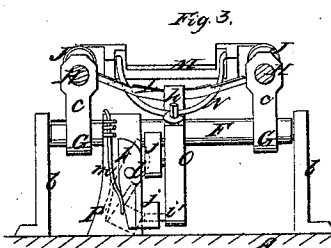
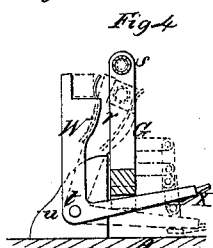
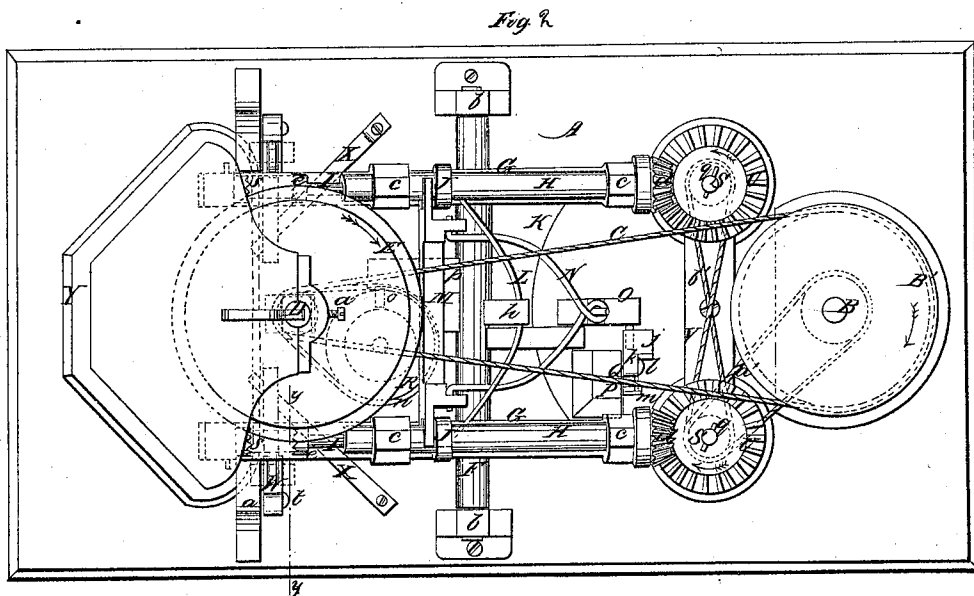
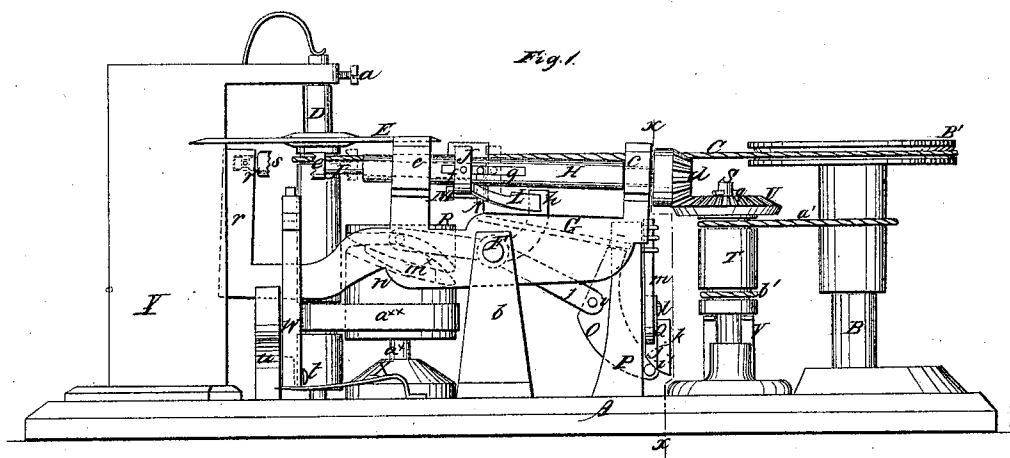


J. D. Crocker,
Cork Machine.

N^o 34,741.

Patented Mar. 25, 1862.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN DENISON CROCKER, OF NORWICH, CONNECTICUT.

MACHINE FOR CUTTING CORKS FOR STOPPERS.

Specification forming part of Letters Patent No. 34,741, dated March 25, 1862.

To all whom it may concern:

Be it known that I, JOHN DENISON CROCKER, of Norwich, in the county of New London and State of Connecticut, have invented a new and Improved Machine for Cutting Corks for Stoppers; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1 is a side view of my invention; Fig. 2, a plan or top view of the same; Figs. 3 and 4, sections of the same, taken, respectively, in the lines *x x y y*, Figs. 1 and 2.

Similar letters of reference indicate corresponding parts in the several figures.

The object of this invention is to obtain a machine for cutting corks for stoppers which will perform the work rapidly and be capable of being readily adjusted, so as to cut the corks of cylindrical or taper form, as may be desired, and of any required degree of taper and size.

The invention has also for its object a simple and automatically-operating means for clamping and holding the corks to be cut.

To these ends the invention consists in the employment or use of a tilting frame or arms provided with one or more arbors which are rotated or thrown in and out of gear by the tilting movement of the frame, the latter being operated by the cutter-shaft, and the arbor or arbors provided with clamps or holders, which are also operated by the tilting of the arbor-frame, the above parts being also used in connection with feeders, also self-operating, and a rotating circular cutter, all arranged substantially as hereinafter fully shown and described.

To enable those skilled in the art to fully understand and construct my invention, I will proceed to describe it.

A represents a base or platform on which the machine rests, and B is a vertical shaft placed on said base and having a pulley B' on its upper end, around which a belt C passes, said belt also passing around a vertical shaft D, on which a circular cutter E is placed. This cutter has a smooth knife-edge, the basil being on its upper surface, and the shaft D may be adjusted at its upper end by a set-screw *a*, so as to give it a vertical or a slightly-inclined position, as may be desired.

On the base or platform A there are placed

two standards *b b*, the upper parts of which receive the journals of a horizontal shaft F. On the shaft F there are secured two arms G G, each of which is provided with two up-rights *c c*, which form the bearings of an arbor H. The arbors H H are allowed to turn freely in their bearings, and at their back ends they are each provided with a pinion *d*.

The front parts of the arbors H H are of tubular form, and in the front part of each arbor there is placed a spindle I, the outer end of which is provided with a button *e*, serrated or toothed at its face side. Each arbor H has a band or ring J fitted on it, and these bands or rings are connected to the spindles I by pins *f*, which pass through oblong slots *g* in the arbors, as shown in Fig. 1.

The shaft F has a plate K projecting laterally from it, and on this plate an upright *h* is attached, which has a spring L at its upper end, said spring being of semi-elliptic form and having its ends bearing against the bands or rings J on the arbors H H. The spring L has a tendency to keep the spindles I thrown out from the arbors H to their full extent.

M is a slide the ends of which are fitted on the arbors H H. This slide is connected by a bail-shaped rod N with the upper end of a lever O, the fulcrum-pin *i* of which passes through an arm *j*, attached to the under side of the plate K. The lower end of the lever O has a pin *i'* projecting laterally from it, as shown clearly in Fig. 3.

P is an upright attached to the base or platform A at a point about in line with the back ends of the arms G G. This upright P has a catch Q attached to it, said catch being simply a shoulder *j* formed at the lower end of a bar *k*, which is secured to the upright P by a pin *l*, the bar *k* having a spring *m* bearing against its lower end, which spring has a tendency to keep the shoulder *j* toward the lower part of the lever O. The back part of the shoulder *j* is rounded, as shown clearly in Fig. 1.

On a vertical shaft *a^x* there is placed a cam R, which is formed by a serpentine groove *m^x* in the periphery of a pulley *n*. Into the groove *m^x* of this pulley a pin *o* fits, said pin projecting laterally from an arm *p*, attached to the shaft F. The cam R is driven by a belt *a^{xx}* from shaft D.

S S are two upright stationary shafts attached to the base or platform A, one just

back of each arm G. On each of these uprights there is placed a loose drum T, having a bevel-wheel U at its upper end. The drums T T rest on the ends of a spring V, which has a tendency to keep them elevated against pins q q , which pass through the upper parts of the uprights. A series of holes may be made in these uprights, through any of which the pins q may pass, and the height of the wheel U therefore regulated as desired.

The front parts of the arms G G are curved or bent upward, as shown clearly in Fig. 1, and in the upper ends of the parts r there are placed loosely small spindles r^x , which have buttons s at their outer ends, said buttons being serrated and facing the serrated buttons e of the spindles I in the arbors H H.

W is a bent lever which has its fulcrum-pin t passing through an upright u on the base or platform A. The lower part of the lever W extends underneath the front part of the arm G, which adjoins it, and a spring X, which is attached to the base or platform A, bears against the lower part of the lever W and has a tendency to keep the upper end of said lever out from the spindles I r^x of the arm G aforesaid. A lever W is applied to each arm G.

Y is a case, which serves as a guard for the cutter E.

The operation of the machine is as follows: The slabs of cork are cut or sawed into small blocks of rectangular form and of a size that will admit of the cork stoppers being cut of the required dimensions. The shaft B is rotated by any convenient power, and the drums T T are rotated from the shaft B by belts a' b' , and the cutter E is rotated by the belt C. The arms G G as the cutter-shaft D rotates are worked up and down by means of the cam R. As the front ends of the arms G G approach the lowest point of their movement the spindles I I are drawn back within the arbors H H, on account of the pin i' of the lever O catching behind the shoulder j of the bar k , and the front ends of the arms G G in their descent press down the lower parts of the levers W and throw their upper parts toward the spindles I r^x . On the upper parts of these levers W the corks to be cut are placed, and said corks by this movement of the levers are fed between the buttons e s of the spindles I r^x , and at that moment the pin i' of the lever O passes above the shoulder j of the bar k and the spring L is allowed to throw the spindles I I out from the arbors H H, so that the corks will be grasped firmly between the spindles I r^x . The front ends of the arms G G then rise under the action of the cam R, and just before the corks come in contact with the cutter E the pinions d engage with the wheels U U and the arbors H H are rotated, and the cutter E will cut them in conical form, the conical shape being due to the inclina-

tion of the arms G G. Any desired degree of taper may be given the cut corks or stoppers by inclining the cutter-shaft D more or less through the medium of the screw a . As the front ends of the arms G G rise, the springs X X throw up the lower parts of the levers W W, and the upper ends of said levers are thrown back from the spindle I r^x , and when the arms G G reach the highest point of their movement and the corks are fully turned the front ends of the arms G G begin to descend and the pinions d d leave the wheels U U, the rotation of the arbors H H ceasing, and the spindles I I are drawn back within the arbors H, so that the cut corks or stoppers are allowed to drop from between the spindles I r^x , and the latter consequently may receive other corks to be turned. As the front ends of the arms G G rise, the pin i' of the lever O forces outward the shoulder j of the bar k , so that the pin may pass behind it. (See Fig. 3, in which the outward position of the shoulder j is shown in red.)

Corks may be cut of different sizes by raising the shaft D of the cutter E to the desired point, the step of the shaft being adjustable, and adjusting the wheels U U on their shafts S S so that the pinions d may gear into them at the proper time.

From the above description it will be seen that the several parts of the machine all work automatically from the driving-shaft B, all that is required being attendants to feed the corks to the shoulders I r^x , and this may be done by children.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The tilting arms G G, one or more, provided with the spindles r^x and arranged in relation with the rotating cutter E, in connection with the rotary arbors H, one or more, also placed on the arms G G and provided with the spindles I, as and for the purpose set forth.

2. Operating or sliding the spindles I so that they may grasp and release the corks at the proper time by means of the bands or rings J J, slide M, spring N, lever O, and the shoulder j , attached to the bar k , as herein set forth.

3. Rotating the arbors H H through the medium of the adjustable wheels U U on the shafts S S and the pinions d d on the arbors H H, arranged, as shown, so that the arbors H H may be rotated, as described.

4. The levers W, when used in combination and arranged in relation with the arms G G, as shown, to operate as feeders, as set forth.

JOHN DENISON CROCKER.

Witnesses:

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SOLOMON LUCAS.