(No Model.)

T. F. HAGERTY.

CENTER BIT.

No. 567,977. Patented Sept. 22, 1896.

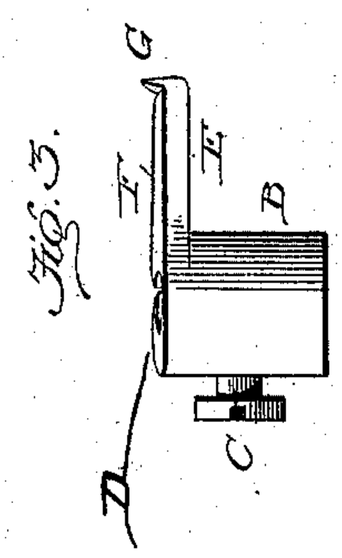

Fig. 3.

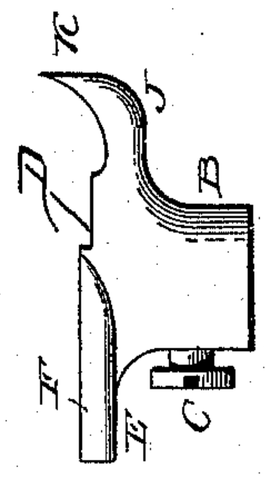

Fig. 5.

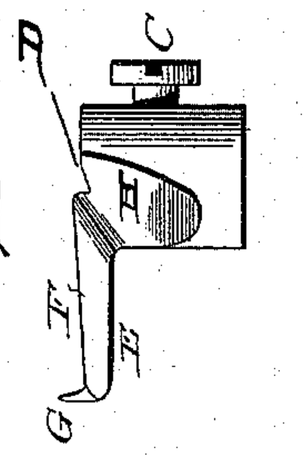

Fig. 2.

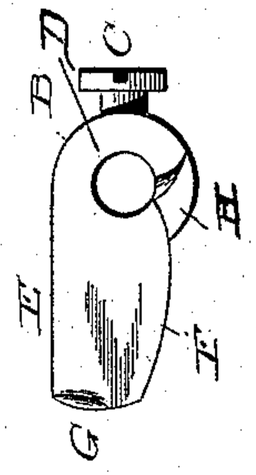

Fig. 4.

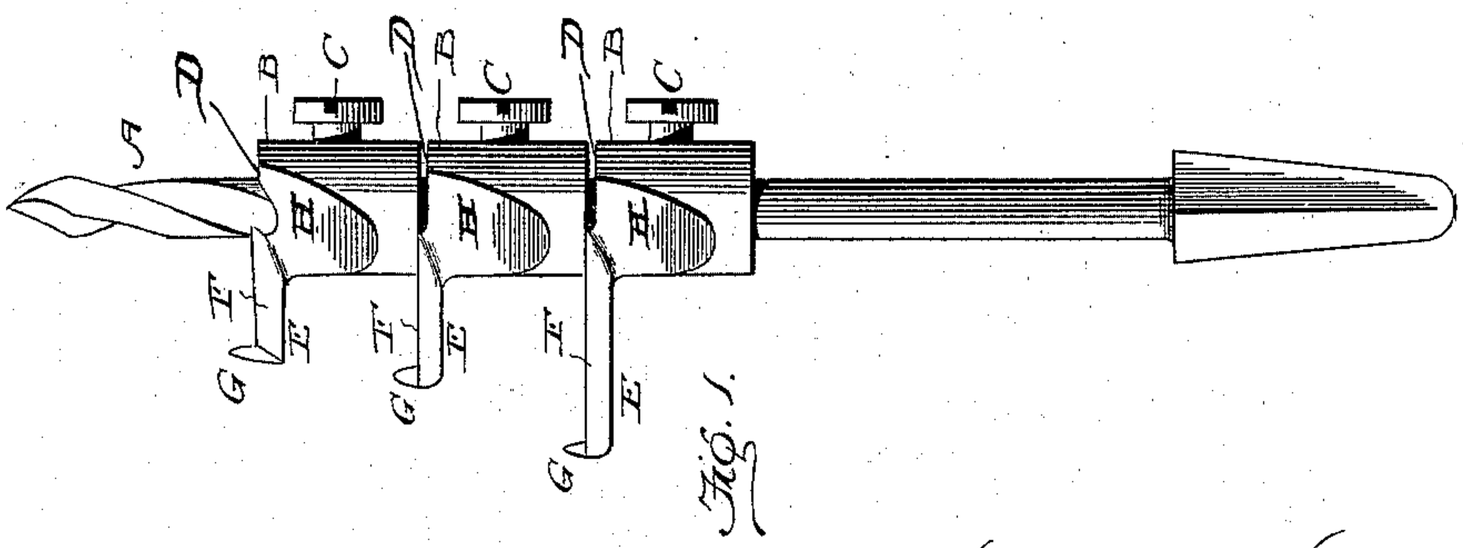

Fig. 1.

Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS F. HAGERTY, OF SAN FRANCISCO, CALIFORNIA.

CENTER-BIT.

SPECIFICATION forming part of Letters Patent No. 567,977, dated September 22, 1896.

Application filed January 13, 1896. Serial No. 575,946. (No model.)

To all whom it may concern:

Be it known that I, THOMAS F. HAGERTY, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Center-Bits; 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.

My invention relates to improvements in center-bits, and has special reference to a center-bit having a detachable cutting-blade.

One object of my invention is the provision of a detachable bit adapted to be made in various sizes, and which may be used in connection with an ordinary twist-drill to bore round openings of any size.

Another object of my invention is the provision of a bit which can be used for any character of boring, and which will remove the wood with a clear shear cut, and thus prevent tearing or splitting of the material.

Another object of my invention is the provision of a bit which can be quickly and easily applied or removed, which will not tear the wood or allow impact or clogging, and which will be of simple, durable, and inexpensive construction, thus possessing the features of merit to commend it as thoroughly practical.

To attain the desired objects, my invention consists of a center-bit embodying novel features of construction and combination of parts, substantially as disclosed herein.

Figure 1 represents a side elevation of a twist-drill, showing one or more of my center-bits applied. Fig. 2 represents a side view of the bit detached, on an enlarged scale. Fig. 3 represents a similar view from the opposite side of the bit. Fig. 4 represents a plan view of the bit, and Fig. 5 represents a side view of a modified form of my bit.

In the drawings, A designates a twist-drill of well-known form in common use and in connection with which I use my center-bit.

My bit is of extremely simple and inexpensive construction and comprises the round body B, adapted to be secured or attached to the twist-drill by means of a set-screw C, and the body is formed with the shoulder or flat abutment D, and from one side of the body extends the arm E, formed with the blade or cutter F, which blade or cutter is disposed or arranged at an incline to the shoulder and carries at its free end the scoring-lip G. The blade or cutter is preferably slightly rounded to give a shear cut, and at its inner end curves inward and joins the throat or passage H, formed in the body. From this construction it is evident that the bit acts after the manner or upon the same principle as a plane, the cutter removing the wood with a clear shear cut and passing it out through the throat or channel formed in the body, and the depth of the cut is limited or gaged by the flat face or abutment formed by the lower end of the hub or body on the opposite side of the axis from the cutting-lip.

The angle, rake, or incline that should be given to the face of the cutter determines in part how thick the shaving should be; yet if there were no other means of regulating the depth of cut the pressure applied would cause the edge to dig into the wood. In augers this is regulated by the tapering gimlet-point screw, which limits the thickness of shaving to the pitch of the thread.

I employ a twist-drill as a carrying-shaft for the various sizes of cutters, because of the fact that I am enabled to secure the cutter at any place between the point and the shank, and I obtain a long point beyond the cutting edge, which is very desirable when cutting on an angle, as, for instance, in the work of boring the hand-railing of stairs to insert the baluster-tops.

When in use, the twist-drill bores the center hole, the shavings passing down grooves and partly out at the throat of the bit. In practice it is desirable to leave the drill-point about an inch or more or less in advance of the cutter, insuring the passage of the drill without choking. The cuttings remaining in the grooves of the drill prevent side motion or wabbling. The cutting-blade of the bit removes the shaving in a spiral form, and as it is compelled to follow equidistance from the axis a true hole is bored without the aid of a worm or other means to guide it.

By the construction of this invention I am enabled to bore holes of all sizes in the hardest kind of wood, as true and smooth as though they were turned out in a lathe, with

the least possible labor or friction and in one-quarter the time heretofore employed by other bits.

By the simple construction of the cutting-blade I am enabled to give it a hard temper, such as is given to chisels and plane-irons. As it can be ground on a grindstone when dull, a sharp cutting edge is always insured.

By the simplicity of manufacture I am enabled to furnish a bit of any size for one-tenth the cost of other bits to do similar work.

I do not confine myself to the use of the twist-drills as now in use in combination with my cutter, as I can have the shanks made longer for deeper holes, nor do I confine my invention to the use of one cutting-arm carrying a scoring-lip, as it is obvious that I can employ a second arm J, carrying an independent scoring-lip K; but I prefer the single arm for simplicity of construction.

I claim—

1. A detachable and adjustable cutter having a perforated hub or body adapted to receive and be adjusted upon a smooth cylindrical auger-bit, said hub having a laterally-projecting blade-arm and having its end surface in a plane in the rear of the cutting-plane of the arm forming a cut-gaging surface, in combination with a plain twist-drill or similar bit of plain cylindrical form.

2. A detachable or adjustable cutter having a perforated hub or body adapted to receive and be adjusted upon a smooth cylindrical auger-bit, said hub having a laterally-projecting blade-arm and having its end surface in a plane in the rear of the cutting-plane of the arm forming a cut-gaging surface, in combination with a plain twist-drill or similar bit of plain cylindrical form, and a fastening-screw passed through the hub into the twist of the drill.

In testimony whereof I affix my signature in presence of two witnesses.

THOMAS F. HAGERTY.

Witnesses:
F. M. HEATON,
D. P. MOORE.