C. F. O. ROYAL & E. E. THOMAS.

HAND GAIN CUTTING TOOL.

APPLICATION FILED AUG. 7, 1917.

1,262,601. Patented Apr. 9, 1918.

Fig. 1.

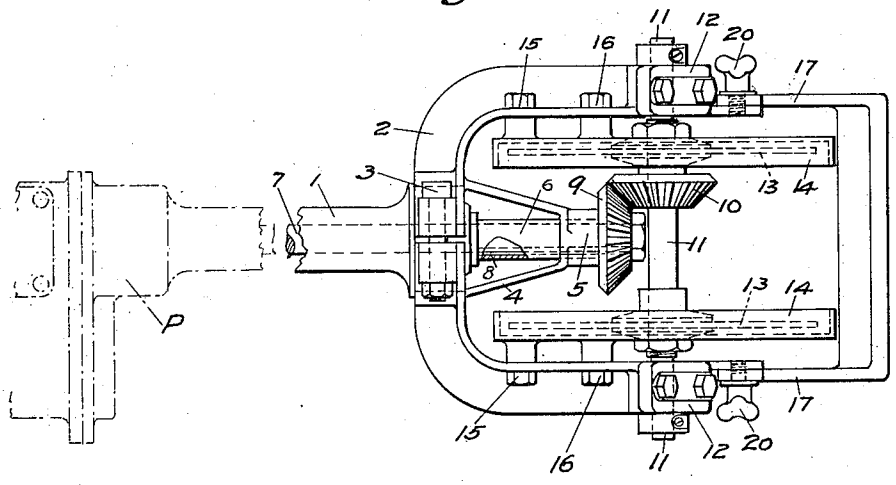
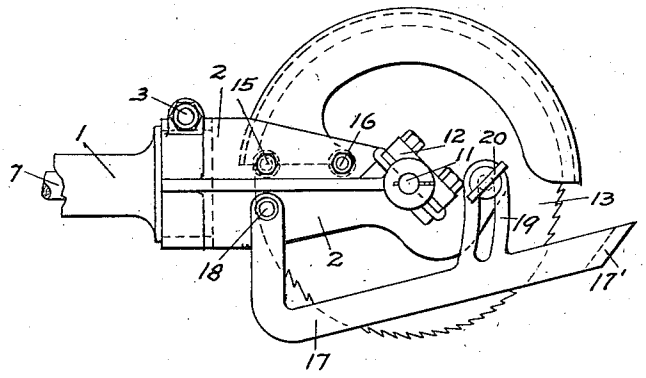


Fig. 2.



Charles F. O. Royal and
Edwin E. Thomas
Inventor.

By Whitmore & Whitmore
Atty.

UNITED STATES PATENT OFFICE.

CHARLES F. O. ROYAL AND EDWIN E. THOMAS, OF PORTLAND, OREGON, ASSIGNORS, BY DIRECT AND MESNE ASSIGNMENTS, OF ONE-HALF TO SAID ROYAL AND ONE-HALF TO L. A. JACOBSEN, OF PORTLAND, OREGON.

HAND GAIN-CUTTING TOOL.

1,262,601. Specification of Letters Patent. Patented Apr. 9, 1918.

Application filed August 7, 1917. Serial No. 184,919.

To all whom it may concern:

Be it known that we, CHARLES F. O. ROYAL and EDWIN E. THOMAS, citizens of the United States, residing in the city of Portland, county of Multnomah, and State of Oregon, have invented certain new and useful Improvements in Hand Gain-Cutting Tools, of which the following is a specification.

Our invention relates to hand gain-cutting tools, and more particularly to a portable tool, especially adapted for cutting gains or notches in spaced timbers, into which are to be embedded connecting strips, or braces, for holding said spaced timbers or ribs in fixed positions and for adding strength generally to the structure in which said strips, or braces, are embedded. Our invention is especially well adapted for use in cutting gains, or notches, in the edges of the ribs of wooden vessels in order that strengthening strips or brace members may be set therein flush with the outer surface of said ribs, or timbers.

Among the salient objects of our invention is to provide a practical, portable hand tool of the character referred to, which can be used in various positions with the greatest convenience and with perfect safety to the workman using the same.

In order to more clearly explain our invention, we have illustrated one practical embodiment thereof on the accompanying sheet of drawings, which we will now describe.

Figure 1 is a top plan view thereof, with a portion of a motor shown in light dot and dash lines; and

Fig. 2 is a side elevation of the invention, as illustrated in Fig. 1.

Referring now more in detail to the drawings, 1 designates a combination hand grip and bearing sleeve upon the end of which is adjustably mounted a supporting yoke 2, said yoke being adapted to be held in adjusted positions by means of a bolt 3. Formed as a part of said yoke 2, is a supporting bracket 4, in the bearing box 5 of which, is mounted a sleeve 6, keyed to the driving shaft 7, as at 8, which extends through the combination hand grip and bearing sleeve 1. A beveled gear 9, is secured to said sleeve 6, and meshes with and drives a beveled gear 10, keyed on a shaft 11, having bearings at its opposite ends, as at 12—12, in the ends of the yoke 2.

Mounted on said shaft 11, at a space apart, are two circular saws 13—13, shown in dotted lines in Fig. 1, and one of which is seen in full lines in Fig. 2. Said saws may be mounted on the shaft in any of the well-known ways. Secured to the inner sides of the yoke 2, are saw guards 14—14 each being held in place over the saw by means of holding bolts 15 and 16. By removing the bolt 16, the saw guard can be turned backwardly on the bolt 15, out of the way without the necessity of wholly detaching it from the yoke 2. Mounted on the under side of said yoke 2, is a guide yoke, or gage, 17, pivotally secured, as at 18, to the opposite outer sides of said yoke 2, as clearly shown in Fig. 2, said yoke being provided with a slotted arm 19, on each side thereof, whereby it can be adjustably secured to the outer ends of the yoke 2, as by means of thumb nuts 20—20. Said guide yoke 17, is slanting, or beveled, as at 17′, at its outer end, whereby it can be pushed easily over the edges of the spaced ribs, or timbers, on which the tool is being used, said guide yoke sliding across the edges thereof, from one to the other, sled-runner fashion, as the tool is pushed along by hand. Thus it will be understood that the saws 13—13 will cut notches, or gains, in the timbers, or ribs, over which the tool is moved, to a depth according to the position at which guide yoke 17, is set relative to the saws.

While we have indicated in light dot-and-dash lines a pneumatic power mechanism P, it is to be understood that any motive power may be used for driving the power shaft 7 of our tool.

By providing a carrying yoke 2, which is adjustable around the end of the sleeve 1, said yoke and saws can be adjusted for use in different positions without the necessity of turning the power mechanism, thus allowing the weight thereof to always hang down directly beneath the axis thereof. It will be evident that as the carrying yoke 2 is turned about the end of the sleeve 1, the beveled gear 10, carried by the shaft 11, will simply roll around on the beveled gear 9, thus making it possible to turn the yoke 2, on the sleeve 1, to any position whatever,

without the necessity of adjusting any other parts.

While we have shown and described one practical embodiment of our invention, we are aware that changes in the details thereof can be made without departing from the spirit thereof, and we do not, therefore, limit the invention to the details as here shown, except as we may be limited by the hereto appended claims forming a part thereof.

We claim:

1. In a hand tool, a combination hand grip and bearing sleeve adapted for manually supporting and operating said tool, a yoke mounted to be turned to different positions thereon, a driving shaft mounted through said hand grip and bearing sleeve, a tool shaft mounted cross-wise in said yoke at right angles to said driving shaft, driving connections from said driving shaft to said tool shaft, and spaced cutting tools mounted on said tool shaft and driven thereby.

2. In a hand tool, a combination hand grip and bearing sleeve adapted for manually supporting and operating said tool, a yoke mounted to be turned to different positions thereon, a driving shaft mounted through said hand grip and bearing sleeve, a tool shaft mounted cross-wise in said yoke at right angles to said driving shaft, driving connections from said driving shaft to said tool shaft, spaced cutting tools mounted on said tool shaft and driven thereby, a guide member adjustably mounted adjacent said cutting tools for regulating the cutting depth thereof, and a guard over said cutting tools.

3. A hand tool of the character referred to comprising in combination a bearing sleeve, a yoke mounted on the end thereof and adapted to be turned to different positions thereon, a driving shaft mounted through said bearing sleeve and said yoke, a beveled gear driven by said shaft, a saw shaft mounted crosswise in said yoke, a beveled gear secured thereto and in mesh with the beveled gear driven by said driving shaft, circular saws secured to said saw shafts at a space apart, and guard members secured to said yoke over said saws, substantially as described.

4. A hand gain-cutting tool of the character shown and described, comprising a combination hand grip and bearing sleeve, a yoke adjustably secured to the end thereof and adapted to be turned to different positions and provided with a bearing bracket therein, a driving shaft mounted through said sleeve and said bearing bracket, a beveled gear mounted on the end thereof, a saw shaft mounted transversely through said yoke, a beveled gear secured thereto and in mesh with the beveled gear driven by said driving shaft, circular saws secured to said saw shaft at opposite sides of said beveled gears, saw guards secured to said yoke and overlying said saws, and a guide member adjustably secured to said yoke adjacent said saws for regulating the depth of the cut of said saws, substantially as described.

Signed at Portland, Multnomah county, Oregon, this 31st day of July, 1917.

CHARLES F. O. ROYAL.
EDWIN E. THOMAS.

In presence of—
I. M. GRIFFIN.