed of tin or other metal in the usual manner, and the depending tube is constructed of a pair of similarly-shaped thin steel plates whose unconnected edges are suitably bent and brought close together, and whose upper ends are riveted rigidly to the exterior of the flaring mouth. The unconnected edges of these plates are rigidly connected together above the mold by vertical metal strips *c''*, which cover the openings between the plates, these strips being riveted both to the plates and to the hopper, as shown in Fig. 9, or as shown in Fig. 11, formed integral with the hopper. This construction of mold and funnel is advantageous. The mold being formed with open sides, as shown, the printing or ornamentation on the sides of the bags will not be liable to blur by friction against the interior of the sides of the mold, as is evident, and the removal of the bags from the mold is materially facilitated, inasmuch as the operator will be enabled to readily grasp the bodies of the bags with his fingers. Heretofore the operator had to rely upon the drawstrings of the bags to remove them from the molds; but this method was troublesome, as the bags usually expand and lodge quite tightly in the mold when the funnel is withdrawn. The open sides are also advantageous, for the reason that they facilitate the insertion and withdrawal of the tube of the funnel from the molds and permit the lower ends of the sides of the tube to more readily expand and assume the proper shape under internal pressure. The ends of the separated steel plates of the tube of the funnel are elastic to facilitate the placing of the bags over the open end of the tube, and they are further advantageous in that they are much more durable than the ordinary devices in use, as they are not so liable to indentation and other injury by rough handling. The tube of the funnel being made up of sections riveted together, any one of the sections may be renewed should it become injured. The steel plates of the tube of the funnel may be readily and cheaply formed by dies or rollers the proper size, so that it will be simply necessary to

rivet them together in assembling them. The openings between the edges of the plates extend up to or above the point where the tops of the bags or the mold reach when placed.

5 The rear side of the flaring mouth of the suspended funnel is preferably flattened and has riveted to it a strengthening-plate d , which has secured to it near its lower edge a plate or cam d' , carrying a rearwardly-extending pivotal pin d'' . This pin d'' is journaled in a sliding sleeve e on the standard and extends entirely through the sleeve and works through a vertical slot b' in the standard. The sleeve carries the funnel as it is moved up and
10 down on the standard, and it is prevented from turning on the standard by the pin d'' , extending through or into the slot in the latter. The sleeve is also guided by a spring-actuated pawl e' , pivoted between ears e'' on one side of the sleeve and having its upper end extending through a hole in the sleeve and entering a vertical groove b'' in the standard. The upper end of this pawl works in the groove b'' as the sleeve is slid along
20 the standard, and when the sleeve is raised to the upper end of the standard the end of the pawl automatically drops into the hole b^2 in the standard at the upper end of the groove, and thereby locks the sleeve and
25 funnel in an elevated position. The upper end of the pawl is provided with a forwardly-extending pin e^2 , which automatically engages the rounded and notched end of the cam-plate d' , when the funnel is turned over
30 on its pivot, as more fully hereinafter appears.

An adjustable stop-collar f is secured on the standard below the sleeve to limit its downward movement, so that the lower end of the tube will not be injured in entering
40 the mold.

A spring-catch g is secured on the rear side of the funnel and adapted to automatically grasp the standard as the funnel is swung into either of its positions. The plunger h
45 passes down through the funnel in the usual manner and may be operated by hand or by suitable machinery. The plunger or packer is secured within the funnel, so as to turn with the same, by means of a T pin or pins
50 h' , projecting from the interior of the rear side of the funnel and working in a vertical T-slot in the rear side of the plunger, the ends of the slot being closed to prevent the plunger becoming detached. To hold the plunger
55 either in its raised or lowered position, springs h^3 h'' or other suitable devices are secured in the slot, the spring h^3 being secured near the upper end and the one h'' near the lower end. These springs press outwardly with sufficient
60 force to engage the pins and support the plunger up out of the tube of the funnel or hold it therein, as may be desired.

In operation the bag is slipped on the end of the tube of the funnel in the usual manner
65 over the paper or tin-foil wrapped thereon, if the same be used. To facilitate the placing the bag upon the tube, the sleeve is raised to

the upper end of the standard, and the funnel is then swung around to an inverted position, as shown in Fig. 3, it being caught and
70 held in this position by the spring-catch g , which automatically springs over and embraces the adjacent side of the standard at a point below the pivot. In this position the bag may be readily slipped over the end of
75 the tube by the operator. The plunger is held in position in the tube of the funnel by the spring h^3 in the upper end of the slot, so that the plunger rotates with the funnel. When the bag has been adjusted by the op-
80 erator, he simply presses the inverted-tube end of the funnel to one side (in the direction of the arrows in Fig. 3) far enough to disengage the catch g from the standard, where-
85 upon the funnel by gravity alone swings around to the proper position for entering the mold, which of course is secured directly in line with it, the catch g automatically engaging the standard above the pivot and serving to hold the funnel in line with and guide it into
90 the mold. As the funnel thus swings around to its normal position the rounded end d^2 of the cam automatically engages the pin e^2 and forces the pawl out of engagement with the hole b^2 and permits the sleeve and attached
95 funnel to run down the standard by gravity, the latter entering the mold and the stop f on the standard properly limiting the fall of the parts. The funnel is prevented from swinging too far by the catch g engaging the standard, as
100 before described. The plunger is then raised out of the tube and supported temporarily within the mouth of the funnel by the lower spring h'' engaging one of the pins h' , where-
105 upon the operator introduces the required amount of tobacco into the funnel, which is pressed into the bag in the usual manner by the plunger. The funnel and plunger are then lifted out of the bag and the same is tied in the usual manner, the operator finally re-
110 moving the packed and tied bag from the mold. The operator then inverts the funnel and plunger and repeats the operation described to pack each bag, as is evident.

To prevent the funnel being swung in the
115 wrong direction in inverting it, the cam d is provided with a lip d^3 , which engages under the pin e^2 when the funnel is in its normal position, as shown most clearly in Figs. 1, 2, and 4.
120

The advantages of such a machine are obvious. The funnel, being readily invertible, enables the operator to more quickly place the bag over the same, as it will be held up before him in a more convenient position.
125 The greatest delay in using that class of old devices where the funnel and plunger were disconnected was caused by the time required to pick up the funnel and plunger from the table and wrap the paper or foil around the
130 funnel and then put the bag on; but this delay is remedied in the present machine. The most important advantage, however, is the fact that the funnel and plunger are sus-

pended upon a standard over a mold and connected together, whereby they will not become separated and misplaced by being thrown around loosely on the operating-table, as is the case with the ordinary devices now generally employed. Other advantages arise from so mounting the funnel and plunger upon the standard that they automatically swing around and run down into the mold after the bag is put in place on the tube, as is evident, the principal one of which is that the operator may utilize that interval in weighing the required amount of tobacco to place in the funnel.

I desire it understood that this invention is not confined to the specific construction shown and described, as it will be observed the same may be readily varied by a skilled mechanic without departing from the spirit of the invention in the least. For instance, instead of the funnel and mold described the funnel and mold of ordinary construction may be employed, and in lieu of the springs shown other suitable devices may be employed to hold the plunger in or out of the tube, and other suitable devices may be employed to guide and hold the funnel in its two positions, and, as shown in Fig. 8, the funnel and plunger may be inverted in other ways besides the preferred construction described. In this view the standard is slotted vertically and has its upper end b^3 bent over backward and turned downwardly, and the funnel carries brackets provided with small rollers k , embracing and bearing upon opposite sides of the standard, one of the brackets extending through the slot in the standard, as shown. In this form of machine, to invert the funnel it is simply raised and thrown over backward, as shown, the long bracket resting in the end of the slot and serving to support the funnel in its inverted position.

It is obvious that this machine may be employed for packing materials other than tobacco.

Having thus fully described and ascertained the nature of my invention, what I claim is—

1. The combination of a funnel and plunger and a mold a therefor, this mold having its opposite sides open, as at a' , substantially as described.

2. The combination of a mold and funnel and plunger, said funnel consisting of a flaring mouth and a depending tube adapted to enter the mold, this tube being constructed of separated elastic plates, substantially as described.

3. The combination of a mold, a plunger, and a funnel-mouth having a depending tube, said tube consisting of two thin steel plates c , having their upper ends secured to the funnel-mouth and their adjacent edges terminat-

ing close together, and plates connecting their adjacent edges above the top of the mold, substantially as described.

4. In a packing-machine, the combination of a mold, a support, a funnel supported on said support and adapted to enter the mold, a plunger, and means for attaching said funnel to the support, whereby it may be vertically moved and also inverted, substantially as described.

5. In a packing-machine, the combination of a mold, a support, a vertically-movable and invertible funnel thereon, means for vertically and invertibly attaching the funnel to the support, and a plunger supported within and attached to the funnel so as to be invertible and movable therewith, substantially as described.

6. In a packing-machine, the combination of a mold, a standard adjacent thereto, a funnel fitting within the mold, means for vertically-movably attaching the funnel to the standard, a plunger fitted within the funnel, and means for securing the plunger directly to the funnel, but at the same time allow it a limited movement independently of the same, substantially as described.

7. The combination of a mold, a standard, a sliding sleeve on the standard, a funnel pivoted to said sleeve and adapted to be inverted, and a plunger within said funnel, substantially as described.

8. The combination of a standard and a mold, a vertically-movable funnel secured to the standard and provided with an inwardly-projecting pin, and a plunger fitted within the funnel and movable therewith, said plunger being provided with a longitudinal slot in which works said pin on the funnel, whereby the plunger is secured within and to the funnel and has a limited vertical movement independently thereof, substantially as described.

9. The combination of a mold, a standard, a funnel pivotally supported and vertically movable on the standard, and an automatic catch for holding the funnel in its inverted and normal positions, substantially as described.

10. The combination of a mold, a grooved standard, a sliding sleeve on the standard carrying an automatically-working pawl engaging said groove, an invertible funnel connected to the sleeve, and a cam on this funnel, adapted to operate the pawl, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM J. CUSSEN.

Witnesses:

C. D. DAVIS,
E. J. CUSSEN.