

A. GOLD.
CORK CUTTING MACHINE.
APPLICATION FILED APR. 4, 1911.

1,005,195.

Patented Oct. 10, 1911.

4 SHEETS-SHEET 1.

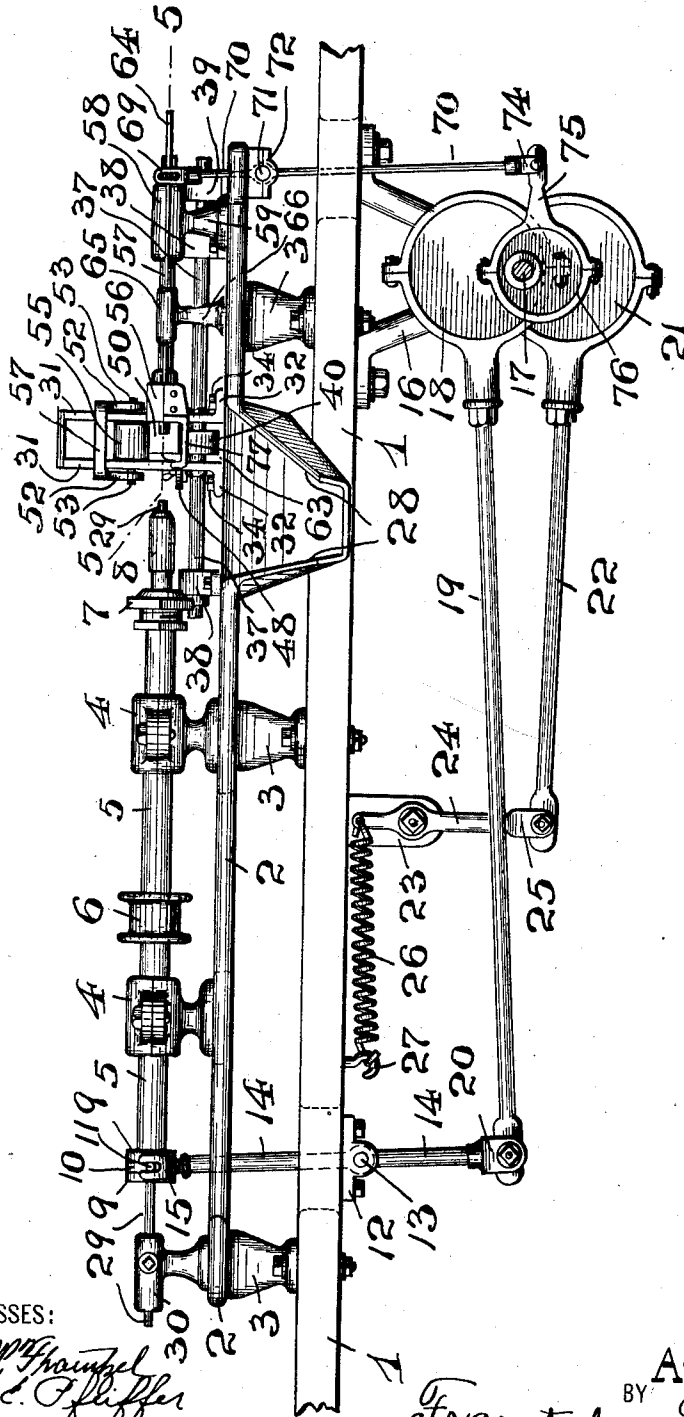


FIG. 1

WITNESSES:
Frank M. W. Fraentzel
Harry C. Pfliffer

INVENTOR:
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BY *Fraentzel and Richarder.*
ATTORNEYS

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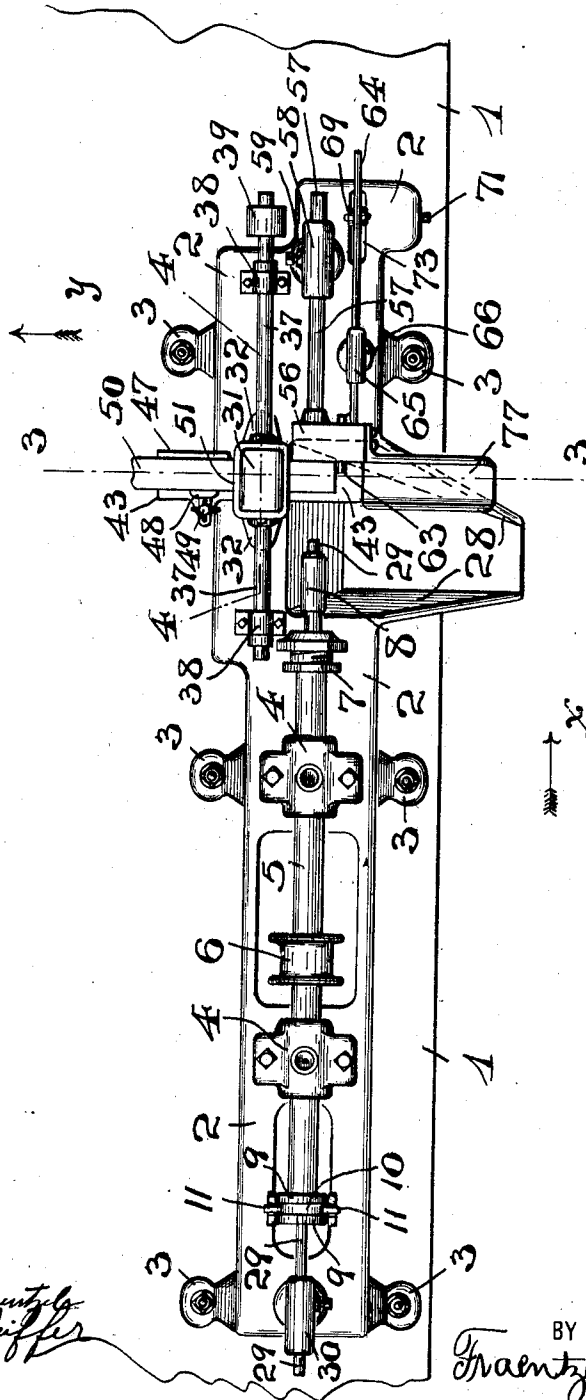


FIG. 2

WITNESSES:
Ernst W. W. Haentzel
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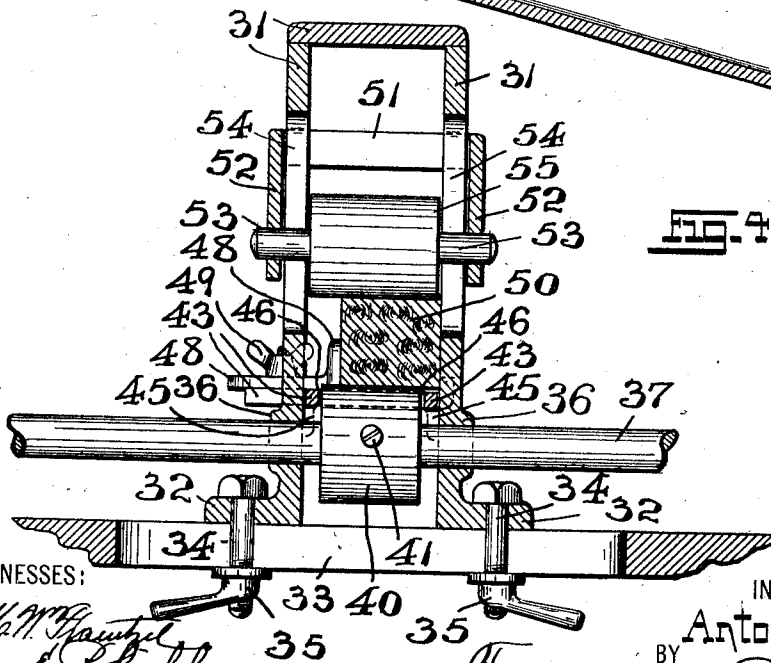
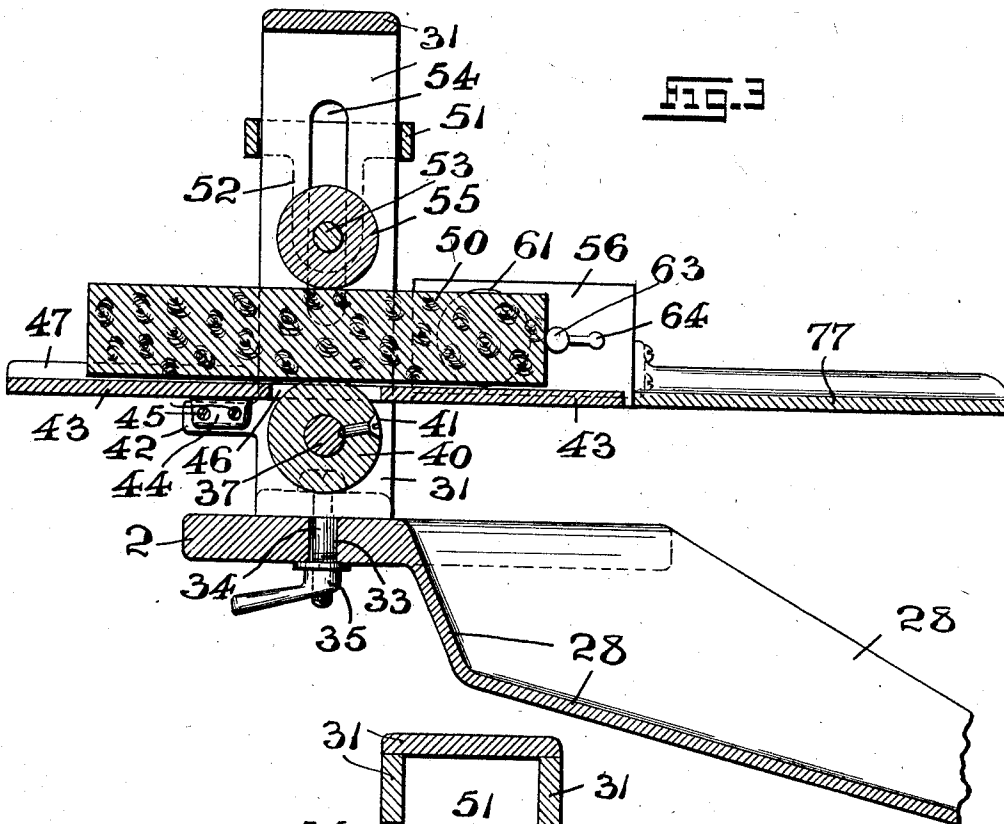
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4 SHEETS—SHEET 3.



WITNESSES:

Hugh M. Fraentzel
Harry C. Puffer

INVENTOR:

Anton Gold.

BY

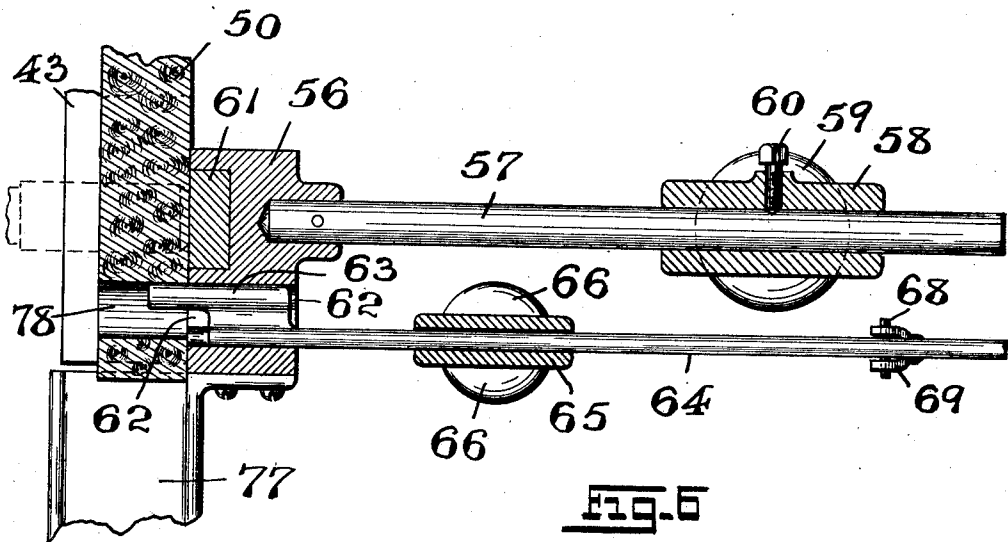
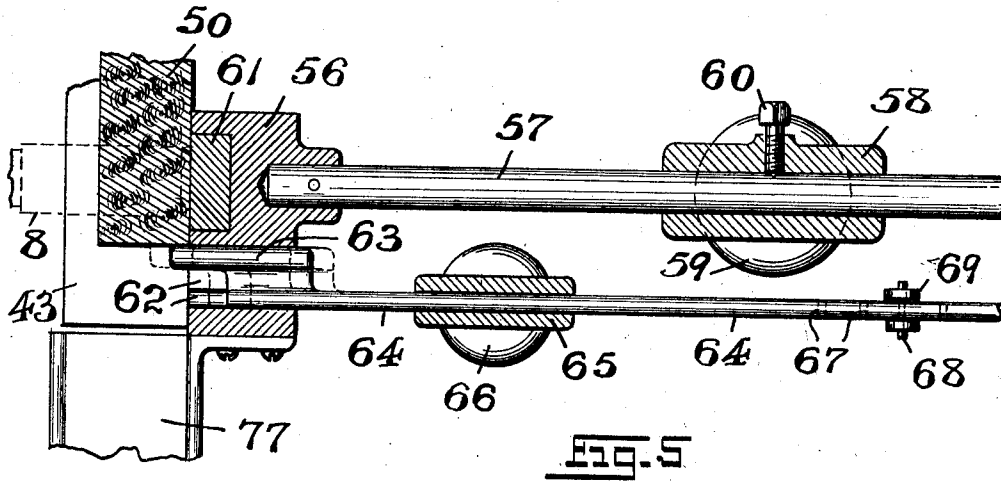
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4 SHEETS-SHEET 4.



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UNITED STATES PATENT OFFICE.

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CORK-CUTTING MACHINE.

1,005,195.

Specification of Letters Patent.

Patented Oct. 10, 1911.

Application filed April 4, 1911. Serial No. 618,794.

To all whom it may concern:

Be it known that I, ANTON GOLD, a citizen of the United States, residing at Newark, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Cork-Cutting Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to characters of reference marked thereon, which form a part of this specification.

The present invention has reference, generally, to improvements in cork-cutting machinery; and, this invention relates, more particularly, to novel construction of power-driven cork-cutting machine which is of a simple construction, and is highly efficient in character.

This invention has for its principal object to provide a novel construction of power driven cork-cutting machine which is automatic in its operation.

A further object of this invention is to provide a novel automatic cork-feeding mechanism operating in conjunction with the cork-cutting devices, whereby the cork-bark, from which the corks are to be cut, is automatically fed to the said cork-cutting devices of the machine, said cork-feeding mechanism comprising a set of feeding rolls and a timed stop-mechanism which retains the cork-bark in front of the cutting-devices during the cutting operation.

Other objects of the present invention not at this time more particularly enumerated, will be clearly evident from the following detailed description of the same.

With the various objects of the present invention in view, the said invention consists, primarily, in the novel cork-cutting machine hereinafter more fully set forth; and, the said invention consists, furthermore, in the novel arrangements and combinations of the various devices and parts, as well as in the details of the construction of the same, all of which will be herein-after more fully described, and then finally embodied in the clauses of the claim which are appended to this specification, and which form an essential part of the same.

The invention is clearly illustrated in the accompanying drawings, in which:—

Figure 1 is a side elevation of the novel

construction of cork-cutting machine made according to and embodying the principles of my present invention; and Fig. 2 is a plan or top view of the same. Fig. 3 is a detail transverse section taken on line 3—3 in said Fig. 2, looking in the direction of the arrow *x*, the said view being drawn on an enlarged scale; and Fig. 4 is a detail longitudinal section, taken on line 4—4 in said Fig. 2, looking in the direction of the arrow *y*, this view being also drawn on an enlarged scale. Fig. 5 is a detail horizontal section, taken on line 5—5 in said Fig. 1, looking downwardly, said view being made on an enlarged scale; and Fig. 6 is a similar view, illustrating a further operation of the parts shown in Fig. 5.

Similar characters of reference are employed in all of the hereinabove described views to indicate corresponding parts.

Referring now to the said drawings, the reference-character 1 indicates a work-bench or other place upon which the novel cork-cutting machine is placed. The said cork-cutting machine comprises a bed-plate 2 supported upon suitable legs 3. Arranged upon said bed-plate 2 are a pair of bearing-elements 4 in which is journaled a shaft 5. Secured upon said shaft 5, in a suitable location, is a pulley-wheel 6, to which may be connected a belt for driving the same, so as to rotate the said shaft 5. The forward end of said shaft 5 is provided with a chuck-device 7 which is adapted to support in operative connection with the said shaft 5, a cutting-knife 8, which is of the usual hollow cylindrical form. Secured upon the rear end of said shaft 5 is a grooved collar 9, in the groove of which is arranged a slip-ring 10 having oppositely and outwardly extending studs or lugs 11. Secured to the under side of said bench 1 are bearing-members 12 in which is journaled a rock-shaft 13, and connected with said rock-shaft is a lever-member 14, the upper end of which is provided with a yoke 15 having its forked ends in engagement with said studs or lugs 11 of the said slip-ring 10. Secured to the under side of said bench 1, in a suitable location, are suitable hangers 16 in which is journaled a driving shaft 17. Connected with said driving shaft 17 is an eccentric 18 from which extends a connecting-rod 19, the free end of which is pivotally connected with the forked end 20 of said lever-member 14 hereinabove mentioned. Connected with

said driving-shaft 17 is another eccentric 21 from which extends a connecting-rod 22, and suitably secured to the under side of said bench 1 is a bracket 23 upon which is pivotally mounted a lever-arm 24 to the lower forked end 25 of which is pivotally connected the said connecting-rod 22. Connected, in any suitable manner, to the upper end of the said lever-arm 24 is one end of a coiled spring 26, the opposite end of said spring being anchored upon a hook-member 27 which is also secured to the under side of the said bench 1. The said eccentric 21 works in alternation, or in opposite direction, to the movement of said eccentric 18, and the lever-arm 24 and said coiled spring 26 act as a balancing device to balance the reciprocations of said eccentric 18 which reciprocates the cork-cutting devices, thus preventing any jarring or dislocation of the mechanism, and providing a smooth, non-vibrating operation of said cork-cutting machinery. The said bed-plate 2 is formed with a suitable cork-receiving chute 28 which is located below the cutting-knife 8, above described. The said shaft 5 is hollow, as is also the cutting-knife 8, and extending through said shaft 5 is a stationary push-rod 29, the same being suitably secured and supported by means of a standard-piece 30. When said shaft 5 has been moved forward to carry the said cork-cutting knife 8 forward and thereby cutting a cork from the cork-bark presented in front of the same, the said cutting-knife 8 in cutting said cork receives the same within its tubular interior. When said shaft 5 and said cutting-knife 8 are retracted to their normal initial positions, the cork is brought against the free end of said stationary push-rod 29 which forces the same out of said cutting-knife 8, and the produced cork will thereupon drop into said chute 28.

The means for feeding the cork-bark in front of the cutting knife 8, and retaining the same in position during the cutting operation comprises the following devices:—Secured upon said bed-plate 2 is a frame-work 31 provided with perforated feet-portions 32 for supporting the same. The said bed-plate 2 is also made with a longitudinally extending slot 33 through which pass the bolts 34 with which said perforated feet-portions are provided, the said bolts 34 being engaged by the lock-nuts 35 by means of which said frame-work 31 is secured in a desired adjusted position upon said bed-plate 2. Said frame-work 31 is provided with oppositely arranged bearing-portions 36 through which extends a driving-shaft 37, said driving-shaft 37 being journaled in suitable bearing-members 38 which are suitably secured upon said bed-plate 2. Said shaft 37 is also provided with a pulley 39 whereby the same may be rotated. Secured

upon said shaft 37, between the side-members of said frame-work 31, is feed-roller 40 which is provided with a set-screw 41 for locking the same upon said shaft, so that it will rotate therewith. The side-members of the frame-work 31 are provided with rearwardly extending lugs or arms 42, and extending between said side-members of said frame-work 31 and above the feed-roller 40 is a supporting-table 43, the same being provided with downwardly extending lugs or ears 44 which register with said lugs or arms 42 of said frame-work 31, and which are secured thereto by means of screws 45, or other suitable fastening means, whereby said supporting-table 43 is maintained in its operative position. The said supporting table 43 extends both forwardly and rearwardly of said frame-work 31, and the same is further provided with a suitable opening 46 through which may project upwardly the said feed-roller 40. The rearward portion of said supporting table 43 is provided along one of its side-edges with a flange or rib 47, and upon the side opposite the said rib 47, there is adjustably secured, in connection with said supporting-table 43, a gage-plate 48, which may be secured in any desired adjusted position by means of a thumb-screw or nut 49 arranged in connection therewith. The said supporting table is adapted to support in engagement with said feed-roll 40, a piece of cork-bark 50 from which it is desired to cut the corks. Slidably arranged in connection with said frame-work 31 is a yoke-piece 51 which is provided with downwardly extending arms 52, in the free ends of which is supported or journaled a shaft 53, the latter being adapted to pass through elongated slots or openings 54 with which the said side-members of said frame-work 31 is provided. Secured upon said shaft 53 is an idler-roller 55 which is adapted to rest upon the upper surface of said cork-bark 50, and the weight of which tends to maintain said cork-bark in its proper engagement with said feed-roll 40, whereby the same is moved or fed forwardly in front of the reciprocating cutting-knife 8, herein-above described. Adjacent to the said feeding mechanism, just described, and in proper relation thereto, is a cutting-block or anvil and an automatic stop-mechanism operating in relation therewith. The reference-character 56 indicates the said cutting-block or anvil, the same registering in position with one edge of the forward portion of said supporting table 43, said cutting-block or anvil 56 being supported in alinement with the said cutting-knife 8, and in such a manner, so as to permit of the adjustment of said cutting-block or anvil with relation to said cutting-knife 8. The means for thus supporting said cutting-block or anvil comprises a tail-piece or arm 57 which is rigidly

secured to the said cutting-block or anvil in any suitable manner, said tail-piece or arm 57 being slidably received in the socketed portion 58 of a supporting standard 59, which is secured upon said bed-plate 2. Said socketed portion 58 is provided with a set-screw 60, by means of which the said tail-piece or arm 57 may be locked against longitudinal movement, and thus rigidly maintain said cutting block or anvil 56 in its adjusted position. The face of said cutting-block or anvil 56 is provided with a socket or depression in which is secured a cutting-seat 61 of soft metal, such, for example, as lead, or similar material. The edge of the cutting-knife 8, in the course of the cutting operation fetches upon or against this cutting-seat 61, which, being soft, does not injure the cutting edge of said knife, as will be clearly evident.

The said cutting-block or anvil 56 is provided with a transverse opening 62 in which is slidably arranged a movable stop-member 63 adapted to be projected beyond the face of said cutting-block or anvil 56 to engage the cork-bark 50 and hold or retain the same against movement by the feeding mechanism during the operation of the cork-cutting device. The said stop-member is reciprocated in time, with the movements of the cutting-knife 8, so as to properly operate in conjunction therewith. The means for reciprocating said stop-member 63 comprises a tail-piece 64 which is operatively connected with said stop-member in any suitable manner, said tail-piece 64 being slidably supported by the socket-portion 65 of a standard 66 which is secured upon said bed-plate 2. The said tail-piece 64 is provided with a plurality of holes or perforations 67, through any one of which may be passed the transverse pin 68, to adjust said stop-member 63 with relation to its operating means, and thereby conform its operation to the adjusted position of said feeding mechanism and said cutting-block or anvil 56, and connected with said transverse pin 68 is the link-portion 69 of a reciprocating lever 70, which is secured upon a rock-shaft 71 journaled in bearings 72 upon the under side of said bed-plate 2. Said bed-plate 2 is provided with an elongated slot or opening 73 which permits the passage and operation of said reciprocating lever 70. The lower end of said reciprocating-lever 70 is provided with a forked portion 74 which is pivotally connected with the arm 75 of an eccentric 76 mounted upon and operated by said driving shaft 17. Secured to said cutting-block or anvil 56 and in alinement with said supporting table 43 is a chute-like member 77 which is adapted to carry off the scrap cork-bark, after the corks have been cut therefrom.

The operation of my novel construction

of cork-cutting machine, the details of which have been above described, is as follows: The said shaft 5 is revolved, so as to revolve said cutting-knife 8 connected therewith. A piece of cork-bark 50 is placed upon the supporting table 43 and pushed into contact with the feed-roller 40 and the idler-roller 55, the former of which grips it and feeds the same forward in front of said cutting-block or anvil 56. In the meantime, the said driving-shaft 17, operating through the eccentric 76, oscillates said lever 70 which pushes forward the said tail-piece 64 and projects beyond the face of said cutting-block or anvil 56 and into the path of said cork-bark 50, the stop-member 63, being thereby held against any forward movement. In the meantime, the eccentric 18 operating through its connecting rod 19 and the lever-member 14, moves toward the cutting-block or anvil 56, the rotating shaft 5 and the cutting knife 8 carried thereby, until the latter cuts its way through said cork-bark 50, thus forming a cork which is withdrawn from said cork-bark 50 upon the retraction of the said cutting-knife 8. The eccentric 18 in completing its revolution reverses the movement of said shaft 5 and said cutting-knife 8, which is retracted. At the same time, the eccentric 76, in the same manner, oscillates said lever 70 in the opposite direction to retract said tail-piece 64 and withdraw said obstructing stop-piece 63 from the path of said cork-bark 50, which again permits the feed-roller 40 to move the said cork-bark in a forward direction. The continued revolution of said eccentric 76, operating through the connecting mechanism described, again projects the stop-piece 63 forward, so that the same will enter the hole 78, from which the cut cork has been removed (as illustrated more particularly in Fig. 6 of the accompanying drawings,) thus again holding the cork-bark 50 against movement, while the cutting-knife 8 is again moved into its cutting operation. These operations are continued until the cork-bark has been used up, it being understood that the cork-bark pieces are continually caused to follow one another through the feeding-mechanism by the operation of the machine.

It will be noticed from the above description, and also from an inspection of the accompanying drawings, that the feeding mechanism, the automatic stop-device, and the said cutting block or anvil may be shifted longitudinally with relation to the bed-plate 2, and these several devices may therefore be secured in any desired adjusted position with relation to the reciprocating cutting-knife 8. The purpose of thus making such parts of the machine adjustable, as to their position, is to enable the same to be set up to the proper stroke of the reciprocating

cutting knife, and to permit of the sharpening of said cutting knife, which reduces its length and thereby slightly modifies its stroke from time to time, as the same is sharpened.

I am fully aware that some changes may be made in the several arrangements and combinations of the parts of the novel cork-cutting machine, as well as in the details of the construction of the same, without departing from the scope of my present invention. Hence, I do not limit my invention to the exact arrangements and combinations of the parts as herein described, and as illustrated in the accompanying drawings, nor do I confine myself to the exact details of the construction of the said parts.

I claim:—

1. In a cork-cutting machine, the combination with a rotating shaft, of a cutting knife carried thereby, means for reciprocating said shaft and cutting knife, a cutting block or anvil, adjustable axially of said shaft and cutting knife, a stop-member slidably connected with said cutting-block or anvil, means for reciprocating said stop-member in time with the reciprocating movements of said rotating shaft and cutting-knife, and means for feeding cork-bark against said cutting-block or anvil and in engagement with said stop-member, comprising a driving shaft, a feed-roller adjustably secured on said driving shaft, a frame-work mounted in connection with said driving shaft and feed-roller, and adjustable axially of said cutting-knife and its shaft, a supporting table connected with said frame-work, and extending in front of said cutting-block or anvil, said supporting table having an opening to permit the projection of said feed-roller therethrough, a yoke-member slidably arranged in connection with said frame-work, and an idler-roller journaled in said yoke-member, substantially as and for the purposes set forth.

2. In a cork-cutting machine, the combination with a reciprocating cutting-means, of a cutting-block or anvil adjustable axially of said cutting-means, and means for feeding cork-bark against said cutting-block or anvil, comprising a driving shaft, a feed-roller adjustably secured on said driving shaft, a frame-work mounted in connection with said driving-shaft and feed-roller and adjustable axially of said cutting-means, a supporting table carried by said frame-work and extending in front of

said cutting-block or anvil, said supporting table having an opening to permit the projection of said feed-roller therethrough, and an idler-roller capable of free vertical play mounted in connection with said frame-work, substantially as and for the purposes set forth.

3. In a cork-cutting machine, the combination with a reciprocating cutting-means, of a cutting-block or anvil adjustable axially of said cutting-means, and means for feeding cork-bark against said cutting-block or anvil, comprising a driving-shaft, a feed-roller adjustably secured on said driving-shaft, a frame-work, mounted in connection with said driving-shaft and feed-roller and adjustable axially of said cutting-means, a supporting table carried by said frame-work and extending in front of said cutting-block or anvil, said supporting table having an opening to permit the projection of said feed-roller therethrough, an idler-roller capable of free vertical play mounted in connection with said frame-work, and an intermittently acting stop-member arranged with said cutting-block or anvil against which said cork-bark is fed.

4. In a cork-cutting machine, the combination with a reciprocating cutting-means, of a cutting-block or anvil adjustable axially of said cutting-means, and means for feeding cork-bark against said cutting-block or anvil, comprising a driving shaft, a feed roller adjustably secured on said driving-shaft, a frame-work mounted in connection with said driving-shaft and feed-roller and adjustable axially of said cutting-means, a supporting table carried by said frame-work and extending in front of said cutting-block or anvil, said supporting table having an opening to permit the projection of said feed-roller therethrough, an idler-roller capable of free vertical play mounted in connection with said frame-work, an intermittent stop-member slidably connected with said cutting-block or anvil, means for reciprocating said stop-member, and means for adjusting said stop-member with relation to its reciprocating means to conform its operative relation to the adjusted positions of said cutting-block or anvil.

In testimony, that I claim the invention set forth above I have hereunto set my hand this first day of April, 1911.

ANTON GOLD.

Witnesses:

FREDK. C. FRAENTZEL,
FREDK. H. W. FRAENTZEL.