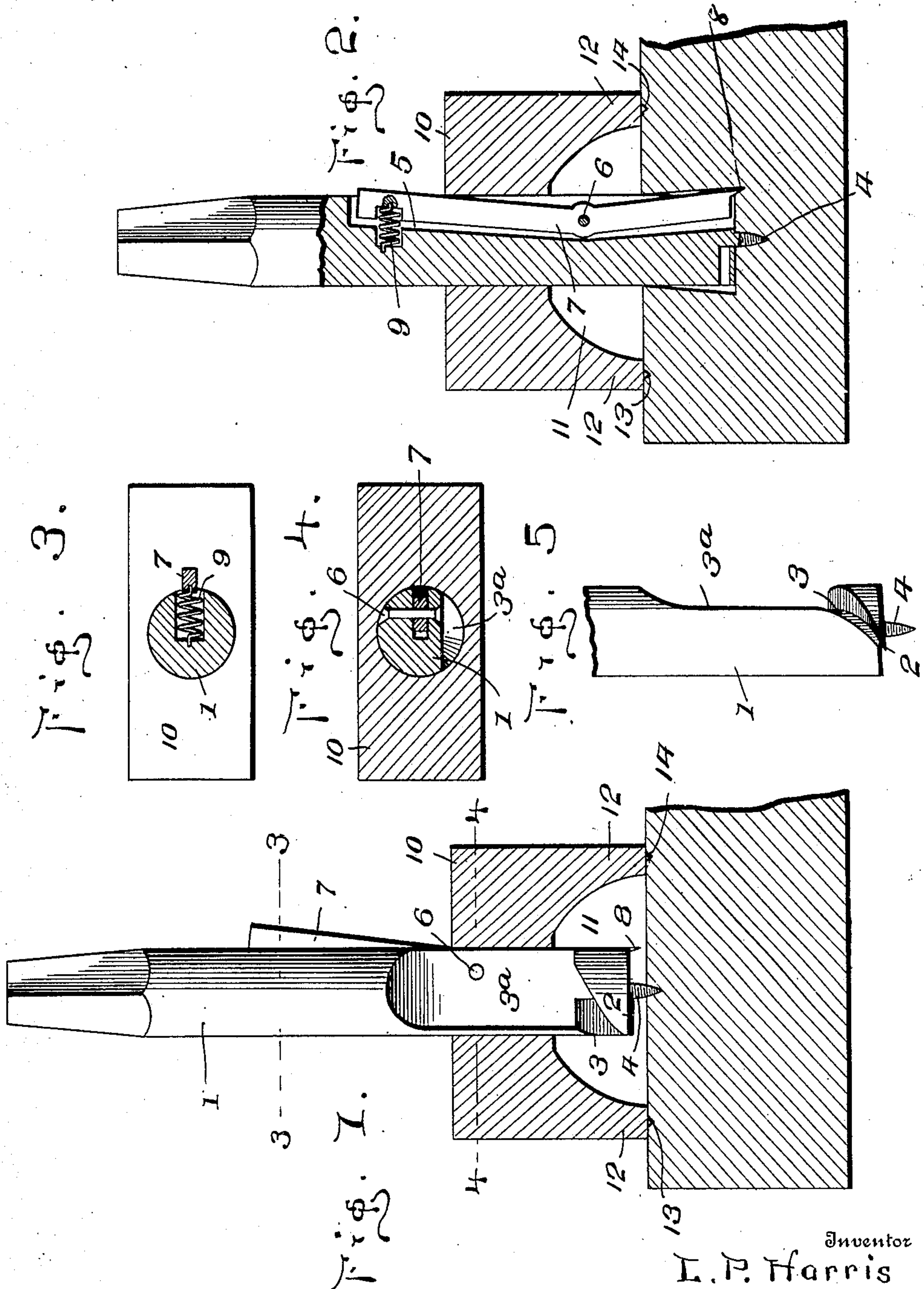


L. P. HARRIS.  
 AUGER BIT.  
 APPLICATION FILED JULY 18, 1908.

925,903.

Patented June 22, 1909.



Witnesses

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# UNITED STATES PATENT OFFICE.

LAWRENCE P. HARRIS, OF TERRELL, TEXAS.

## AUGER-BIT.

No. 925,903.

Specification of Letters Patent.

Patented June 22, 1909.

Application filed July 18, 1906. Serial No. 326,756.

*To all whom it may concern:*

Be it known that I, LAWRENCE P. HARRIS, a citizen of the United States, residing at Terrell, in the county of Kaufman and State of Texas, have invented certain new and useful Improvements in Auger-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 boring or hole-forming instruments, as an auger or bit, and consists of certain novel features of combination and construction of parts as will be hereinafter clearly set forth.

The objects and advantages will be hereinafter made clearly apparent, reference being had to the accompanying drawings which are made a part of this application and in which:

Figure 1 shows a side elevation of my auger bit and also showing in section the controlling member cooperating with the bit to produce a hole which will be larger at its inner end. Fig. 2 shows a sectional view illustrating the position of my boring instrument or bit after the hole formed thereby is almost completed. Fig. 3 is a transverse section of Fig. 1 on line 3—3. Fig. 4 is a similar view taken on line 4—4 of Fig. 1, and, Fig. 5 is an elevation of the lower end of the bit, at a different angle from that shown in Fig. 1.

Referring to the details and cooperating accessories by numeral, 1 indicates the shank or body portion of my improved bit, which is provided at its lower end with a cutting blade 2. A channel 3 is formed in one side of the body, said channel being preferably spirally disposed upwardly from the cutting blade and terminates in an elongated depression or cut away portion 3<sup>a</sup> through which is adapted to escape the shavings, particles of wood etc., loosened by the cutting blade 2 of the auger, said cutting blade being formed substantially in the usual manner. My bit is also provided with the usual guiding point 4 threaded as is common with boring instruments, whereby it will take into the wood and center the instrument or hold the cutting blade or blades to their work. I also provide in the shank or body portion 1 a longitudinal seat as indicated by the numeral 5 and in the lower end of said seat I pivotally mount upon the

transversely-disposed rivet rod or pin 6 my auxiliary or reaming bit 7, preferably slightly bent at said pivot point and provided at its lower end with the cutting tooth 8 for a purpose hereinafter particularly specified. The upper end of the auxiliary bit or reamer 7 is held normally outward by the spring 9 interposed between said upper end and the inner wall of the seat 5 as clearly shown in Figs. 2 and 3, it being understood that said spring may be spiral or of other form deemed most suitable for the purpose, the object being as above stated, to hold the outer end of the reamer bit normally outward and incidently hold the inner end thereof normally inward.

Designed to cooperate with my improved bit and more especially with the upper end of the reamer bit 7 is the guiding member or block 10, which may be of any preferred shape or outline, though preferably formed in the manner illustrated, said guiding block having an opening of proper size to snugly receive the body of the bit and it is therefore obvious that when the bit is forced through the opening incident to the use thereof the walls of the aperture in the guiding block will engage the protruding edge of the upper end of the reamer bit 7 and cause the same to gradually move inward within the recess 5 as the bit is forced downward through the opening, the result being that as the bit gradually enters through the opening in the guiding block the lower end or cutting tooth 8 of the reamer bit will be moved away from the center of the bit whereby the tooth 8 will take into the contiguous part of the wall of the opening formed by the cutting blade 2 of the bit proper and thereby gradually increase the circumference of the opening insuring that the inner end of the opening will be of greater diameter than the outer end thereof.

Since the cutting tooth 8 initially follows the same circle described by the outer edge of the cutting blade 2 it will in no wise increase the diameter of the initial part of the opening, but as the bit enters into the wood the outwardly-inclined face of the upper end of the reamer bit will be brought into engagement with the periphery of the opening in the guiding block 10, thus insuring that the cutting tooth 8 will be immediately, though slightly moved outward sufficient to begin to enlarge the opening as soon as the tooth 8 shall have fairly entered the opening formed by the bit blade proper.

By reference to Figs. 1 and 2 it will be



seen that the guiding block 10 is hollowed out upon its inner side whereby the opening 11 is provided for the ready escape of the shavings etc. produced by the instrument, thus rendering it unnecessary to provide the channel 3 throughout the entire length of the bit though I reserve the right to form the bit in any manner as I may deem most desirable in practice. It will thus be seen that the guiding block is so formed that it will be provided with a pair of supporting legs or terminals 12 and if deemed desirable the friction points 13 and 14 may also be provided so as to hold the block against turning with the bit thereby insuring that it will reliably perform its office of controlling the reamer bit 7 to properly guide the cutting tooth 8 whereby a hole is formed by the cooperating part of the instrument which will be larger at its inner end, thus adapting the opening for receiving a properly formed dowel as the end of a spoke so that said end may be secured in a hole against casual displacement incident to shrinkage of the parts or other causes.

It will be understood that the parts of my invention may be formed of any preferred material and may be of varying sizes to adapt it for all of the uses for which such an instrument will be desirable and while I have described the preferred combination and construction of parts I wish to comprehend such substantial equivalents and substitutes as may be considered as falling fairly within the scope of my invention.

It is deemed important that the spring 9 be arranged at the other end of the reaming bit and above its pivot whereby the cutting point 8 is normally held within the seat of the shank, and as the boring progresses the upper end of the reaming bit is gradually forced inward by pressure brought to bear upon the

upper end of the reaming bit above its pivot and in proximity to the spring whereby the outward movement of the cutting tooth 8 is gradual but positive, and liability of injury to the parts is reduced to a minimum.

Having thus fully described my invention, what I claim as new and desire to secure by Letters Patent, is:

As an improved article of manufacture the herein described boring instrument comprising a boring bit having a centering terminal and cutting blade at its lower end, and its shank formed on one side with a channel spirally disposed upward from the cutting blade and terminating in an elongated depression, said shank being formed also at one side parallel with said depression with a longitudinal seat tapered in opposite directions from a point intermediate its ends, an auxiliary bit pivotally mounted between its ends within said seat, said auxiliary bit being bent at its pivot point and inclined outwardly in opposite directions from said pivot and provided at its lower end with a cutting tooth, a spring disposed within said seat with one end secured to said shank and the other end secured to the upper end of the auxiliary bit within the seat, and a guiding member for said shank, through which said shank loosely and slidingly passes, the wall of the bore of said guiding member engaging the portion of the auxiliary bit above its pivot, as and for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

LAWRENCE P. HARRIS.

Witnesses:

M. ALEXANDER,  
C. B. PLOTTS.