A. BOGDÁNFFY.

APPARATUS FOR CUTTING CORK SHEETS.

APPLICATION FILED DEC. 15, 1908.

920,010. Patented Apr. 27, 1909.

4 SHEETS—SHEET 1.

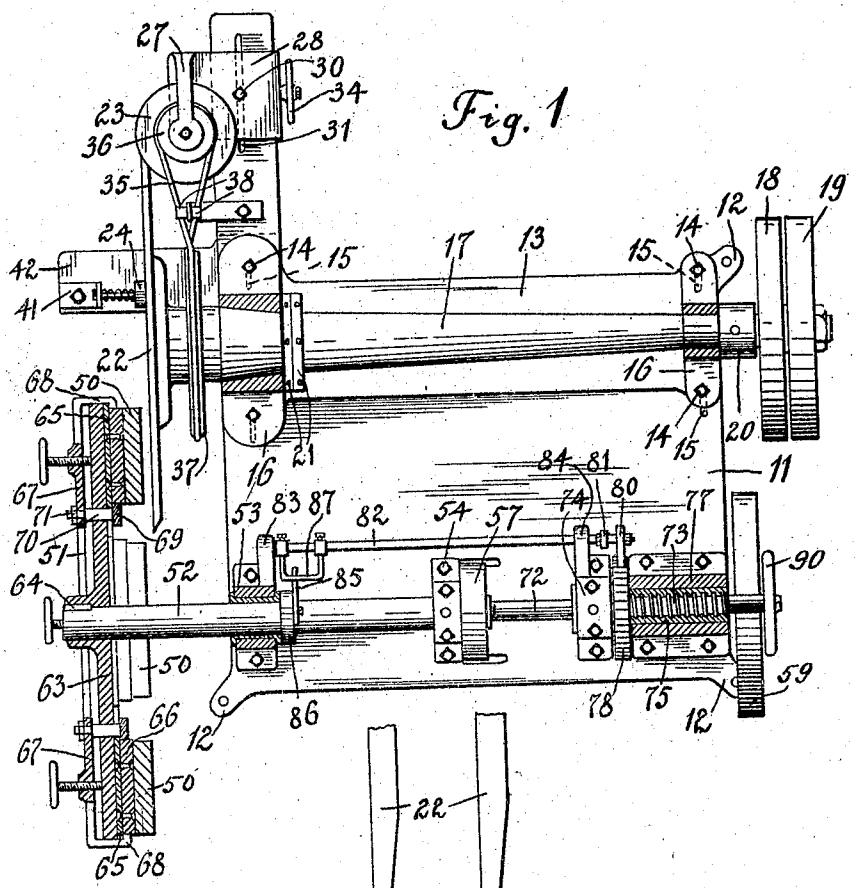


Fig. 1

Fig. 6

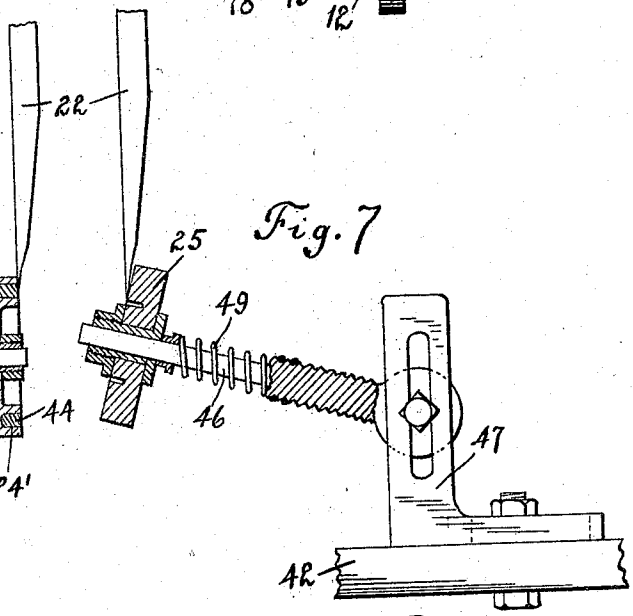


Fig. 7

WITNESSES

Elemer Török

S. Birnbaum

INVENTOR

Alex Bogdánffy

BY

Sigmund Herzog

his ATTORNEY

A. BOGDÁNFFY.

APPARATUS FOR CUTTING CORK SHEETS.

APPLICATION FILED DEC. 15, 1908.

920,010. Patented Apr. 27, 1909.

4 SHEETS—SHEET 2.

Fig. 2

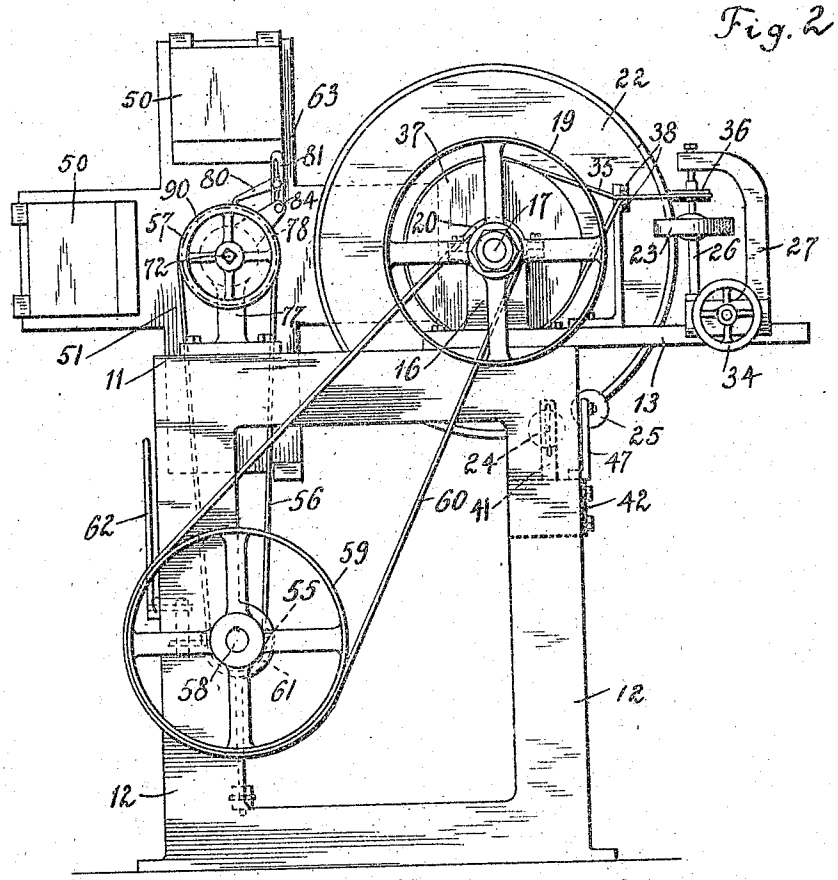
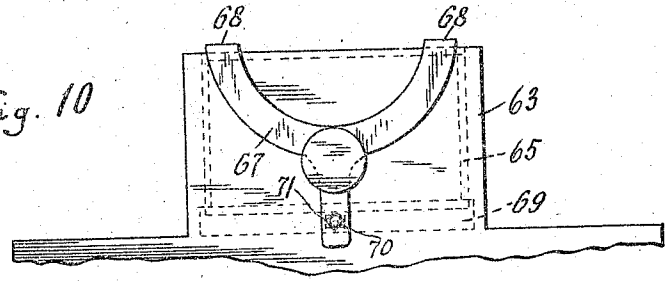


Fig. 10



WITNESSES

Elemer Török

S. Birnbaum

INVENTOR

Alex Bogdánffy

BY

Sigmund Herzog

his ATTORNEY

A. BOGDÁNFFY.

APPARATUS FOR CUTTING CORK SHEETS.

APPLICATION FILED DEC. 15, 1908.

920,010.

Patented Apr. 27, 1909.

4 SHEETS—SHEET 3.

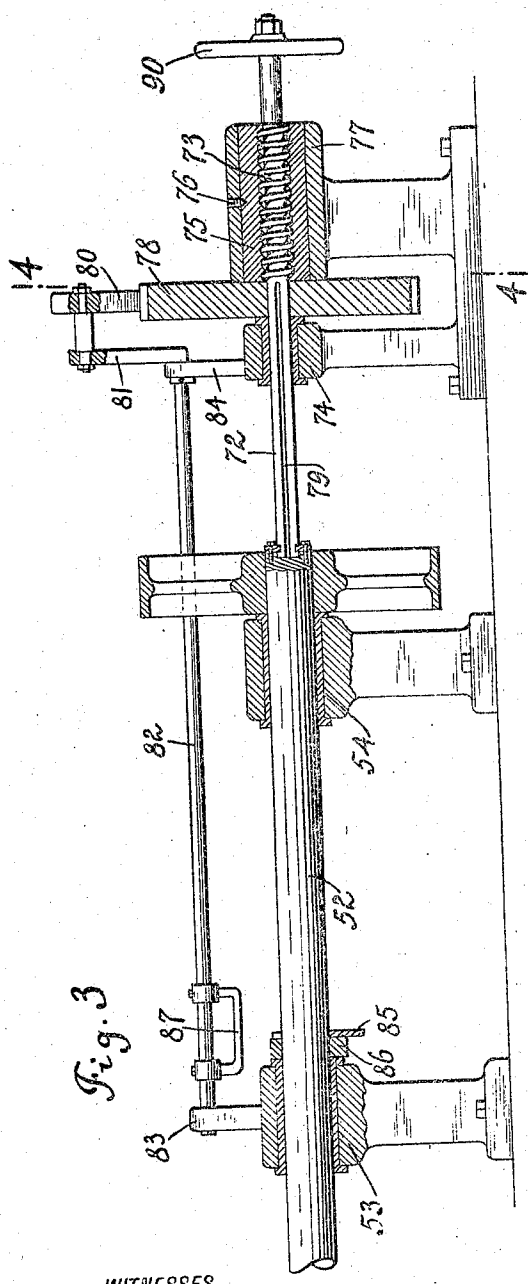


Fig. 3

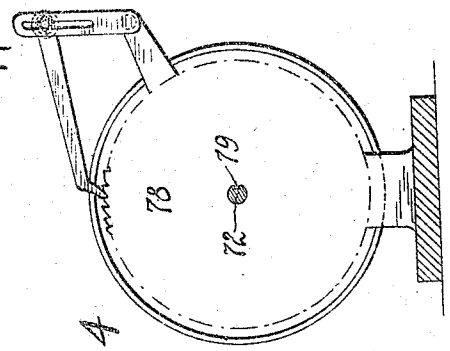


Fig. 4

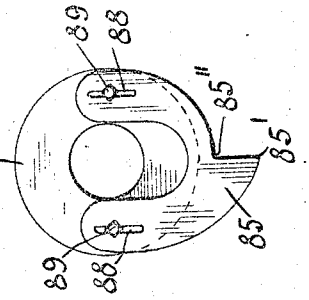


Fig. 5

WITNESSES

Alexander Forrer

S. Birnbaum

INVENTOR

Alex Bogdánffy

BY

Sigmund Herzog

his ATTORNEY

A. BOGDÁNFFY.

APPARATUS FOR CUTTING CORK SHEETS.

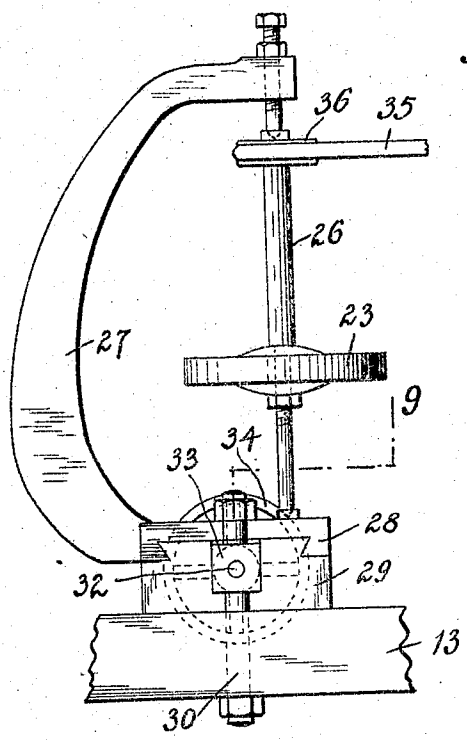
APPLICATION FILED DEC. 15, 1908.

920,010.

Patented Apr. 27, 1909.

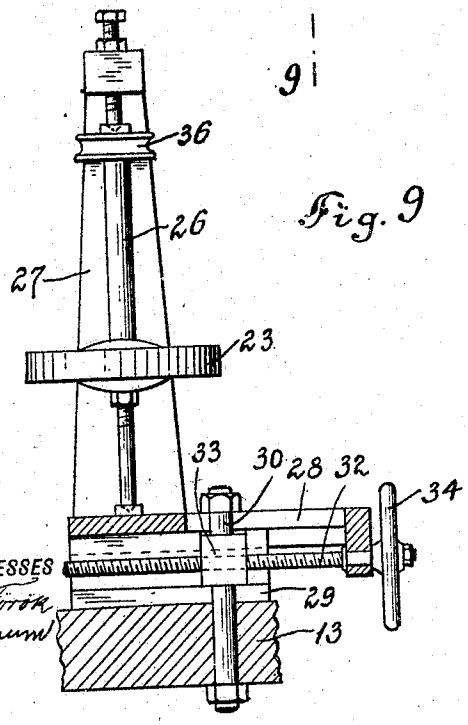
4 SHEETS—SHEET 4.

Fig. 8



9

Fig. 9



WITNESSES

Elmer Fröck

S. Birnbaum

INVENTOR

Alex Bogdánffy

BY

Sigmund Herzog

his ATTORNEY

UNITED STATES PATENT OFFICE.

ALEX BOGDÁNFFY, OF NEW YORK, N. Y.

APPARATUS FOR CUTTING CORK SHEETS.

No. 920,010. Specification of Letters Patent. Patented April 27, 1909.

Application filed December 15, 1908. Serial No. 467,661.

To all whom it may concern:

Be it known that I, ALEX BOGDÁNFFY, a subject of the King of Hungary, and resident of the city of New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Apparatus for Cutting Cork Sheets, of which the following is a specification.

The present invention relates to machines for cutting or slicing thin sheets or very thin boards from blocks of cork.

The object of the invention is to provide a device of the character specified, whereby the above mentioned operation is effected automatically, after the blocks of the cork have been attached to the work-holder.

Another object of the invention is to provide a simple, inexpensive and effective means for advancing the blocks a definite distance at predetermined intervals.

A further object of the invention is to provide means, whereby the thickness of the sheets to be cut may be varied according to the requirements.

A still further object of the invention is to provide a grinding device, permanently in contact with the cutter of the machine, whereby such cutter may operate upon the material without the necessity of removing the same from time to time for the purpose of grinding or sharpening the same.

Other objects of the invention will be apparent in reading the specification and from an examination of the drawings, forming part of the present application for Letters Patent.

Broadly speaking, the invention consists of a rotary cutter, operating upon the cork blocks, which are attached to a rotary and longitudinally movable carrier, the longitudinal movement of which is governed by the speed of the rotary knife or cutter.

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

Figure 1 is an elevation of a machine embodying the invention, Fig. 2 is an end view of the same, Fig. 3 is a section, partly in elevation, of the work-holder advancing means, Fig. 4 is a section taken on line 4, 4 of Fig. 3, and Fig. 5 is a detail of construction of the operating mechanism of the advancing means. Figs. 6, 7 and 8 are details of construction of the cutter grinding means, and Fig. 9 is a section taken on line 9, 9 of Fig. 8. Fig. 10 is a detail of construction of the work-holder.

In the drawings, a horizontal table or base plate is indicated at 11, supported by a plurality of standards or uprights 12. To this base plate is adjustably secured a frame 13. This frame is attached to the base plate by means of bolts 14, 14, engaging the slots 15, 15 of the base plate 11, and supports bearings 16, 16, in which is journaled the driving shaft 17 of the machine, which carries a fixed pulley 18 and a loose pulley 19, for the driving belt, and a pulley 20, from which some of the operating parts of the machine are driven. The driving shaft 17 is prevented from longitudinal movement by having the portion, journaled in the bearing 16, made conical and being in screw-threaded engagement with rings 21, 21, contacting with the bearing-block.

A disk cutter or knife 22 is arranged upon one end of the shaft and revolves therewith. This knife is kept constantly in contact with the grinding wheels 23, 24 and 25, which sharpen the cutters continuously, and allow thus of a continuous working without the necessity of removing from time to time the cutter for said purpose. More particularly, the grinding wheel 23 is arranged on a spindle 26, journaled in a frame 27, having a dove-tailed plate 28, in engagement with a supporting plate 29, adjustably secured to the frame 13 by means of a screw bolt 30, engaging a slot 31 in the frame 13 and being arranged parallel to the plane of rotation of the cutter 22. The slot 31 and bolt 30 allows thus of an adjustment of the grinding wheel 23 in a direction parallel to the plane of rotation of the cutter wheel, while a screw 32, engaging the dove-tailed plate 28 and an enlarged portion 33 of the stationary bolt 30, affords means for varying the position of the grinding wheel 23 in a direction at right angles to the plane of rotation of the cutter 22. Obviously a hand-wheel 34 may be provided for facilitating the rotation of the screw 32. Rotation is imparted to the grinding wheel 23 by means of a belt 35, engaging a driven pulley 36, mounted upon the spindle 26, and a driving pulley 37, carried by the driving shaft 17. These two pulleys are arranged in planes at right angles to each other, as shown in Fig. 1 of the

drawings, and, therefore, guiding rollers 38, 38 must be provided for the belt 35, as usual with such devices.

The grinding wheel 24 is loosely mounted upon a spindle 39, and is forced by means of a spring 40 against the cutter 22. The spindle 39 is attached to a bracket 41, arranged on a support 42, attached to one of the uprights 12. The bracket 41 is provided with a slot 43 in order to allow of a shifting of the grinding wheel 24 to the desired position. Attention is called to the fact that the body of the grinding wheel 24 is made, preferably, of wood or other soft substance and only an annular groove 24′, formed therein, is filled with a suitable abrasive substance 44. The grinding wheel 25 is mounted loosely upon a spindle 46, adjustably carried by a bracket 47, mounted upon the support 42, hereinbefore mentioned. A spring 49 keeps the grinding wheel 25 in contact with the rotary cutter 22.

The cork blocks 50, 50 are secured to a work-holder 51, mounted upon one end of a driven shaft 52, journaled in the bearings 53 and 54, and driven from the pulley 55 by means of a belt 56, driving the pulley 57, mounted upon the driven shaft 52. The pulley 55 is carried by a countershaft 58, having a pulley 59 keyed upon the free end thereof, the belt 60 of which engages the pulley 20 of the driving shaft 17, hereinbefore described. A clutch 61, operated by a lever 62, connects the two sections of the shaft 58, which carry the pulleys 55 and 59, respectively, and allows thereby the shaft 52 to be brought to its condition of rest, although the rotation of the driving shaft 17 is maintained.

The work-holder 51 consists of a base plate 63, of a cross-like configuration, which is secured, in the case illustrated in the drawings, by means of a key 64 to the driven shaft 52. To this base plate 63 are attached, preferably, metal plates 65, carrying wooden boards 66. The metal plates 65 are held upon the base plate 63 by means of Y-shaped clamps 67, having jaws 68, 68, engaging the outer edges of the metal plates 65, and by means of holding plates 69, engaging the inner edges of the same, which holding plates are provided with squared bolts 70, engaging the square holes of the base plate 63 and the Y-shaped clamps 67, and being held in engagement therewith by nuts 71, 71. The metal plates 65 and the wooden board 66, secured thereto, are thus held in position upon the work-holder and rotate therewith. The cork blocks 50 are secured to the wooden boards 66 by pasting the same thereto, preferably, by means of pitch.

Obviously in rotating the driving and driven shafts, the cutter will operate upon the cork blocks, and slice off sheets, as the work-holder is advanced toward the cutting plate 22. The means for advancing the work-holder a predetermined distance during each revolution of the work-holder comprises a rod 72, provided with a screw 73, and being operatively connected with the driven shaft 52 in such a manner that the rod 72 does not participate in the rotation of the shaft 52. The rod 72 is journaled in a bearing 74, while the screw 73 meshes with a nut 75, held against rotation by means of a stop 76, arranged in the bearing 77. Between the bearings 74 and 77, and upon the rod 72 is arranged a ratchet wheel 78, having a key in engagement with a longitudinal spline 79 in said rod. The ratchet wheel is held against longitudinal movement by the bearings 74 and 75 and is rotated by means of a pawl 80, adjustably carried by a lever 81, arranged upon a rod 82, journaled in bearings 83 and 84, respectively, which rod may be oscillated by means of a suitably shaped cam 85, carried by a collar 86, mounted upon the driving shaft 52 and participating in the rotation thereof. This cam works against a yoke 87, mounted upon the oscillating rod 82. It will be observed from Fig. 5 of the drawings, that the cam 85 is provided with slots 88, 88, engaged by screw bolts 89, 89, whereby the relative position of the cam, and collar may be varied according to the requirements. A hand wheel 90 is mounted upon the free end of the rod 72 for a well known purpose.

In the operation of the machine, the cork blocks, properly prepared, are placed in the manner hereinbefore described upon the work-holder and brought by means of the hand wheel 90 in contact with the cutter 22. The machine being then set in motion, the cutter 22 and the work-holder 51 are rotated. The cam 85, working against the yoke 87, gives an angular turn to the rod 82, and, when the yoke is allowed suddenly to be disengaged with the highest point 85′ of the cam and to engage the lowest point 85″, the pawl 80 will cause the ratchet wheel to advance a predetermined number of degrees, advancing thus the work-holder a predetermined distance, determining thus the thickness of the slice or sheet. Obviously, during each revolution of the shaft 52 the ratchet wheel is caused to turn a predetermined number of degrees, and the work-holder to be advanced a distance, which depends upon the relative position of the cam and ring 86.

It is apparent that many minor changes may be made in the construction and arrangement of the several parts of the device without departing from the spirit and scope of the invention.

What I claim is:—

1. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in

one plane thereon, means to rotate said work-holder, and means operating in unison with said work-holder for advancing the same, substantially as set forth.

2. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a ratchet wheel operatively connected with said work-holder, a pawl in engagement with said ratchet wheel, and means actuating said pawl in unison with said work-holder for advancing the same, substantially as set forth.

3. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, and means operating in unison with said work-holder for advancing the same a predetermined distance during each revolution of said work-holder, substantially as set forth.

4. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a ratchet wheel operatively connected with said work-holder, a pawl in engagement with said ratchet wheel, and means actuating said pawl in unison with said work-holder for advancing the same a predetermined distance during each revolution of said work-holder, substantially as set forth.

5. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, and means operating in unison with said work-holder for intermittently advancing the same, substantially as set forth.

6. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a ratchet wheel operatively connected with said work-holder, a pawl in engagement with said ratchet wheel, and means actuating said pawl in unison with said work-holder for intermittently advancing the same, substantially as set forth.

7. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, means operating in unison with said work-holder for advancing the same, and means for predetermining the thickness of the sheet to be cut, substantially as set forth.

8. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a ratchet wheel operatively connected with said work-holder, a pawl in engagement with said ratchet wheel, means actuating said pawl in unison with said work-holder for advancing the same, and means for predetermining the thickness of the sheet to be cut, substantially as set forth.

9. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a ratchet wheel operatively connected with said work-holder, a pawl in engagement with said ratchet wheel, and a cam operated by said work-holder for actuating said pawl for advancing said work-holder, substantially as set forth.

10. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a ratchet wheel operatively connected with said work-holder, a pawl in engagement with said ratchet wheel, a cam operated by said work-holder for actuating said pawl for advancing said work-holder, and adjusting means for said cam to predetermine the thickness of the sheets to be cut, substantially as set forth.

11. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a screw operatively connected with said work-holder, a ratchet wheel actuating said screw, a pawl engaging said ratchet wheel, and means for actuating said pawl to rotate said screw, whereby said work-holder is advanced, substantially as set forth.

12. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a screw operatively connected with said work-holder, a ratchet wheel actuating said screw, a pawl engaging said ratchet wheel, and means for actuating said pawl to rotate said screw, whereby said work-holder is advanced intermittently, substantially as set forth.

13. In a machine for cutting cork sheets, the combination with a cutter and the means

to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a screw operatively connected with said work-holder, a ratchet wheel actuating said screw, a pawl engaging said ratchet wheel, and means for actuating said pawl to rotate said screw, whereby said work-holder is advanced a predetermined distance during each revolution of said work-holder, substantially as set forth.

14. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a screw operatively connected with said work-holder, a ratchet wheel actuating said screw, a pawl engaging said ratchet wheel, and a cam operated by said work-holder for actuating said pawl to rotate said screw, whereby said work-holder is advanced, substantially as set forth.

15. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a screw operatively connected with said work-holder, a ratchet wheel actuating said screw, a pawl engaging said ratchet wheel, and a cam operated by said work-holder for actuating said pawl to rotate said screw intermittently, whereby said work-holder is advanced, substantially as set forth.

16. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a screw operatively connected with said work-holder, a ratchet wheel actuating said screw, a pawl engaging said ratchet wheel, and a cam operated by said work-holder for actuating said pawl to rotate said screw intermittently and through equal angles during each revolution of the work-holder for advancing the same, substantially as set forth.

17. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a screw operatively connected with said work-holder, a ratchet wheel actuating said screw, a pawl engaging said ratchet wheel, means actuating said pawl to rotate said ratchet wheel, whereby said work-holder is advanced, and means for determining the thickness of the sheets to be cut, substantially as set forth.

18. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a screw operatively connected with said work-holder, a ratchet wheel actuating said screw, a pawl engaging said ratchet wheel, means for actuating said pawl to rotate said screw, whereby said work-holder is advanced intermittently, and means for determining the thickness of the sheets to be cut, substantially as set forth.

19. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a screw operatively connected with said work-holder, a ratchet wheel actuating said screw, a pawl engaging said ratchet wheel, means for actuating said pawl to rotate said screw, whereby said work-holder is advanced a predetermined distance during each revolution of said work-holder, and means for predetermining the thickness of the sheets to be cut, substantially as set forth.

20. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a screw operatively connected with said work-holder, a ratchet wheel actuating said screw, a pawl engaging said ratchet wheel, a cam operated by said work-holder for actuating said pawl to rotate said screw, whereby said work-holder is advanced, and means for predetermining the thickness of the sheets to be cut, substantially as set forth.

21. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a screw operatively connected with said work-holder, a ratchet wheel actuating said screw, a pawl engaging said ratchet wheel, a cam operated by said work-holder for actuating said pawl to rotate said screw intermittently, whereby said work-holder is advanced, and means for predetermining the thickness of the sheets to be cut, substantially as set forth.

22. In a machine for cutting cork sheets, the combination with a cutter and the means to actuate it, of a work-holder for receiving a plurality of blocks to be cut and arranged in one plane thereon, means to rotate said work-holder, a screw operatively connected with said work-holder, a ratchet wheel actuating said screw, a pawl engaging said ratchet wheel, a cam operated by said work-holder for actuating said pawl and ratchet

wheel to rotate said screw intermittently and through equal angles during each revolution of the work-holder for advancing the same, and means for predetermining the thickness of the sheets to be cut, substantially as set forth.

Signed at New York, in the county of New York and State of New York, this 9th day of December, A. D. 1908.

ALEX BOGDÁNFFY.

Witnesses:
SIGMUND HERZOG,
S. BIRNBAUM.