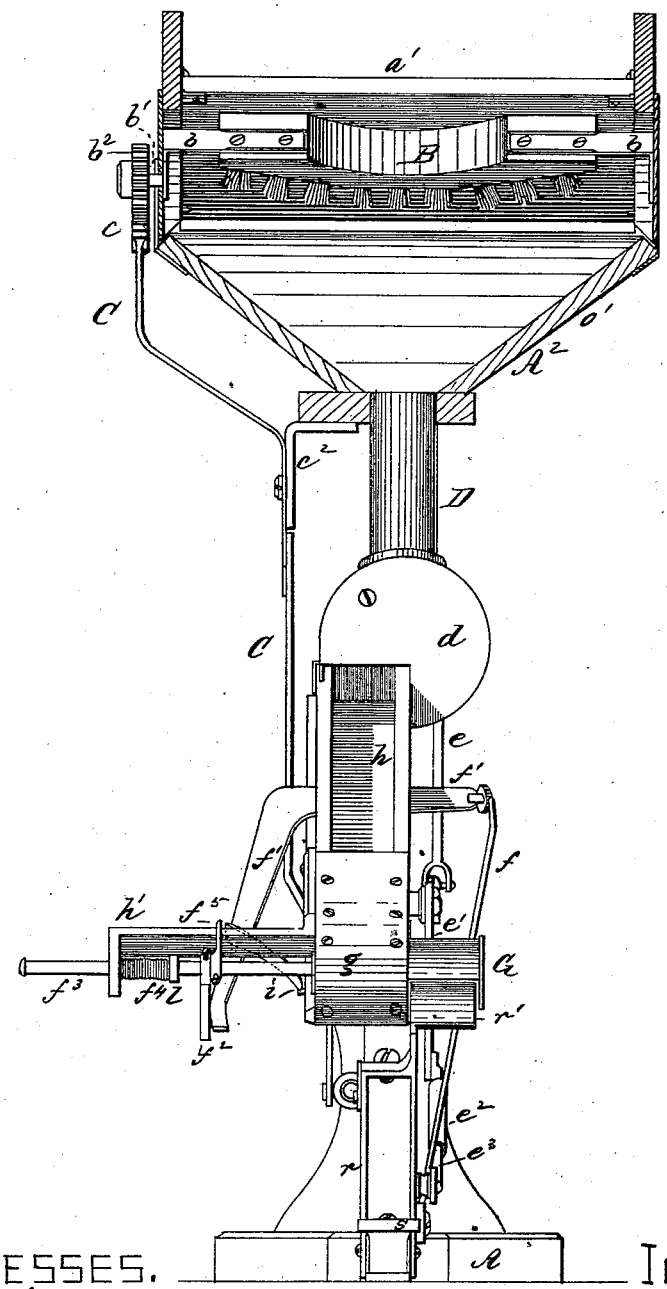
2 Sheets--Sheet 1.

Z. M. LANE.

Machine for Tapering Corks.

No. 162,241. Patented April 20, 1875.

Fig. 1.



Witnesses.
L. H. Latimer,
Wm Pratt.

Inventor.
Zenas M Lane
per Crosby Gregory
Att'ys

2 Sheets--Sheet 2.

Z. M. LANE.

Machine for Tapering Corks.

No. 162,241. Patented April 20, 1875.

Fig. 2.

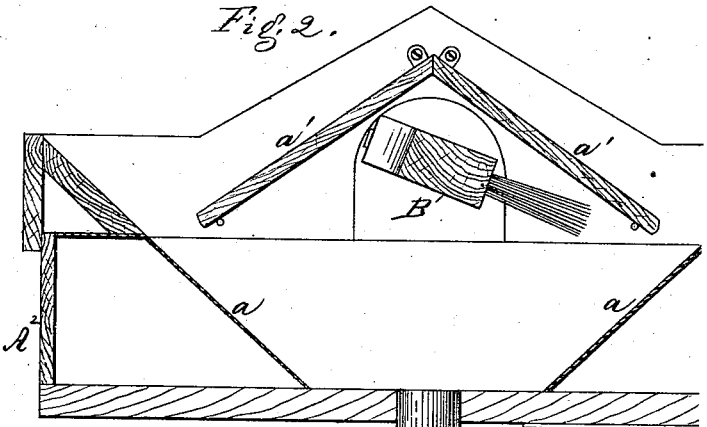


Fig. 4

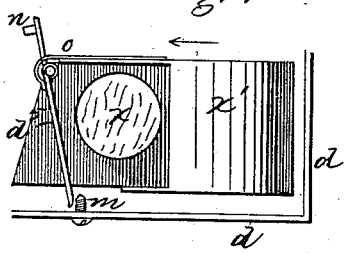
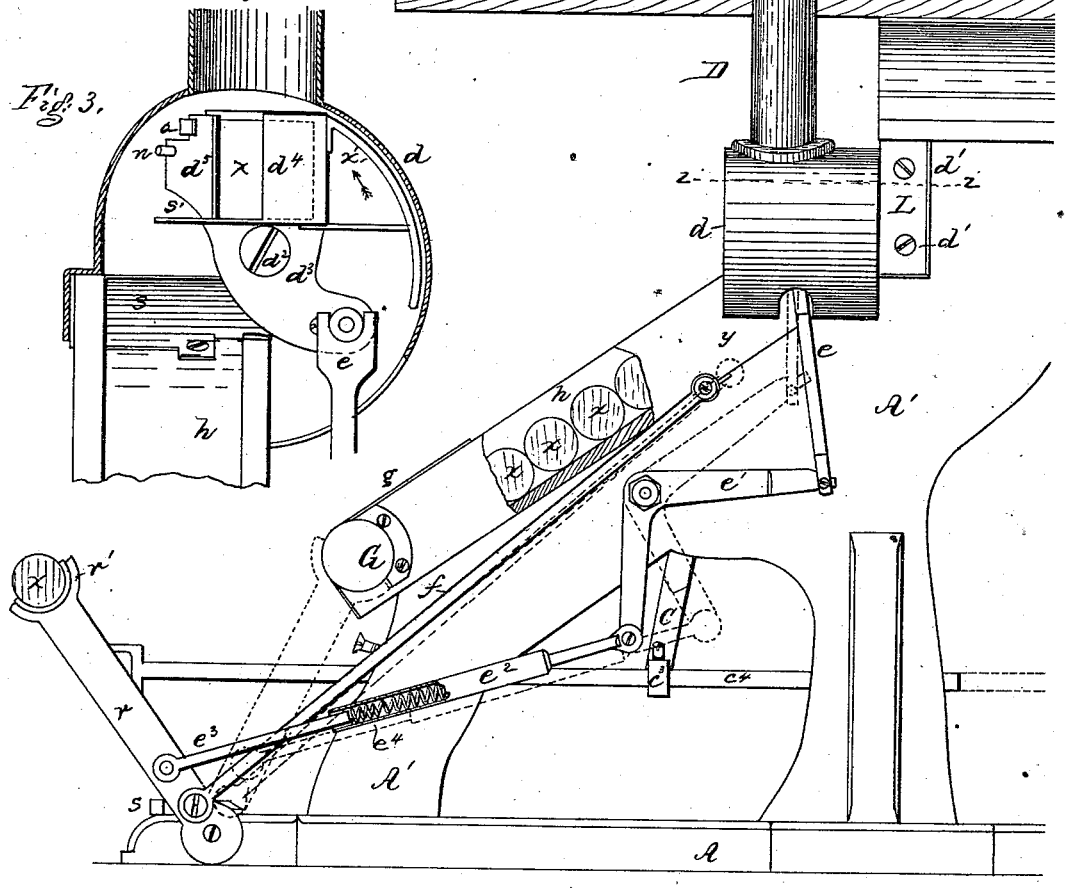


Fig. 3.



L. H. Latimer, Wm. Pratt, } Witnesses.

Inventor. Jonas M. Lane per Crosby & Gregory Atty's.

UNITED STATES PATENT OFFICE.

ZENAS M. LANE, OF ROCKLAND, MASSACHUSETTS.

IMPROVEMENT IN MACHINES FOR TAPERING CORKS.

Specification forming part of Letters Patent No. **162,241**, dated April 20, 1875; application filed February 6, 1875.

To all whom it may concern:

Be it known that I, ZENAS M. LANE, of Rockland, in the county of Plymouth and State of Massachusetts, have invented an Improvement in Machines for Tapering Corks, of which the following is a specification:

My invention relates to an improvement in mechanism for presenting corks automatically to a cork-tapering machine of ordinary construction. The corks are placed in a holder, preferably like a hopper, from which they drop into a box or selector adapted to reverse and deliver a cork into a chute, down which the cork rolls, passing into a chamber through which moves a plunger that ejects the cork from the chamber into the cork-presenter, which carries the cork to the action of the cork-tapering mechanism.

My invention consists in the combination, with a holder for corks, of a box or selector, for receiving, turning, or reversing, and delivering a single cork into a chute; also, in the combination, with the holder for the corks and its discharge-pipe, of a brush for agitating the corks in the holder; also, in the combination, with a cork reversing and delivering box, of an inclined cork-receiving chute; also, in the combination, with the cork-receiving chute, box, and plunger, of a cork-presenter adapted to present the cork to a tapering mechanism.

Figure 1 is a front elevation of my improved mechanism. Fig. 2 is a side elevation thereof, partly in section. Fig. 3 is a section of the apparatus for reversing and delivering the corks to the chute, and taken on the line *y y*, Fig. 2; and Fig. 4 is a section of the same on the line *z z*.

In the drawing, A is the base of the frame of the machine, having a forked standard, A^1, on which is mounted a holder, A^2, for the corks. This holder is made like a hopper, and the corks are sustained by and move down the inclines *o o'*, and pass, one at a time, into the discharge-pipe D, and drop on the bottom *s'* of the box d^4, that turns on its pivot d^2, and reverses a cork, *x*, shown therein in Fig. 3, so that it may roll out of the box d^4, into and down the chute *h*, and into another box, *g*. This cork-reverser is a box-like frame, d^4, pivoted at d^2; it has an arm, d^3, connected by link *e*, with bell-crank lever e^1, connected in turn, by a spring two-part link, e^2 e^3, with the arm of the cork-presenter *r*, having at top a semicircular support, *r'*, into which a cork is moved by a plunger when the cork-presenter is in the position shown in dotted lines in Fig. 2, and then it is moved outward through suitable connections with the cork-tapering mechanism, to the position shown in Fig. 2, in full lines, and in which position the knife operates as usual to taper the cork. I have thought it unnecessary to illustrate the cork-tapering mechanism, as that is of usual construction, and in such machines there is an arm or presenter, as represented by *r r'*, but the corks are placed in the support *r'* by hand. My object is to do this automatically, and my mechanism is operated through links connected with the cork-presenting arm, it being moved in any well-known way. The brush B is mounted on arms *b*, provided with bearings *b'*, (one being shown.) On one of these bearings *b'* is a toothed wheel, b^2, engaged by a toothed segment, *c*, on a vibrating lever, C, pivoted to the bracket c^2 on the frame. The lower end of the lever is slotted or otherwise connected with a collar, preferably adjustable on the horizontally-reciprocating rod c^4, which is supported in bearings in the frame, and is connected with and moved by the cork-presenter *r*, as it is moved. In this way the brush is vibrated so as to move the corks and keep them moving so that they may readily fall into the pipe D. The axis d^2 projects from a bracket, L, secured by screws d^1 d^1. Between the two-part link e^2 e^3 is a spring, e^4; this allows the movement of the cork-presenter *r*, even though a cork should improperly impede the movement of the reversing-box d^4. This box d^4 is incased within a case, *d*, attached to the frame, and the pipe D projects therefrom into the holder A^2. The box d^4 has a hinged side, d^5, provided with a projecting end and pin, *n*, and with a spring, *o*, to keep the side d^5 pressed toward the cork or against a pin or screw, *m*, in the case *d*. When the box is in the position shown in Fig. 4, the hinged side d^5 is kept from contact with the cork *x* by means of the screw *m*, but as the box is turned in the direction of the arrow, Fig. 3, to reverse the cork *x*, the hinged

side d^5, under the action of the spring o, will close on the cork x, and prevent it from passing from the box d^4 until the latter is in the proper position. When the box is reversed, the pin m, on the hinged side d^5, strikes a plate at the top of the chute h. This action turns the hinged side away against the action of the spring, and opens the passage leading out from the box, so that the cork rolls therefrom out on and down the chute, and then the box d^4 is again turned up to receive another cork. When the box is moved to reverse a cork, a curved, projection, x', on the box closes the bottom of the pipe D, and prevents the descent of a cork, until the box d^4 is again turned back to the position shown in Fig. 3. The cork passes down the chute, and rests in the cylindrical box g, Fig. 1. A bracket, h', projecting from the frame A', sustains a plunger or shaft, f^3, one end of which extends into the box g. This shaft has a spring, f^4, that acts to press the plunger into the box and against the cork, to eject it therefrom and into the presenter r', a plate, G, governing the outward movement of the cork. A link, f, connected at one end with the presenter-arm r, is also connected with and moves a pivoted bent lever, f^1, one end of which moves the plunger backward against the stress of the spring f^4, the arm acting against the stud f^2, secured to the plunger. A second stud, f^5, on the plunger, when the latter is moved back, passes beyond the end of a pivoted arm, i, attached to the bracket h', and held in the position shown in Fig. 1 by a spring. This keeps the plunger back out of the box. The arm of the lever f^1, as the presenter is moving toward the chute, strikes the lower end of pivoted arm i, and moves its upper end away, so as to release the stud f^5, and then the spring f^4 throws the plunger forward. The outward movement of the presenter r is regulated by the stop s.

Having described my invention, I claim—

1. The combination, with the chute h, of a box, d^4, for automatically receiving and delivering a cork to the chute, substantially as described.

2. The combination, with the holder A^2 for the corks, of a box, d^4, for receiving and delivering a single cork to a chute, h, substantially as described.

3. The combination of a chute and plunger, f^3, with cork-presenting mechanism $r\ r'$, substantially as described.

4. In combination, a holder, A^2, for the corks, an agitator, B, a pipe, D, and a box, d^4, for receiving and delivering a cork to a chute, h, substantially as described.

5. The combination, with the box d^4 and the pipe D, of the projection x', to close the end of the pipe when the box is moved, substantially as described.

6. The combination, with the box d^4, of the hinged side, adapted to be opened and closed, substantially as described.

7. The combination, with the box d^4, of the links $e\ e^2\ e^3$, lever e^1, and spring e^4, substantially as described.

8. The combination of the plunger f^3 and its spring, with the lever f^1 and pivoted arm, all adapted to operate the plunger, substantially as described.

9. The combination, with box d^4 for selecting a single cork, of a chute, h, a plunger, f^3, to remove the cork from the chute h, and a cork-presenter, $r\ r'$, to receive the cork and present it to a tapering mechanism, all substantially as described.

In testimony whereof, I have signed my name to this specification in the presence of two subscribing witnesses.

ZENAS M. LANE.

Witnesses:

G. W. GREGORY,

S. B. KIDDER.