

O. F. THORN.
PORTABLE PLANING MACHINE.
APPLICATION FILED DEC. 9, 1915.

1,243,460.

Patented Oct. 16, 1917.
3 SHEETS—SHEET 1.

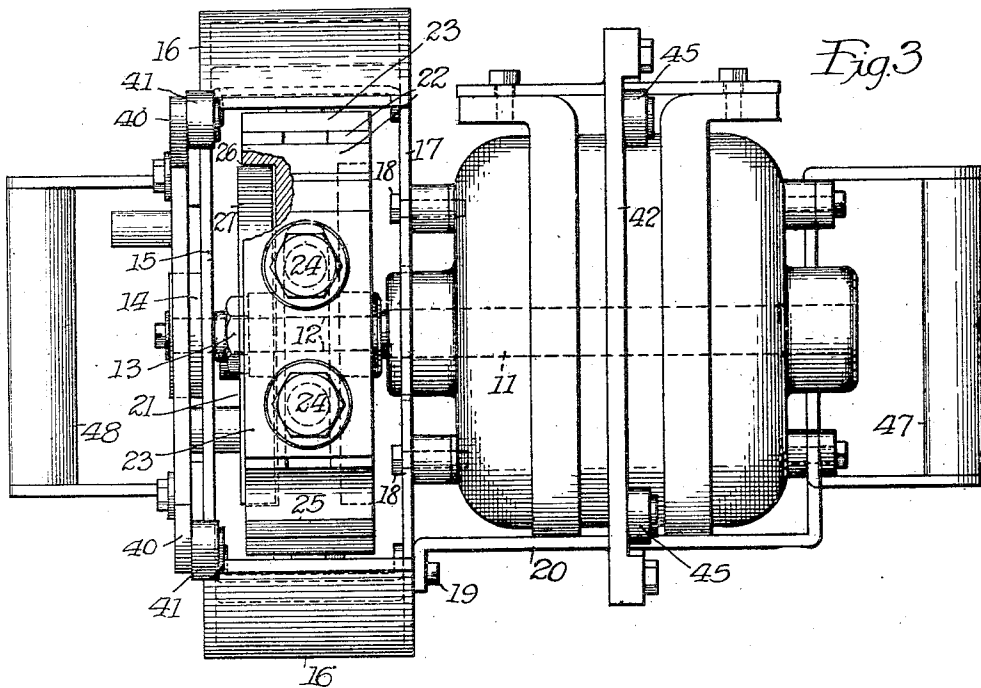


Fig. 2.

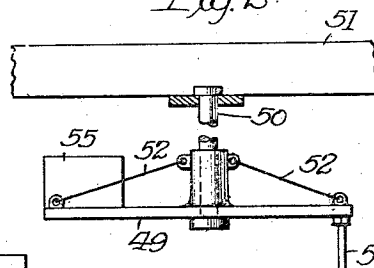
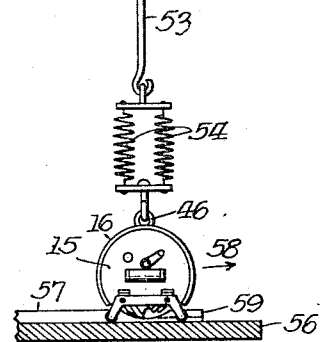
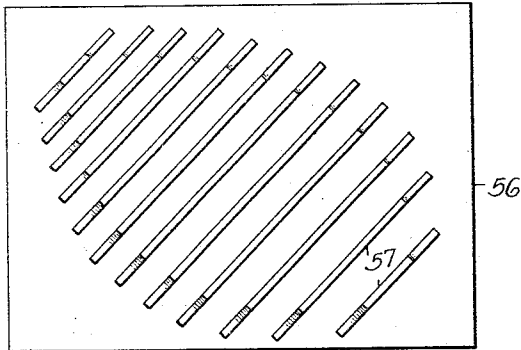


Fig. 1



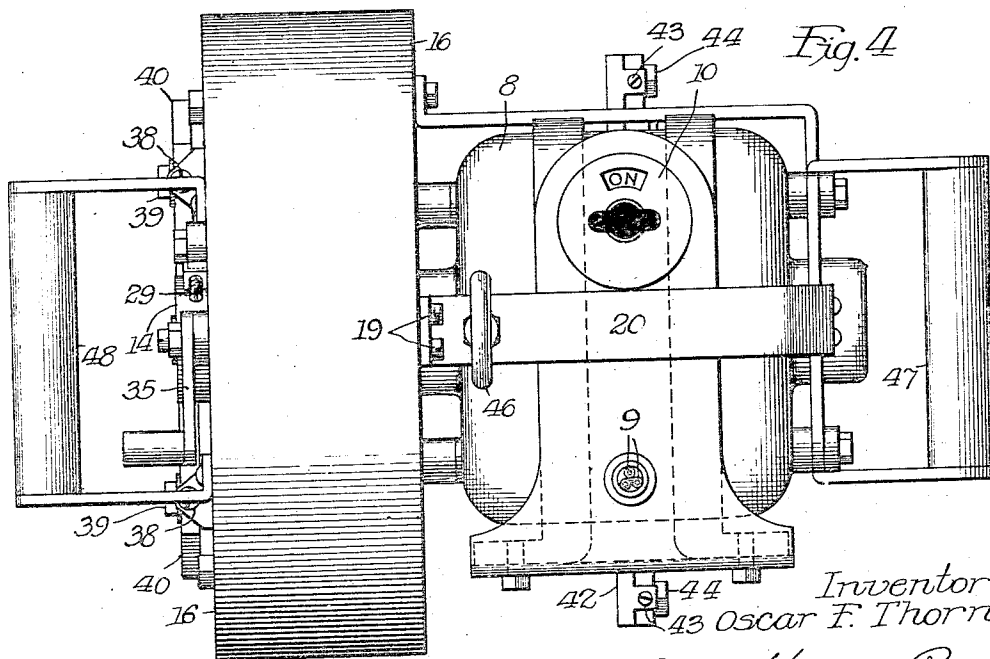
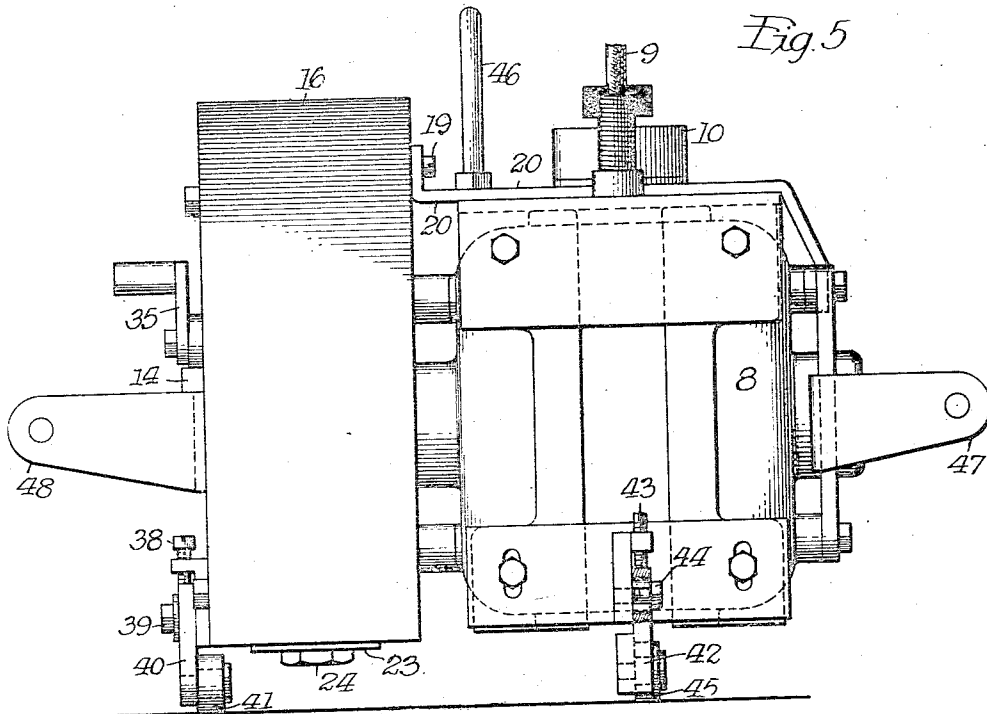
Inventor
Oscar F. Thorn

By Brown, Hanson & Coetche
Attys

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3 SHEETS—SHEET 3.

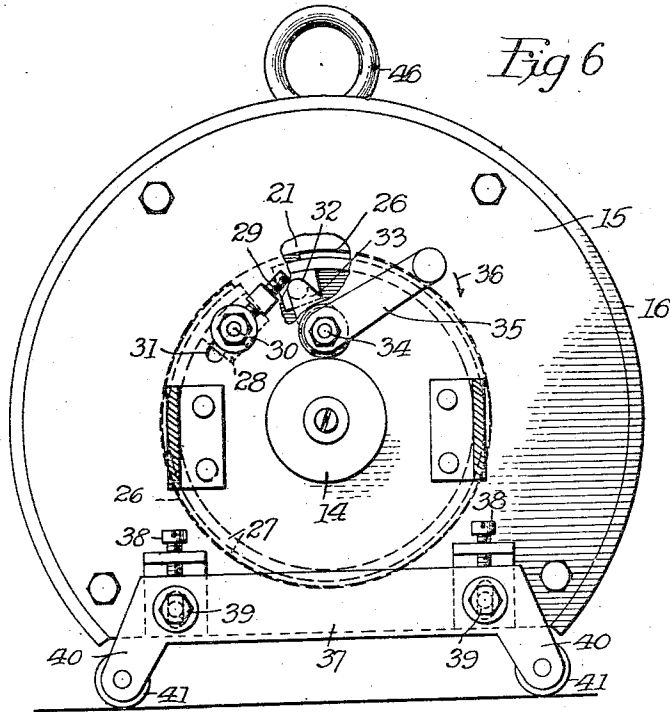


Fig 6

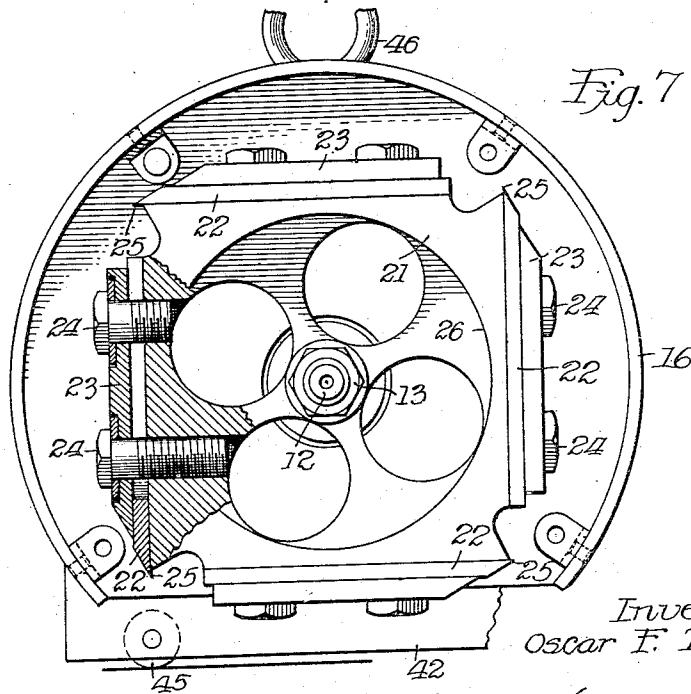


Fig. 7

Inventor
Oscar F. Thorn

By Brown, Hanson & Coettchen
Attys

UNITED STATES PATENT OFFICE.

OSCAR F. THORN, OF CHICAGO, ILLINOIS, ASSIGNOR TO GULBRANSEN-DICKINSON COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

PORTABLE PLANING-MACHINE.

1,243,460.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, OSCAR F. THORN, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented a certain new and useful Improvement in Portable Planing-Machines, of which the following is a full, clear, concise, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

My invention relates to the art of wood working and is directed specifically to portable planing machines for performing certain kinds of operation upon wood.

In order to describe my invention, I shall refer to a particular use thereof, in connection with which use my invention was developed in an effort to do by machinery what has heretofore been done by hand.

It is well known that in the art of piano manufacture the back of the sounding board is provided with a series of bracing or reinforcing strips glued in position and disposed parallel to each other in diagonal direction. It is also well known that it is the practice to cut down each of the ends of each of these bracing or reinforcing strips in the nature of an elongated chamfer or splay. This operation is most conveniently done, and probably properly done only when the strips are already secured in place upon the sounding board, a chisel being used and a templet being employed in order to guide the action of the cutting tool. As previously pointed out, this operation has heretofore been uniformly performed by hand, a tedious practice and one that consumes a great deal of time. Accordingly, my invention provides a portable device which comprises a power-driven rotary cutter which may be applied to the ends of these strips in rapid succession to splay the ends neatly and uniformly. My invention is illustrated in the accompanying drawings in which;

Figure 1 shows the back of a piano sounding board;

Fig. 2 shows the manner in which the device of my invention is employed and the structure which I provide for supporting it;

Fig. 3 is an under side view of the machine of my invention;

Fig. 4 is a plan view thereof;

Fig. 5 is a side elevational view thereof;

Fig. 6 is an end elevational view thereof; and

Fig. 7 is an interior elevational view.

It will be seen that I provide an electric motor 8, to which the flexible conductors 9, 9, lead, a switch 10 being provided upon the housing of the motor to control the application of the electric current.

The inherent structure and characteristics of the electric motor do not form part of my present invention and it will be understood by those skilled in the art that any adaptable motor may be used.

The motor shaft 11, indicated in dotted line in Fig. 3, is provided with an extension 12 upon which the rotary cutter is secured by means of the nut 13, the outer end of the extension being journaled in a bearing 14 carried in the wall 15 of a drum housing 16. The other wall 17 of this drum housing is secured to the frame of the electric motor by means of bolts 18, 18, and also by means of bolts 19 which pass through a bracket 20 secured upon the motor frame.

The rotary cutter is best shown in Fig. 7 where it will be seen that it comprises a body 21 which carries four peripheral knives 22, 22, held in place by means of clamping plates 23, 23, secured to the body by means of cap-bolts 24, 24. The cutting edges 25, 25, are all so disposed that they are equi-distant from the axis of the motor shaft and it will be seen that the path in which these cutting edges rotate extends down below the bottom of the drum housing 16.

The cutter body 21 is provided with a pocket 26 within which, as illustrated in dotted line in Fig. 6 and in full line in Fig. 3, a brake band 27 is disposed, one end of this brake band being secured to a block having arcual adjustment by means of the adjusting screw 29, and being adapted to be held in any adjusted position by means of a clamping bolt 30 passing through an arcual slot 31. The other end of this brake band is provided with a block 32 to which a crank arm 33 is connected, this crank arm extending from a crank shaft 34 bearing in the wall 15 and provided outside the hous-

ing with a crank handle 35. When the crank handle is turned in the direction of the arrow 36, it is clear that the brake band will be expanded within the pocket 26 to
 5 brake the movement of the rotary cutter.

Secured to the bottom of the wall 15 is a bracket 37, this bracket being made adjustable by means of the adjusting screws 38, 38, and being held in any adjusted position by means of the cap-bolts 39, 39. Each
 10 of the legs 40, 40, of this bracket carries a caster 41.

Upon the under side of the motor frame a generally similar bracket 42 is provided, this
 15 bracket being adjustable by means of an adjusting screw 43 near each end thereof and being held in position by means of a cap-bolt 44 at each end thereof. This bracket 42 carries the casters 45, 45 and the arrange-
 20 ment is such that the four casters 41, 41 and 45, 45, are adjusted to lie in a common plane and also made adjustable so that the plane which these casters define lies a pre-determined distance from the defined path
 25 of the rotary cutter.

A hoisting ring 46 is secured to the top of the motor frame. The motor is provided with a handle 47 and the drum housing 16 is provided with a handle 48, the two handles
 30 thus lying opposite each other, and these handles are adapted to be grasped simultaneously in applying the machine to the article upon which work is to be done. Since the combined motor and cutting device is
 35 comparatively heavy, it is desirable to support the device, at least in part, in order to make it more convenient to handle, but in nowise interfering with the portable nature of the structure. In Fig. 2 I illustrate a
 40 rotating beam 49 hung upon a pivot shaft 50 suitably suspended from an overhead rafter 51. The beam 49 is reinforced by guy-wires 52, 52, extending between the ends of the beam and the hub of the beam, and the
 45 planing machine is hung from one end of the beam by means of a hook-rod 53 through the intervention of a resilient element 54. The other end of the beam 49 is counterbalanced by means of a weight 55. In the manufac-
 50 ture, which has been described, the sounding board is placed upon a table, back up so as to expose the bracing or reinforcing strip glued thereon, as illustrated in Fig. 1. This table is placed under the beam 49 and the
 55 resilient element 54 which is employed is of such tension as to just allow the planing machine to rest upon the sounding board in such position. When it is desired to lift the planing machine the two handles are
 60 grasped and in raising the device assistance is given by the resilient element.

In Figs. 1 and 2 the sounding board is illustrated at 56 and the reinforcing or bracing strips at 57, 57. When the strips are

glued to the sounding board they are of 65 uniform cross-section throughout their entire lengths and the splaying of the ends is done after the glue is thoroughly hardened. The splay is formed by a circular gouge at a short distance from the end of the strip 70 and from the base of this gouge to the end of the strip, the strip is of uniform cross-section, the latter result being secured by planing the end of the strip outwardly from the base of the gouge and to the depth of the 75 gouge. The depth of the gouge is determined, as before indicated, by the proper adjustment of the casters and the knives, and, once it is determined how far from the end of the strip the gouge shall be, the 80 planing machine is lowered upon the strip with the rotary cutter in motion and made to descend until the casters engage the back-board itself, as clearly shown in Fig. 2. Then, as indicated in Fig. 2, the planing ma- 85 chine is moved in the direction of the arrow 58 so as to plane the outer end of the strip from the gouge outwardly, down to the dotted line 59. Each end of each strip is so treated and each such operation is quickly 90 and neatly done, all the splays being then of uniform depth and shape. If, for any reason, it should be desired to stop the cutter suddenly, the switch 10 is opened and the crank handle 35 turned to apply the 95 brake.

I claim:

1. In combination, a frame supporting a motor having a horizontal extended shaft, a rotary cutter on the extended portion of the 100 shaft, a hood for the cutter carried by the motor, reinforcing means forming a portion of said frame and assisting in supporting said hood, and cooperating means on the hood and frame to regulate the depth of cut. 105

2. In combination, a frame, a motor in said frame having an extended horizontal drive shaft, a rotary cutter carried by the extended portion of said shaft, a hood for the cutter carried by the motor, portions of 110 said frame being extended and connected to said hood to reinforce the same, and brackets adjustably carried by the hood and main frame to regulate the depth of cut.

3. In combination, a frame, a motor in 115 said frame having an extended horizontal drive-shaft, a rotary cutter on the extended portion of the shaft, a hood for the cutter carried by the motor, reinforcing means forming a portion of said frame and assist- 120 ing in supporting said hood, brackets adjustably carried by the hood and main frame to regulate the depth of cut, and casters carried by the brackets to permit movement of the machine from place to 125 place.

4. In combination, a main frame having a prime mover therein provided with an ex-

tended shaft, a rotary cutter on the shaft, a hood for the cutter carried by the prime mover, handles on said hood and prime mover to manipulate the cutter, said frame
5 having portions thereof extended to provide reinforcing straps, said straps being connected to said hood, and means for adjusting the depth of cut carried by the hood and frame.

In witness whereof, I hereunto subscribe my name this 6th day of December, A. D. 1915.

OSCAR F. THORN.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."