3 Sheets--Sheet 1.

H. WINTERWERBER.

Machine for Packing Tobacco.

No. 160,045 Patented Feb. 23, 1875.

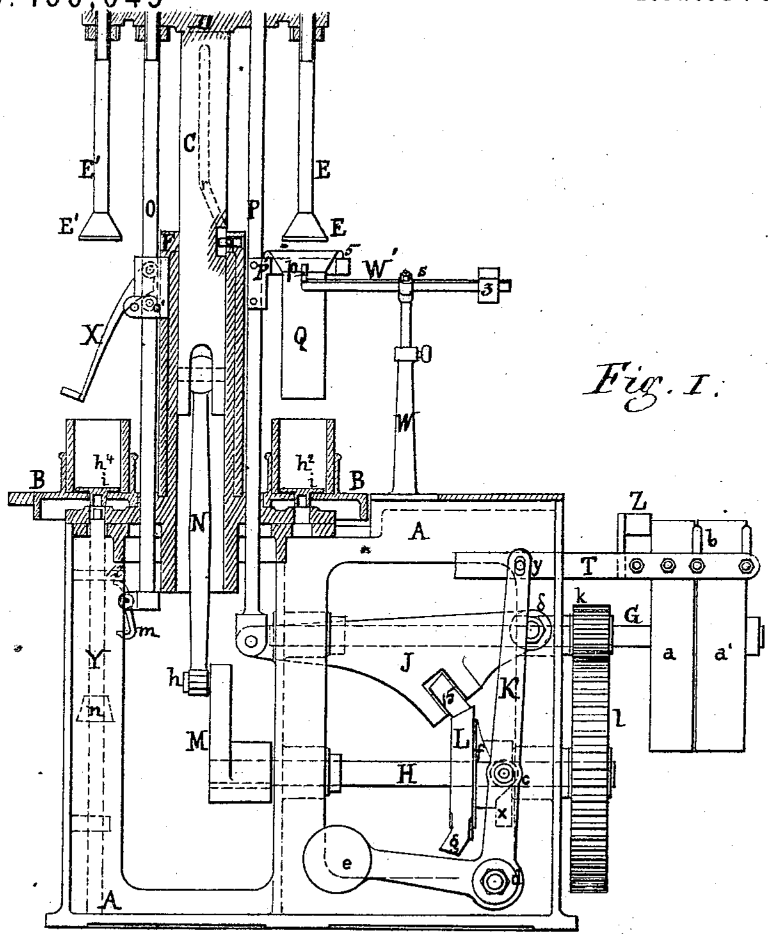
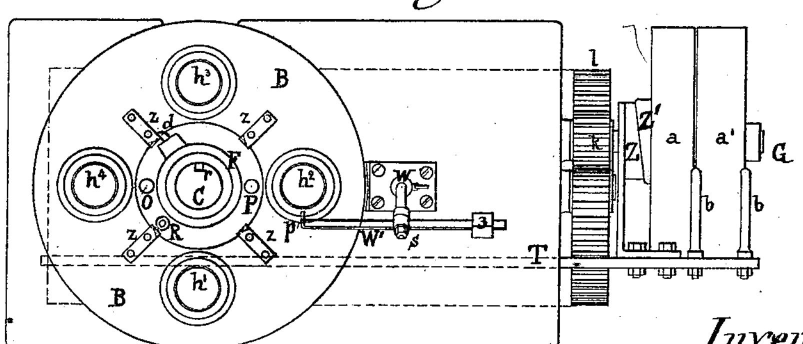


Fig. I.

Fig. II.



Witnesses.
John F. Allen
C. Franke

Inventor.
Henry Winterwerber
per Henry E. Roeder
attorney

THE GRAPHIC CO. PHOTO-LITH. 39 & 41 PARK PLACE, N.Y.

3 Sheets--Sheet 2.

H. WINTERWERBER.

Machine for Packing Tobacco.

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Fig. III.

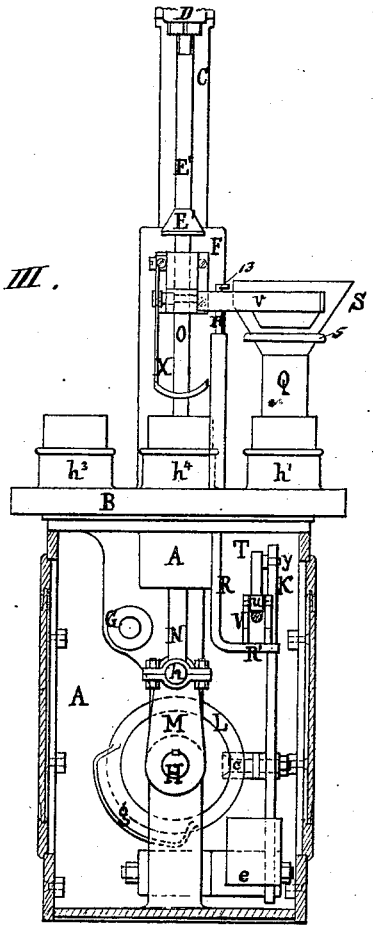
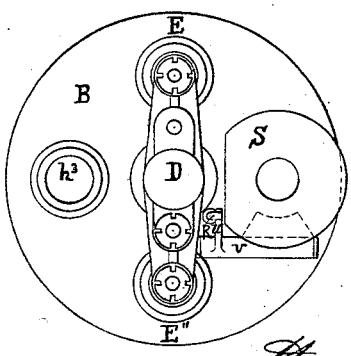


Fig. IV.



Witnesses.

John F. Allen

C. Fennel

Inventor.

Henry Winterwerber

per Henry E. Reeder

attorney

3 Sheets--Sheet 3.

H. WINTERWERBER.

Machine for Packing Tobacco.

No. 160,045. Patented Feb. 23, 1875.

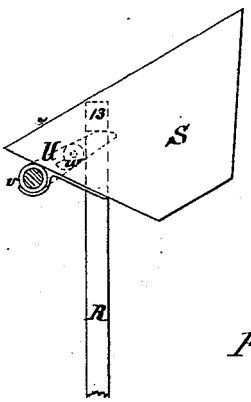


Fig. V.

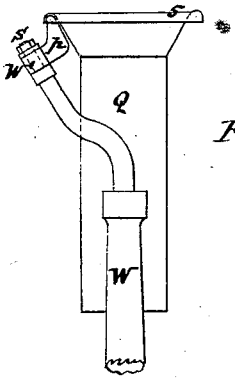


Fig. VI.

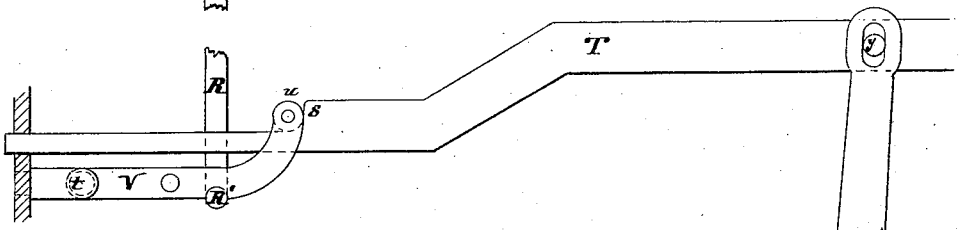


Fig. VII.

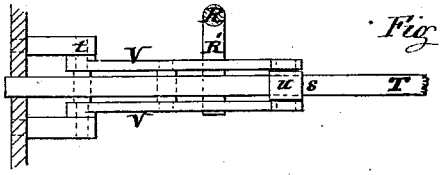
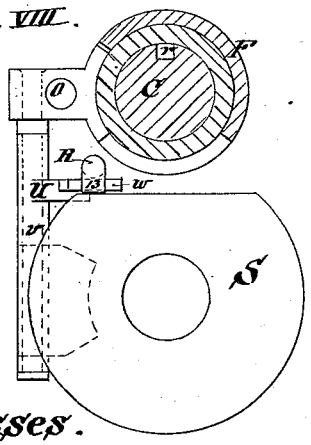
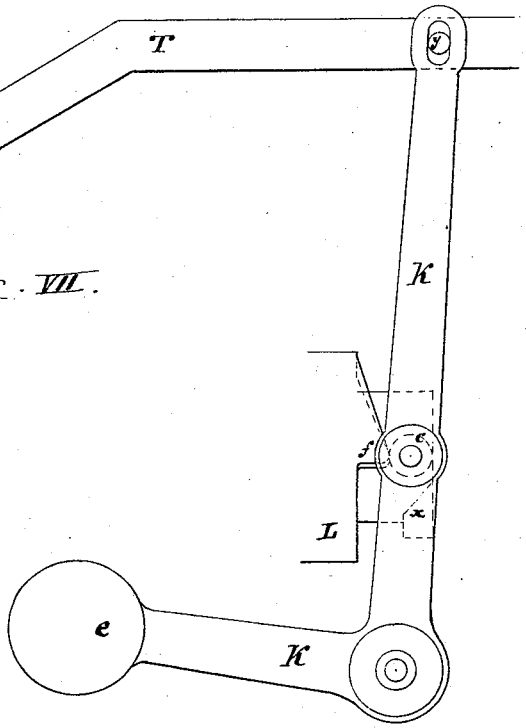


Fig. VIII.





Witnesses.

Chas. Fritsche
E. Schuler

Inventor.

Henry Winterwerber
per Henry E. Roeder
Attorney.

UNITED STATES PATENT OFFICE.

HENRY WINTERWERBER, OF OFFENBACH, GERMANY.

IMPROVEMENT IN MACHINES FOR PACKING TOBACCO.

Specification forming part of Letters Patent No. **160,045**, dated February 23, 1875; application filed March 28, 1873.

To all whom it may concern:

Be it known that I, HENRY WINTERWERBER, of Offenbach, on the Main, in the Grand Duchy of Hesse Darmstadt, Germany, have invented a new and Improved Machine for Packing Tobacco and other Substances, of which the following is a specification:

This packing-machine is especially intended for packing cut tobacco and other substances capable of being packed in a similar manner.

In the accompanying drawings, Figure I represents an elevation of a packing-machine, partly in section, embodying my invention. Fig. II is a top view of the same. Fig. III is a side elevation, partly in section; Fig. IV, a top view of the same. Figs. V, VI, VII, and VIII are detail views referred to in the specification.

Similar letters represent similar parts in all the figures.

A is a cast-iron frame, closed at the sides with boarding, for the purpose of protecting the mechanism. B is a revolving table with four sockets for holding the wooden packing-molds h^1 h^2 h^3 h^4. C is an upright sliding shaft, with a cross-head, D, attached on its upper end, for the purpose of holding, giving motion to, and guiding the ramming-rods E E′ and rods O and P. G is the main driving-shaft, with the fast and loose pulleys *a a′* and pinion *k*, the latter meshing into the wheel *l*, fast to the shaft H. M is a crank fast on the shaft H, with crank-pin *h*, to which the rod N is attached, connected at its other end to the sliding shaft C. Q is a tube of sheet-iron or other suitable material, for filling the empty packets by means of a hopper, S, fitting into the top of said tube, and said hopper is arranged to turn upon its hinge or shaft *v*. (See Figs. III, IV, V, and VIII.) L is a cam-disk, having a cam, *g*, the disk being fastened on the shaft H, and working against a roller, 15, attached to a beam, J, for the purpose of raising said beam J, and with it the rod P, which latter lifts the filling-tube Q out of the packet, as will be hereafter described. This disk L is also provided with projections *f* and *x*, for the purpose of moving the gearing-lever K through its roller *e*, working between the projections *f* and *x*. The lever K is provided with a counterbalance-weight, *e*. O is a rod attached to the cross-head D, which operates the rod Y by means of the hook *m*. This rod O is also provided with a roller, *o′*, acting against a lever, X, hinged to the tube, which guides the sliding rod C. The rod Y acts against the bottom plates *i* in the bottom of the molds h^1 h^2 h^3 h^4, lifting the same, so as to lift the packets out of said molds, and the lever X throws then the finished packets away from the molds. T is the gearing-bar, provided with fork *b b* at its outer end, and having a friction-brake, Z, firmly attached. W is a standard to support the lever W′, whereby the filling-tube Q is swung out of the molds away from the range of the ramming-piston E. This lever W′ turns upon an inclined pivot, *s*, fast to the standard W, and is provided with a hook, *p*, at one end, and a counter-weight, 3, at its other end. The pivot *s* is inclined with its upper end forward from the perpendicular line of the ramming-piston E, in consequence of which the counter-balance 3 has a tendency to descend and turn the lighter hooked end *p* of the lever, in the direction toward the ramming-piston E, where it comes in position to catch under the collar 5 of the filling-tube Q, where it remains until the ramming-piston E has been withdrawn from the tube Q, when the increased weight of said tube upon the hooked end of the lever W′ will counteract the weight 3, and cause the lever W′ to turn with this filling-tube Q away from the rod E. V is a lever turning on a center, *t*, (see Figs. V and VII,) and provided with a roller, *u*, at its forward end, resting upon the gearing-bar T, and acting against a projection, 8, on said gearing-bar T, to lock the same in the required position, as will be hereafter described. R is a rod, with a hooked end, R′, at its lower end to operate the lever V, and a projection or nose, 13, at its upper end, projecting over an arm or lever, U, connected with the hinge *v*, to which the hopper S is attached.

The operation of the machine, for which two operators — the filler and the folder — are required, is as follows: The filler places the paper bag or the empty packet into the mold h^1, and puts the filling-tube Q into the

same, and turns the hopper S into the proper position upon the filling-tube Q. After having filled the packet with the given quantity of tobacco or any other product to be packed, he removes the hopper S by turning the same around the center of its hinge *v*. By this turning of the hopper S motion is given to a lever, U, attached to the hinge *v*, (see Fig. V,) and provided with a self-acting catch, *w*, on its end, which comes in contact with the projection or nose 13 on the top of the rod R, moving thereby said rod upward, and bringing the lower hooked end R′ of said rod in contact with the lever V, so as to lift the same and move the roller *u* clear of the projection 8 on the gearing-bar T. The weight *e* on the lower end of the lever K will then move this lever K, and consequently the gearing-bar T, which is connected with it at *y*, sidewise in such a position that the fork *b b* on the end of the bar T will move the belt from the loose pulley *a′* upon the fast pulley *a*, and put the machine in motion. The sliding rod C, with its cross-head D, which has been in its highest position, is now moved downward through the connecting-rod N, attached to the crank M. A tube, F, surrounding the guide-tube of the sliding rod C, and extending downward to the face of the table B, is then moved one-quarter of a circle around by means of its internal projecting pin *q*, working in the diagonal part of a groove, *r*, made in the surface of the rod C. At the lower end of this tube F a spring-catch, *d*, (see Fig. II,) is arranged, which takes hold of one of the four projections *z* fast to the table B, and consequently moves the table B one-quarter of a circle around, bringing thereby the packet in the mold h^1, which has been filled, together with the filling-tube Q, into the position of the mold marked h^2 in the drawing, under the ramming-piston E. During the further downward motion of the rod C the piston E gives the necessary pressure to the material in the filled packet. This pressure is capable of being regulated by lengthening or shortening the rod E. When the crank M has nearly arrived at its lowest position the flange *g* on the cam L comes in contact with the roller 15 on the lever J, lifting thereby the same, and, consequently, the rod P, attached to the end of said lever. Near the middle of the rod P a fork-piece or arm, P′, is attached, which, during this upward motion of the rod P, takes hold of the rim 5 of the filling-tube Q, lifting the same out of the packet and upon the hooked end *p* of the lever W′. As soon as the rod E has been moved out of the filling-tube Q, said tube will swing upon the lever W′, clear of the rod E, toward the front of the machine, as has been before described, ready to be taken off by the filler, when required, when the weight 3 will move the lever W′ back again into its proper position for the next operation.

By the upward motion of the rod C and cross-head D the rod O is moved upward, when the hook *m*, (see Fig. I,) fast to said rod, takes hold of the projection *n* on the rod Y, whereby the same is moved upward and comes in contact with the loose bottom piece *i* in one of the molds h^1, h^2, h^3, or h^4, situated at the time directly above said rod Y, and pushes thereby this bottom piece, and the packet upon the same, upward out of the mold. The roller *o′* on the rod O comes then in contact with the hinged lever X, operating the same so as to throw this finished packet away from the mold. Near the end of the upward motion of the rod O the hook *m* comes in contact with a projection, 12, on the frame A, whereby this hook *m* is moved away from the projection *n* on the rod Y, allowing thereby said rod Y, together with the bottom piece *i*, to fall down again by their own weight. During the latter part of the upward motion of the rod C the pin *q* on the sleeve F comes again into the diagonal part of the groove *r* in the surface of the rod C, causing thereby the sleeve F to turn one-quarter of a circle back again, whereby the spring-hook *d* will be brought in connection with the next projection *z* on the table B. Near the end of the revolution of the shaft H the projections *f* and *x* on the wheel L will act upon the roller *e* on the lever K, moving the same, and consequently the rod or bar T, sidewise, so as to move the belt from the fast pulley *a* upon the loose pulley *a′*, stopping thereby the further motion of the machine. At the same time the brake Z, fast to the bar T, comes in contact with a corresponding projecting surface, Z′, on the side of the pulley *a*, and insures the sudden stopping of the machine. This motion of the bar T brings the projection 8 on said bar on one side of the roller *u* of the lever V, allowing said roller *u* to fall down against the side of this projection 8, and locking thereby this bar T securely in that position. During this time the filler has placed another bag into the next mold, placed the filling-tube Q into the same, turned the hopper S upon the tube Q, and has filled the packet, and, while turning over the hopper S, starts again the machine in the manner above described, when the operations will be repeated.

By this turning of the table B one-quarter around again the first filled packet, which has received the required pressure, is moved toward the back of the machine in the position of the mold marked h^3, where the second person—"the folder"—folds the ends of the packet over the material and together. By the third operation this pressed and folded packet is moved by the machine in the position of the mold marked h^4, under the pressing-rod E′, and directly over the rod Y. The finished and folded packet is there again pressed, through the action of the rod E′, and then pushed upward by the rod Y, and at last thrown off away from the mold by the action of the lever X, in the manner above described.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The combination of the hopper S, arm U,

rod R, lever V, disengaging-bar T, and weighted arm K, arranged and operating in the manner and for the purpose substantially as set forth.

2. The sliding rod C, with groove *r* in its surface, in combination with the sleeve F, with internal projecting pin *q*, the spring-hook *d*, fast to the lower part of the sleeve F, and the projections *z z z z*, fast to the table B, arranged and operating together substantially in the manner described.

3. The combination of the lever W′, with counter-weight 3 at one end and hook *p* at its other end, the inclined supporting-pin *s*, and the filling-tube Q, rod P, and arm P′, substantially as and for the purpose described.

4. The combination of the sliding rod O, with hook *m*, the rod Y, with projection *n*, the bottom piece *i*, and the projection 12, fast to the frame, arranged and operating together substantially in the manner and for the purpose described.

5. The combination of the lever X, roller *o′*, and sliding rod O, arranged and operating in the manner and for the purpose substantially as specified.

HENRY WINTERWERBER.

Witnesses:
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FERD. CAPITAINE.