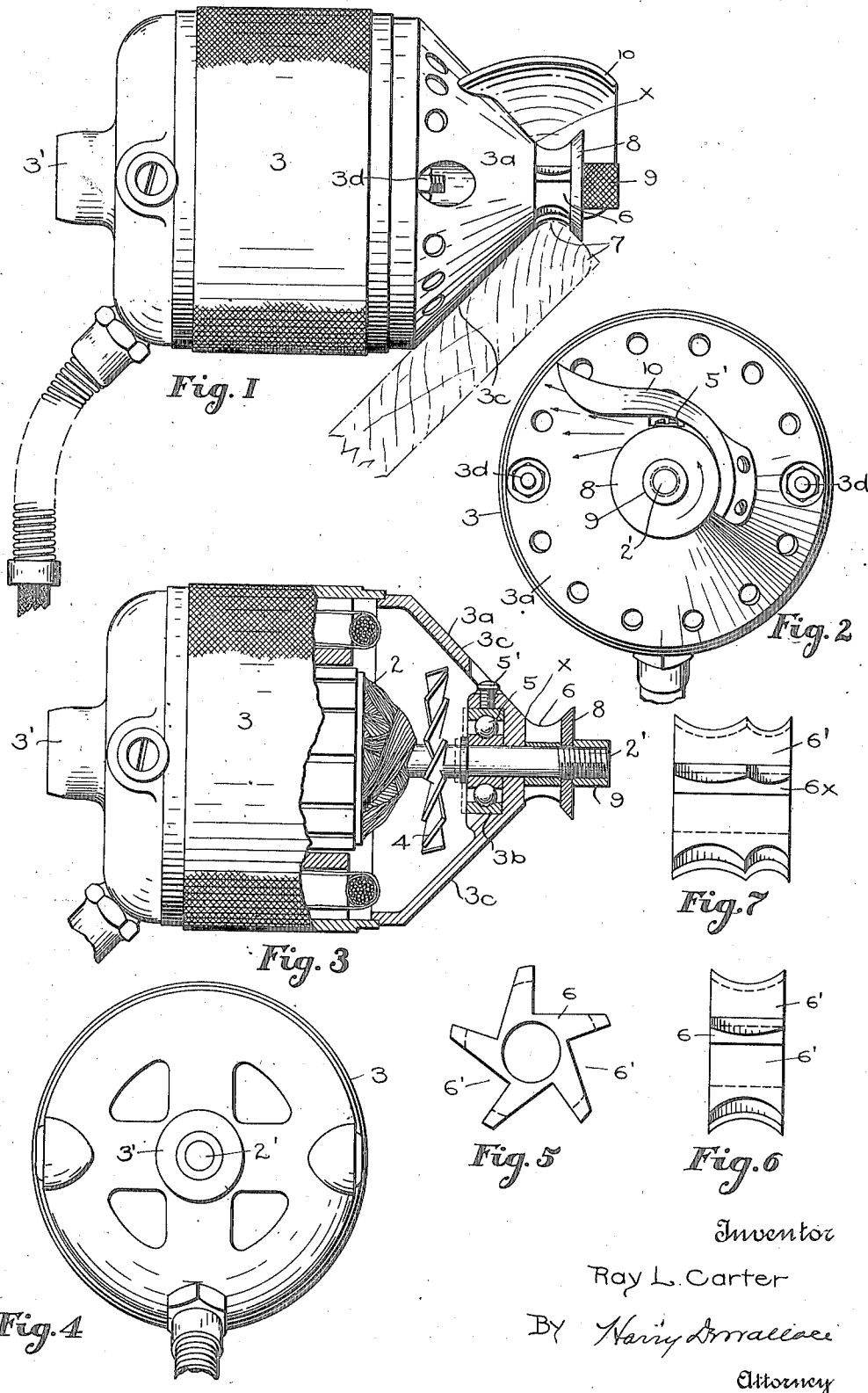


R. L. CARTER.
SHAPING DEVICE.
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Inventor

Ray L. Carter

By Harry L. Smallwood

Attorney

UNITED STATES PATENT OFFICE.

RAY L. CARTER, OF SYRACUSE, NEW YORK.

SHAPING DEVICE.

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To all whom it may concern:

Be it known that I, RAY L. CARTER, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Shaping Devices, of which the following is a specification.

This invention relates to shapers, designed for use by pattern-makers, cabinet-makers, carpenters and the like, and has for its object to provide a novel and simple device of the class for rounding and beading the corners of patterns and various other wooden articles. A further object is to provide a light, easily portable shaper, consisting of a hollow casing which encloses a high-speed electric motor, on the armature shaft of which may be mounted rotary cutters of various types, by which the corners and edges of wooden articles may be given different shapes, in a ready and quick manner. A further object is to provide a relatively small and light shaper of the class, which may be held and operated by one hand, said device being equipped with a conical head by which the device is guided and being provided with novel adjusting means for taking up looseness, as well as for facilitating the employment of cutting tools of different size.

I attain these objects by the means set forth in the detailed description which follows and as illustrated by the accompanying drawing, in which—

Figure 1 is a side elevation of the complete device in the act of shaping a piece of wood. Fig. 2 is a front end view of the same. Fig. 3 is a side elevation and partial central vertical section of the device. Fig. 4 is a rear-end view of the same. Fig. 5 is an enlarged side view of one form of cutter. Fig. 6 is an edge view of the same. And Fig. 7 is a view of a cutter employed for beading the corners of articles.

In the drawing, 2 represents the electric motor, having an armature shaft 2'. 3 is the outer casing or shell which encloses the motor, the rear end thereof being closed and provided with a hub-bearing 3', which supports the corresponding end of the armature shaft. The opposite end of the casing is open and is closed by a conical cap 3^a, which may be secured to the said open end by any suitable means. The forward end of the shaft 2' is provided with the usual fan

4, and thence extends through the reduced end of the cap 3^a, in which it is rotatable, as a bearing. The inside of the cap 3^a has a socket 3^b, in which is disposed a ball-bearing 5 for the shaft 2', the said bearing being adjustably held in place by a set-screw 5'. The projecting end of the shaft 2' is threaded, and supports a cutting-tool 6, which corresponds to the tools shown in Figs. 5 and 6, and is employed for simply rounding the corners of patterns, and the like, as shown at 7 in Fig. 1. The cutter 6 is held in place by a tapering washer 8, the taper thereof preferably registering with the adjacent parts of the tool 6. By this construction and arrangement, the tool is partially guided while performing its work, by the bevel face of the washer bearing against a flat or other adjacent surface of the work 7. The tool 6 and the washer 7 are detachably, but tightly, held in place by a sleeve nut 9 which screws on to the shaft 2'. The adjustment afforded by the set-screw 5', enables the operator to set the inner side of the tool 6 closely against the flattened end of the cap 3^a, as shown at *x* in Figs. 1 and 3. By this arrangement, the corner of the work 7 cut by the tool 6 may be made perfectly smooth where said cut intersects the adjacent plane face of the work 7, which lies against the conical guiding portion 3^c of the cap. This guiding portion is preferably formed at an angle of 45°, as shown, but of course any other desirable angle (not shown) may be employed, if the demands of the work require it. 10 represents a dust guard, which is supported by the cap 3^a, and is so positioned that it directs the shavings and dust away from the operator, as well as from the work. The arrows in Fig. 2 indicate the direction in which the cutter 6 rotates, as well as the course of the shavings and dust. The device as it appears in Fig. 2, is moved by the operator along the corner of the work from left to right. The outer medial surface of the shell 3 is preferably knurled, for aiding the hand-grip during the operation of the device.

The cutters 6 are preferably constructed as shown in Figs. 5, 6 and 7, which shows the blades or teeth formed by cutting away right angle portions indicated at 6'. By this construction and arrangement, the cutters may be readily ground or dressed by the ordinary emery wheels, or manually by

the ordinary whetstones. The cutting edges of the blades of the cutters may be formed in various shapes, for either rounding or beading or otherwise shaping the corners of the work, as shown in Figs. 6 and 7.

My shaper is extremely simple, light and compact, and for ordinary pattern and similar work need not be larger than shown in Figs. 1, 2, 3 and 4. It performs its work best when operated at relatively high speeds; is equally serviceable for shaping straight or curved corners and edges, and may be moved rapidly over the work without danger of chattering or otherwise marring the work.

Having thus described my invention, what I claim, is—

1. A shaper comprising a rotary cutter having a plurality of curved cutting blades, a shaft for driving said cutter, a pair of beveled guides arranged concentrically to said shaft and said cutter, the beveled faces of said guides being arranged tangent to the curvature of said blades, one of said guides being stationary, the other guide being rotatable with the cutter, and means for adjusting said cutter relatively to the stationary guide.

2. A shaper including a driven shaft, a rotary cutter mounted on said shaft and having curved cutting portions, a conical support for said shaft, the reduced end of said support being in frictional engagement with said cutter, and the angular face of said support being arranged tangent to the curvature of said cutting portions and serving as a guide for said cutter during the shaping operations, and a circular guide engaging the opposite side of said cutter and having an angular face arranged tangent to the curvature of said cutting portions.

3. A shaper comprising a driven shaft, a support for said shaft, said support having a circular beveled surface, a rotary cutter mounted on said shaft, said cutter having a plurality of curved cutting blades one side of said cutter engaging said support, a beveled guard engaging the opposite side of said cutter, and the angular faces of said support and said guard being arranged at right angles to each other.

4. A shaper including a driven shaft, a stationary conical support for said shaft having a bearing face, a guide having a beveled face mounted on said shaft and spaced from said support, a rotary cutter having radial blades mounted on said shaft between said support and said guide and engaging both of said parts, the angular faces of said support and said guide being arranged at right angles and registering with the blades of said cutter.

5. A rotary shaper comprising a motor driven shaft, a circular cutter having curved cutting edges mounted on said shaft, a cylindrical casing enclosing the motor and having a conical portion whose angular surface is disposed tangent to the curvature of said cutting edges, and a washer mounted concentrically to the cutter and having a beveled surface whose plane is arranged at right angles to the plane of said conical portion.

6. A rotary shaper, comprising a motor-driven shaft, a circular cutter having curved cutting edges mounted on said shaft, and a casing enclosing the motor and having a conical portion whose angular surface is disposed tangent to the curvature of said cutting edges.

In testimony whereof I affix my signature.
RAY L. CARTER.