

E. F. HARRINGTON.  
Cork-Cutting Machine.

No. 219,356.

Patented Sept. 9, 1879.

Fig. 1.

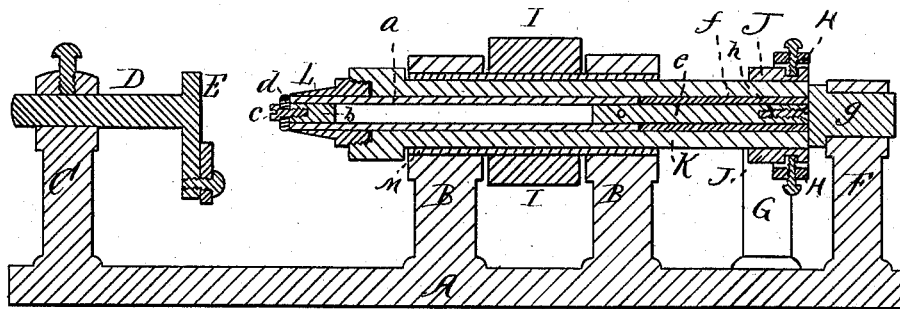


Fig. 2.

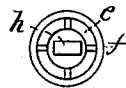
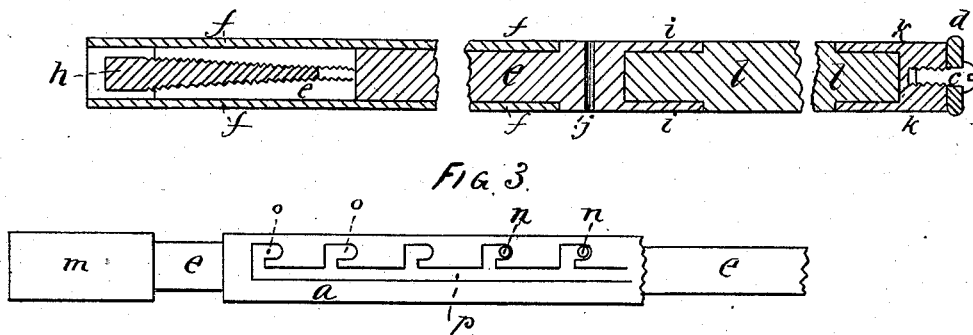


Fig. 3.



WITNESSES.  
Samuel D. Kelley,  
Geo. B. Haskeel.

INVENTOR.  
Edward F. Harrington  
By Porter & Hutchinson  
Attorneys.

# UNITED STATES PATENT OFFICE.

EDWARD F. HARRINGTON, OF BOSTON, MASSACHUSETTS.

## IMPROVEMENT IN CORK-CUTTING MACHINES.

Specification forming part of Letters Patent No. **219,356**, dated September 9, 1879; application filed January 29, 1879.

*To all whom it may concern:*

Be it known that I, EDWARD F. HARRINGTON, of Boston, State of Massachusetts, have invented Improvements in Cork-Cutting Machines, of which the following is a specification.

This invention relates to that class of machines which cut the cork from the block by the action of a rotating tubular cutter, from which the corks are successively expelled by means of a rod within the longitudinal passage through the arbor, to which such cutter is secured, and by which it is rotated; and the invention consists in certain improvements in the expelling-rod and parts coacting therewith, as will be fully explained.

In the accompanying drawings my present improvements are shown in connection with the machine invented by me and described in Letters Patent dated January 20, 1874, and numbered 146,528; but said improvements are applicable to all kinds of cylindrical-cutter cork-machines.

Figure 1 is a longitudinal vertical section taken through the axis of the expelling-rod. Fig. 2 is a similar, but enlarged, section of the expelling-rod, a portion of the middle length being broken away in order to maintain the proper scale, and a portion being shown as if made of wood. Fig. 3 is a plan view of a modification of the adjusting devices of the expelling-rod. Fig. 4 is an end elevation as taken at the left hand of Fig. 2, and showing the longitudinal slots in the rod and the locking-screw.

In these drawings, A is the bed; B B, the standards upon which are the bearings of sleeve M and other rotative parts. C is the standard of the stem D of the adjustable cutting-plate E. F is the standard in which is inserted the removable tail-stop G. G is the standard on which is pivoted the throated lever H, which actuates the sliding arbor K by means of clutch J. L is the tubular cutter, secured in the head on arbor K, and I is the driving-pulley, secured on sleeve M. All these parts being essentially the same as in my said former invention, a more formal description is not deemed necessary, and especially so as the use of my present invention is not limited to use with these precise features of a machine. In my said former invention the expelling-rod

was formed in two lengths, the rotary and non-rotary parts; but in this it is, when in use, essentially one entire rod, revolving with the arbor.

In Fig. 1 the rod is shown formed as follows: *a* is a metallic tube, which, at the left-hand end, is rendered solid by the plug *b*, secured therein. *c* is a screw threaded in plug *b*, and passing through the elastic collar *d*, which closely fills the bore of cutter L, and prevents the escape of dust into the bore of arbor K, which, if permitted, would so clog the expelling-rod as to seriously interfere with its action. At the right-hand end of tube *a* is inserted and rigidly secured the rod *e*. The outer end of this rod is, for a limited distance, subdivided into four sections, as shown in Figs. 2 and 4, and a tapering threaded hole is formed therein for the insertion of screw *h*, as is fully shown in Figs. 2 and 4. A sleeve, *f*, of the same external size as tube *a*, and with a bore fitting to rod *e*, is placed upon the latter, and, by its telescopic movement, is adjusted upon rod *e* at such distance from tube *a* as will give the needed length in any case, and is then secured in position by the turning in of screw *h*, which, expanding the sections of rod *e*, locks the tube *f* in position.

Except for the desired lightness and facility of construction, instead of tube *a*, with the inserted plug *b* and rod *e*, a solid rod of the size of *a*, with a diminished portion, *e*, might be used; or the rod *e* may be formed as shown in Fig. 2, with a socket, *i*, of the diameter of tube *f*, and with a wooden rod, *l*, secured therein, and upon the front end thereof the socketed plug *k*, in which would be threaded the screw *c*, for securing in place the washer *d*.

*g* is a stop, formed with a stem of the size of the expelling-rod, and fitting the hole in standard F, and with a head which, by resisting the end-thrust of the expelling-rod, retains it in the standard, as shown in Fig. 1.

When, after cutting a cork, the arbor K is retracted, the expelling-rod, which will then protrude from the right-hand end of the arbor to the extent of the length of the cork then in the cutter, will, by its contact with stop *g*, expel the cork from the cutter.

When it is desired to adjust the length of the rod, the arbor K is moved forward, when

stop *g* can be removed and the rod retracted through the hole in the standard, when, by inserting a pin in hole *j* in the rod to hold it from rotation, and by the use of a suitable key applied to screw *h*, the latter is slackened, when the rod is duly adjusted in length, and, by the action of the screw, again locked.

By thus forming the rod it is adjustable in length, yet practically of one piece, and revolves in its entire length coincident with the arbor, thereby obviating the very objectionable friction which resulted from a non-rotative rod or portion thereof.

In Fig. 3 the tube *a*, instead of having the rod *e* rigidly secured therein, has the slot *p* cut through its shell near the rear end, and the offsets *o o*, communicating with the slot. The rod *e* is provided with a head, *m*, to fit the bore of the arbor *K*, and has one or more pins, *n*, inserted in it and projecting to the outside of the tube. By turning and sliding the rod these pins may be disengaged from the offsets, so as to move in the slot, when the rod may be adjusted in length with a degree of precision according to the length of the spaces between said offsets.

I claim as my invention—

1. In a cork-cutting machine, and in combination with the expelling-rod and rotary tubular cutter, the elastic collar *d*, constructed, combined, and arranged to prevent the escape of dust into the axial passage of the arbor, substantially as described and shown.

2. In a rotary cork-cutting machine, the combination, with an expelling-rod telescopically adjustable, and provided with a locking device contained within the periphery of its own body, and arranged to be coincidently rotated with the arbor, within which it is operative, of the standard *F*, having a passage through its head axially coincident with and equal in its diameter to that of the expelling-rod, and the removable stop *g*, formed with a stem loosely fitting such passage, and with a head to shoulder against the standard, and to receive and arrest the lineal movement of the rod, all substantially as specified.

3. In a cork-cutting machine, an expelling-rod having the part *d*, with its diminished part *e*, and the tube *f*, fitting thereon, and lineally adjustable in relation to each other, and provided with a locking device contained and operative within the cylindrical body of such rod, to lock said parts in fixed relative positions when so adjusted, substantially as specified.

4. An expelling-rod of a cork-cutting machine, formed with the rod *a* and the reduced part *e*, the adjustable tube *f*, and the tapering locking-screw *h*, threaded in the longitudinally-divided part *e*, substantially as specified.

EDWARD F. HARRINGTON.

Witnesses:

T. W. PORTER,  
GEO. B. HASKELL.