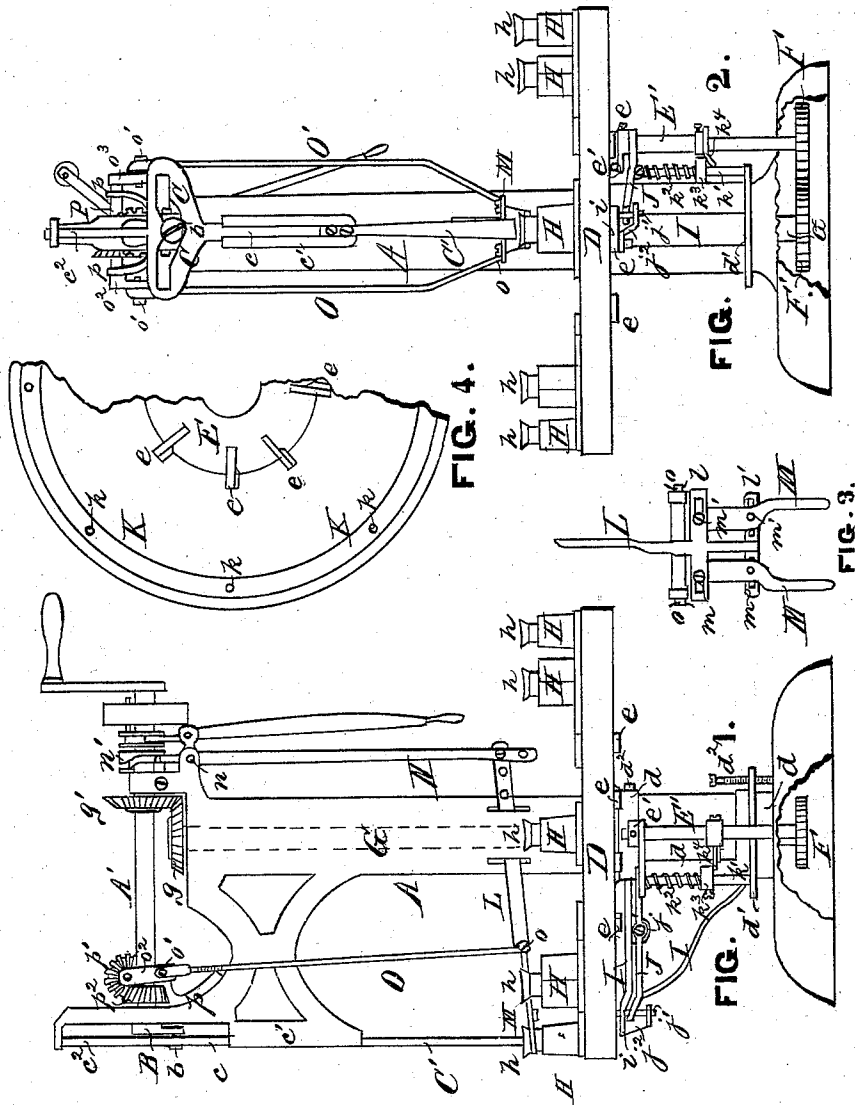


F. J. WITOVEC.
Tobacco Presses.

No. 138,549.

Patented May 6, 1873.



WITNESSES:

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UNITED STATES PATENT OFFICE.

FRANK J. WITOVEC, OF ST. LOUIS, MISSOURI, ASSIGNOR TO HIMSELF AND
JAMES G. BUTLER, OF SAME PLACE.

IMPROVEMENT IN TOBACCO-PRESSES.

Specification forming part of Letters Patent No. **138,549**, dated May 6, 1873; application filed
February 18, 1873.

To all whom it may concern:

Be it known that I, FRANK J. WITOVEC, of the city of St. Louis, county of St. Louis and State of Missouri, have invented a certain Improved Tobacco-Press, of which the following is a specification:

This invention relates to that class of presses for the packing of cut tobacco and granular substances in sacks, &c. This invention relates, firstly, to the arrangement of a crank, operating in a slotted curved cross-head, to impart the required intermittent reciprocating motion to the plunger, by which the tobacco or other material is pressed in proper molds, a funnel-receiver being used, over which the sack is placed. Secondly, to the arrangement of a rotary table carrying a series of molds; to said table a proper intermittent rotary motion is communicated by bevel-gear and shafting-connections with main driving-shaft, and by means of which the molds are consecutively brought under the plunger. Thirdly, to the manner of affording the table a sufficient brace and bearing at the point where the pressing action takes place; and, also, to the arrangement and operation of a catch-lever to engage said table and retain same in stationary position until the release movement takes place. Fourthly, to the arrangement, in combination with the driving-shaft, of a cam and crank attachment and forked arm, so as to operate same at proper intervals to perform the required movements of engaging the funnel, and withdrawing same from the sack after the material is pressed by the plunger. Lastly, to certain detail construction of parts, all of which will now more fully appear.

To enable those herein skilled to make and use my said improvements, I will now more fully describe the same, referring to—

Figure 1 as a side elevation; to Fig. 2 as a front elevation; to Fig. 3 as a detail top plan of forked-arm attachment; to Fig. 4 as a detail bottom plan of table.

The operating parts are mounted on a frame or column of the design shown in Fig. 1.

The construction and arrangement of parts to operate the plunger to do its required work is as follows: A is supporting-column, carry-

ing, in suitable bearings, the main driving shaft A'. On the outer end of shaft A' is keyed a crank, B, the crank-pin *b* of which works in a slotted cross-head, C. (See Fig. 2.) The slot in the cross-head C, as shown, is designed to impart the required vertical intermittent motion to plunger. The reciprocating motion occurring by the action of the crank-pin *b* engaging the horizontal face of the slot, the intermission taking place when said crank-pin engages the curved face of said slot. The cross-head C is guided in its vertical action by the plunger-stem *c* operating in the slides *c*¹ of main frame, and at top by its further extension *c*² operating in the slot top of said main frame. (See Figs. 1 and 2.) To the plunger-stem *c* is properly secured the plunger C'. Thus, by the operation of the main shaft and by means of the crank-attachment aforesaid, there is imparted to the plunger a vertical reciprocating motion to press the material, which done, the intermission occurring allows a lift movement to take place for the withdrawal of funnel, as will hereinafter appear. On the column is arranged a rotary-table, D, its bearing being upon a slotted-sleeve collar, *d*, surrounding the bottom of column. The sleeve *d*, by its flange *d*¹, is adjustably secured by set-screws *d*² to column A, so that the table can be raised or lowered to adjusted position required. (See Fig. 1.) At bottom the table D is provided with a circular plate, E, (see Fig. 4,) having ratchets *e*, relatively positioned. Engaging the ratchets *e* is a wiper, *e*¹, adjustably secured to top of a vertical shaft, E'. The shaft E', near top, is supported in a bearing, (forming part of sleeve *d*,) and at bottom said shaft passes through the base of the main frame. At the lower end of shaft E' is keyed a spur-gear, F, which meshes with a further spur-gear, F', bottom of the vertical shaft G which extends through the column A. (See Figs. 1 and 2.) At top the shaft G is operated by bevel-gears *g g'* by the main driving-shaft A'. From the driving-shaft there is thus imparted to table D, by the action of the wiper *e*¹ engaging the respective ratchets *e*, a rotary intermittent motion. The table D carries a suitable number of molds H. The molds are of ordinary form and sizes,

and otherwise their construction and arrangement is such that they can readily be placed in position on the table and secured or removed from same by the engagement or release of a detent-spring. In the molds H the funnel-receivers *h* are placed. On the outside of the funnels are placed the paper or cloth sacks to be filled, the material to be packed being filled in said funnels. The intermittent rotary movement of the table brings the funnels in order under line with plunger, when said table, remaining stationary, allows the plunger to descend and press the material. To insure a perfect estoppel for the required time to allow the plunger to operate, as well as to form a bearing to support the table at the point where plunger acts there is provided and operating under table the following parts: I represents a brace forming part or attached to the sleeve surrounding column, and extending outward to form a seat at *i* in line with plunger, (see Figs. 1 and 2.) The brace I by its seat *i* thus braces and supports the table to bear the concussions of the plunger in its pressing action. Further, having its fulcrum at *j* on the brace I is a catch-lever, J. The lever J at its outer end is provided with a pin *j*¹, operating through the seat *i* of brace. The operation of the pin *j*¹ is guided by a bracket, *j*², secured to seat *i*. (See Fig. 1.) The object of the pin *j*¹ being to estop the table D, therefore same at bottom is provided with a circular plate, K, having holes *k* relatively positioned. (See Fig. 4.) The pin *j*¹ engages said holes and retains the table in proper position under table. To operate the catch-lever thus by its pin to secure the table D, said lever at its inner end is properly connected to top of a vertical rod, *k*¹, which has its bearings in the sleeve-flange *d*¹. The rod *k*¹ is provided with a coiled spring, *k*², acted upon by an adjustable secured collar, *k*³. (See Figs. 1 and 2. Further, in operative position to collar *k*³ is a wiper, *k*⁴, which is adjustably secured and operated by the shaft E', Figs. 1 and 2. By the rotation of shaft E' the wiper *k*⁴ raises the collar *k*³, and this communicates to catch-lever a vertical motion, by virtue of which its pin *j*¹ engages the table D and secures same in stationary position. When the wiper *k*⁴ ceases to engage the collar *k*³ the catch-lever, by tension of coiled spring, is returned to original position, its pin is out of engagement, and the table D is allowed to repeat its rotary motion. In order to withdraw the funnel from the filled sack after pressing there is arranged a forked arm attachment, as follows: L represents the arm. This is provided with slotted cross-bars *l l'*. (See Fig. 3.) To each side at top of the cross-bars the forks M are adjustably pivoted, as at *m m'*, thus enabling said forks to be adapted to engage any size of funnel used. (See Fig. 3.) The forked arm L is guided in its action by a proper slot through the column A, or either guided at side thereof, but so as to be in line with plunger. To the outer end of forked arm L is adjustably

secured one end of a vibrating beam, N, which has its fulcrum at *n* at side of main frame, and at top said beam engages a cam-groove pulley, *n'*, on driving-shaft A'. (See Fig. 1.) By the action of cam-pulley *n'* the beam N is vibrated to move the forked arm L in and out of engagement with funnel. The proper lift movement is communicated to forked arm L by its further connection to a crank attachment above, as follows: Side rods O O' connect at *o* to forked arm. At top the rods connect adjustably by crank-pins *o*¹ to the respective side-cranks *o*² *o*³, this adjustable connection being to limit the stroke and otherwise regulate the lift movement, as required. Each side-crank *o*² *o*³ is keyed to end of a top shaft, P, which turns in the bearings of a standard, *p*, bolted to or forming part of main frame. Further, the shaft P is provided with a bevel-wheel, *p*¹, which meshes with a bevel-wheel, *p*², on the driving-shaft A'.

The operation of the forked arm attachment comprises, therefore, the essential movements, viz., first, to engage the funnel; next a lifting movement to withdraw same out of sack; and, lastly, a return movement to its original position.

My improved machine is compact, durable, readily operated, effecting the various motions, and performing the required work with precision and regularity.

Having thus described my invention, what I claim, is—

1. The crank B, its pin *b*, slotted cross-head C, plunger-stem *c*, and extension *c*², in combination with driving-shaft A', as and for the purpose set forth.

2. The combination of the table D, sleeve *d*, circular plate E having ratchets *e*, wiper *e*¹, shaft E', spur-gears F F', extension shaft G, bevel-gears *g g'*, driving-shaft A', and column A, operating as and for the purpose set forth.

3. The table D having holes *k*, brace I, sleeve-collar *d*, catch-lever J, its pin *j*¹, bracket *j*², rod *k*¹, spring *k*², collar *k*³, wiper *k*⁴, in combination with shaft E', spur-gears F F', shaft G', bevel-gears *g g'*, main shaft A', and frame A, as and for the purpose specified.

4. The forked arm attachment consisting of the arm L, adjustable forks M, vibrating beam N, cam-groove pulley *n'*, in combination with driving-shaft A', as and for the purpose set forth.

5. The forked arm attachment consisting of arm L, adjustable forks M, vibrating beam N, cam-pulley *n'*, side rods O O', adjustable cranks *o*² *o*³, top shaft P, bevel-wheels *p p'*, in combination with driving-shaft A' and frame A, as and for the purpose set forth.

In testimony of said invention I have hereunto set my hand.

FRANK J. WITOVEC.

Witnesses:

WILLIAM W. HERTHEL,
J. G. BUTLER.