(No Model.) 2 Sheets—Sheet 1.

G. W. ROBINSON.

CORK CUTTING MACHINE.

No. 457,671. Patented Aug. 11, 1891.

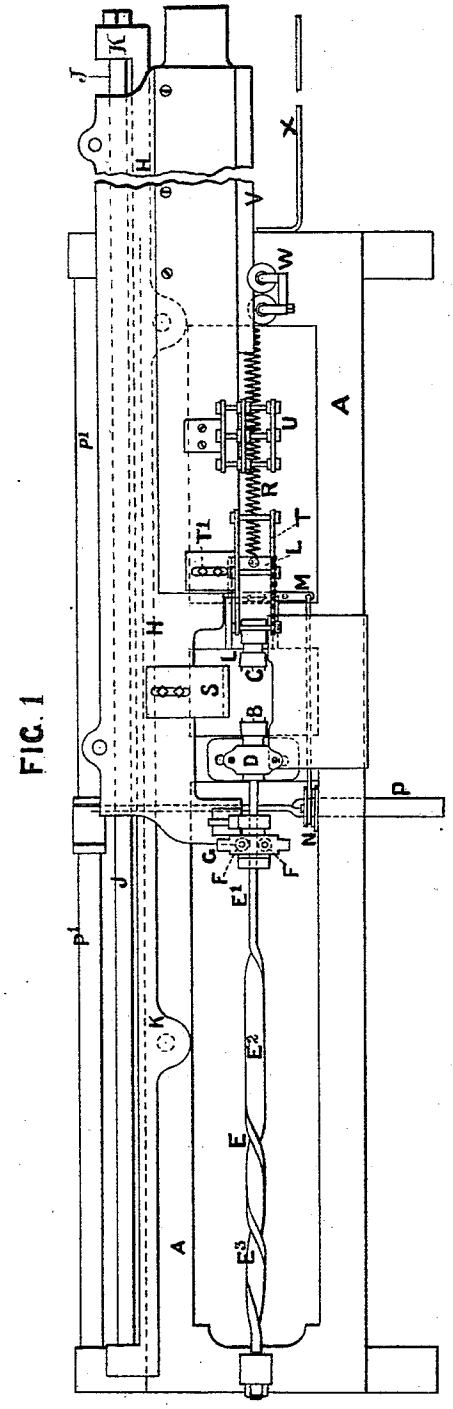


FIG. 1.

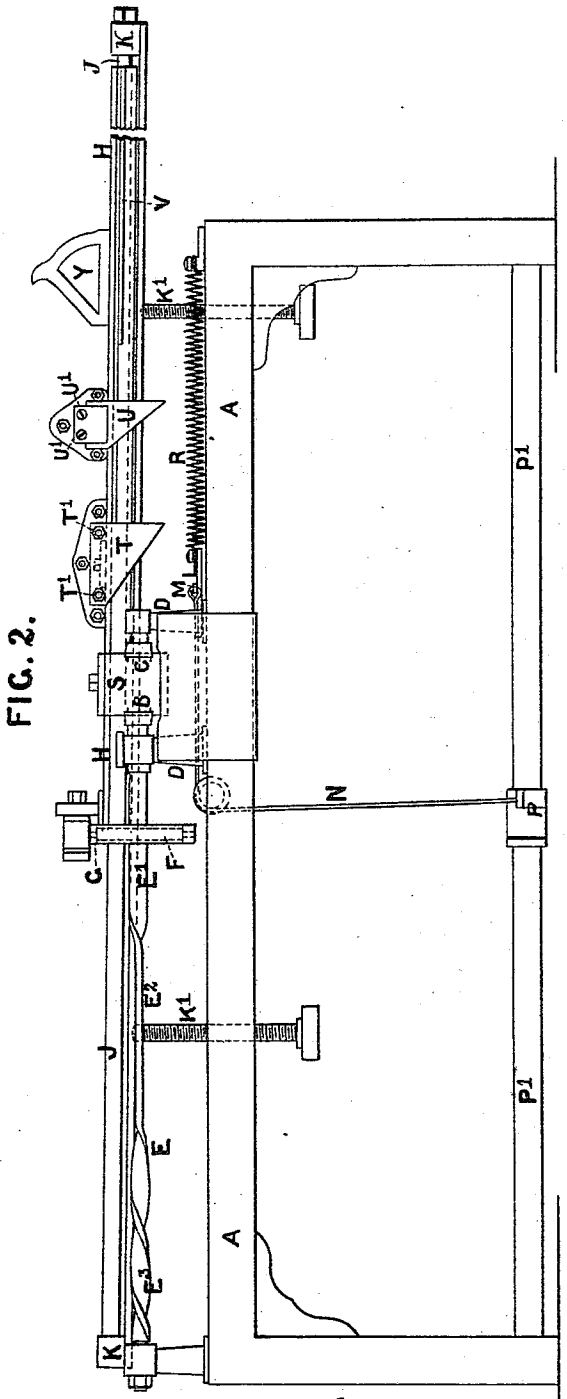


FIG. 2.

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(No Model.) 2 Sheets—Sheet 2.

G. W. ROBINSON.

CORK CUTTING MACHINE.

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FIG. 2a.

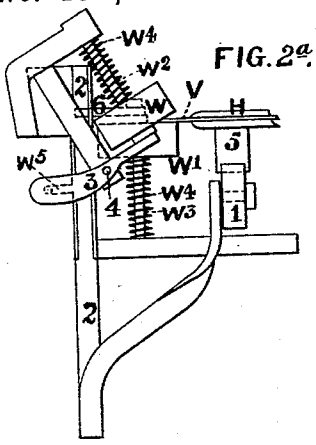


FIG. 5.

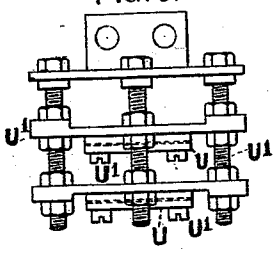


FIG. 6.

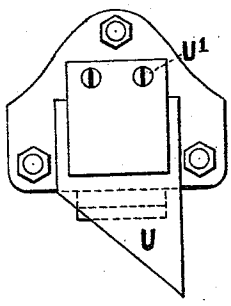


FIG. 3.

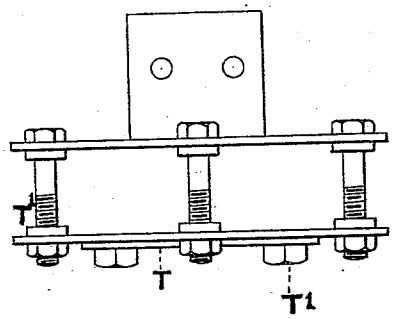


FIG. 7.

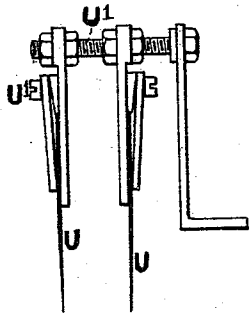


FIG. 4.

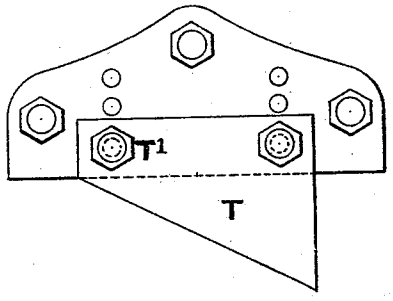
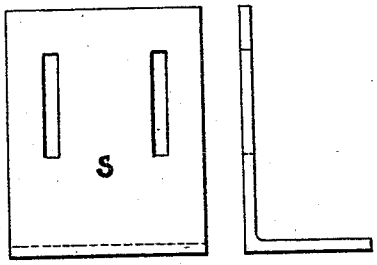


FIG. 8. FIG. 9.



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UNITED STATES PATENT OFFICE.

GEORGE W. ROBINSON, OF PORTALEGRE, PORTUGAL.

CORK-CUTTING MACHINE.

SPECIFICATION forming part of Letters Patent No. 457,671, dated August 11, 1891.

Application filed July 26, 1890. Serial No. 360,117. (No model.)

To all whom it may concern:

Be it known that I, GEORGE WHEELHOUSE ROBINSON, a subject of the Queen of Great Britain, residing at Portalegre, in the Kingdom of Portugal, have invented new and useful Improvements in Cork-Cutting Machines, of which the following is a specification.

This invention relates to machines for making cork-stoppers for bottles, and has for its object to provide novel means for cutting the cork-blank, squaring and rounding the same, and removing the corners. To accomplish this object, my invention involves the features of construction, the combination or arrangement of devices, and the principles of operation hereinafter described and claimed, reference being made to the accompanying drawings, in which—

Figure 1 is a plan view of a cork-cutting machine embodying my invention. Fig. 2 is a front side elevation of the same. Fig. 2^A is a detail elevation of the devices for sharpening the cornering or rounding knife. Fig. 3 is a detail top plan view of the quartering-knife and its support. Fig. 4 is a detail side elevation of the same. Fig. 5 is a detail top plan view of the quartering-knives. Fig. 6 is a detail side elevation of the same. Fig. 7 is an edge view of the same. Fig. 8 is a detail side view of the gage. Fig. 9 is a detail edge view of the same.

In order to enable those skilled in the art to make and use my invention, I will now describe the same in detail, referring to the drawings, wherein—

The letter A indicates a suitable main frame having standards or pedestals D, supporting the chucks or rosettes B C, which hold the cork-block while it is operated upon. To the chuck or rosette B is connected a spirally-shaped bar E, which passes between runners or rollers F, mounted in brackets G, attached to slide H. A slide H is mounted in bearings upon a guide-shaft J, which is carried by a vertically-adjustable frame K, adjustable by means of set-screws K′, which raise or lower one or other end of the frame K, according to the shape of the cork required.

The spiral bar E is so formed as to have the part marked E′ flat for giving the required motion for quartering purposes, the part marked E^2 twists for squaring purposes, and the part marked E^3 has several quick twists in it for taking off the corners or for rounding purposes.

Upon the frame A is fixed a slide or carriage L, attached to the rosette C and operated by the lever M, connected by cord and pulley N to a treadle P, mounted upon a treadle-shaft P′, a spring R returning the carriage.

Mounted upon the slide H is a gage S for regulating the thickness or width of the cork to be operated upon. T is the quartering-knife fixed to the slide H and adjustable by means of the set-screws or studs T′.

U are the squaring-knives adjustable by means of the screwed studs and nuts U′, upon which they are carried.

V is the rounding-knife, also attached to the slide.

W are the emery-rollers for sharpening the rounding-knife V.

X is the guard.

Y is the handle for operating the apparatus.

For sharpening the cornering or rounding knife I may employ movable emery-rollers, as shown at Fig. 2^A.

W and W′ are the emery-rollers mounted upon studs W^2 and W^3, having springs W^4.

1 is a runner connected to slide 2.

3 is an arm pivoted at 4 and connecting the stud W^2 to the slide 2 by means of the stud W^5, the stud W^3, carrying the emery-wheel W′, being connected to the slide 2 by arm 6. A projection 5 (upon the slide H carrying the knives) operates upon the runner 1, depressing it.

When the knives are upon the point of leaving the runners, the said runners W and W′ are made to open by the projection 5 depressing the runner 1, (which is connected to the slide 2,) forcing down the emery-roller W′ by means of the arm 6 and forcing upward the emery-roller W by means of the pivoted arm 3 (attached to the slide 2) acting on the lever. The projection also opens the emery-rollers when the knife returns, so that they only sharpen it on its forward movement.

The action is as follows: A length of cork is placed against the gage S and between the rosettes B and C, which are then closed by operating the treadle P, which brings the slide

L (to which is attached the rosette C) toward the rosette B, thus clamping the cork between them. The slide H, carrying the knives, is then operated, bringing forward first the quartering-knife T, which cuts the necessary width. Then the cork being held by the rosettes B and C is turned one-quarter of a revolution by means of the runners or rollers F operating upon the spiral bar E, and as the squaring-knives U are brought forward by means of the slide H, traveling upon the guide-shaft J, they cut off any superfluous cork upon the back or belly of same, thus making it a perfect square, after which, as the slide still travels forward, the spiral bar gives the rosettes rather more than a complete revolution, the rounding-knife coming into operation and cutting off the corners of the square, so as to prepare it for a subsequent process, or, if required, making a perfectly-finished bottling-cork by one movement of the slide carrying the knives. Instead of performing the whole of the operation consecutively, it may do any two of them, such as quartering and squaring, quartering and rounding, quartering and cornering, squaring and rounding, squaring and cornering.

What I would have understood is that I lay no claim to the general construction of the machine; but

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

1. In a cork-cutting machine, the combination, with a main frame, of a slide carrying a series of consecutively-acting cork-cutting knives, a pair of chucks for holding the cork-blocks, a rotatable spiral bar engaged with one of the chucks, a sliding carriage connected with the other chuck, a treadle mechanism connected with the carriage for sliding the same at the will of the operator, and runners or rollers carried by the slide and engaging the spiral bar, substantially as described.

2. In a cork-cutting machine, the combination, with a main frame, of a vertically-adjustable frame, adjusting devices supporting the latter from the main frame and serving to raise and lower the adjustable frame, a slide moving horizontally on the vertically-adjustable frame and carrying cork-cutting knives, a pair of chucks for holding the cork-block, a rotatable spiral bar engaged with one of the chucks, and devices carried by the slide to engage the spiral bar, substantially as described.

3. In a cork-cutting machine, the combination, with a main frame, of a vertically-adjustable frame, adjusting devices supporting the latter from the main frame and serving to raise and lower the adjustable frame, a slide carrying cork-cutting knives, a pair of chucks for holding the cork-block, a rotatable spiral bar engaging with one of the chucks, a sliding carriage connected with the other chuck, a treadle mechanism connected with the carriage for sliding the same at the will of the operator, and devices carried by the slide and engaging the spiral bar, substantially as described.

4. In a cork-cutting machine, the combination, with a main frame, of a slide carrying quartering, squaring, and cornering knives arranged to act consecutively on the cork-block, a rotatable bar having a flat portion, and a pair of twisted portions of different degrees of twist, and devices carried by the slide and adapted to engage the flattened and the pair of twisted portions of said bar for quartering, squaring, and cornering, substantially as described.

5. In a cork-cutting machine, the combination, with a main frame, of a rotating device for engaging the cork-block, a spiral bar having a pair of twisted portions of different degrees of twist, a slide provided with squaring and cornering knives arranged to act consecutively, and devices carried by the slide for consecutively engaging the said twisted portions of the bar for squaring and cornering, substantially as described.

6. In a cork-cutting machine, the combination, with a main frame, of a vertically-adjustable frame provided with a guide-shaft, set-screws which support the adjustable frame from the main frame, a slide moving on the guide-shaft and provided with quartering, squaring, and cornering knives arranged to act consecutively, a pair of chucks for holding the cork-block, a bar having a flattened portion and a pair of twisted portions of different degrees of twist, and runners or rollers carried by the slide for consecutively engaging the flattened and the twisted portions of the bar, substantially as described.

7. In a cork-cutting machine, the combination, with a main frame and devices for holding and rotating the cork-block, of a slide having a projection 5, and a cornering or rounding knife V, a slide 2, depressed by the projection and having a runner or roller 1, a pair of sharpening-rollers W W′, the lower one of which is carried by the slide, and a pivoted arm 3, connected with and oscillated by the roller-carrying slide as it is depressed, for raising the upper sharpening-roller, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

GEORGE W. ROBINSON.

Witnesses:
JOHN E. WHITHAM,
Halifax.
A. C. MATTOS,
Lisbon.