No. 677,403. Patented July 2, 1901.

J. B. DRISKILL.

POST HOLE AUGER.

(Application filed Aug. 11, 1900.)

(No Model.) 2 Sheets—Sheet 1.

Fig. 1.

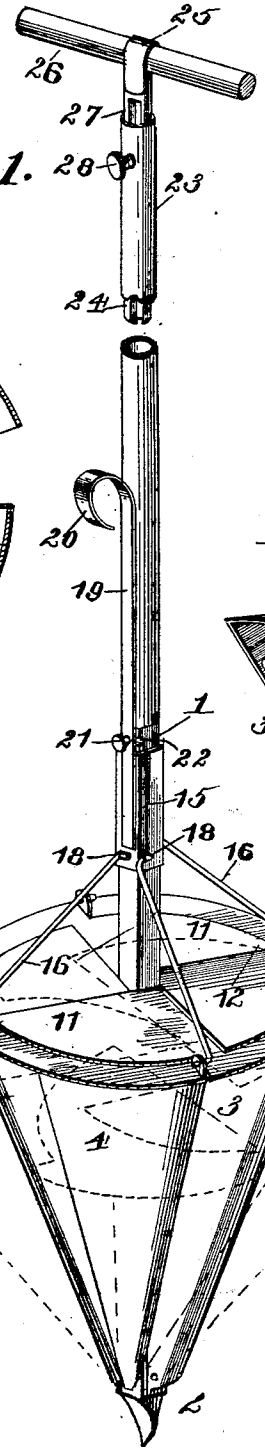



Fig. 3.

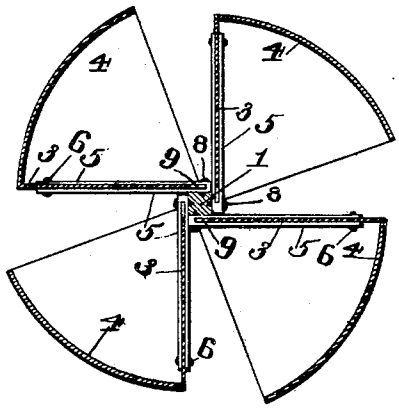
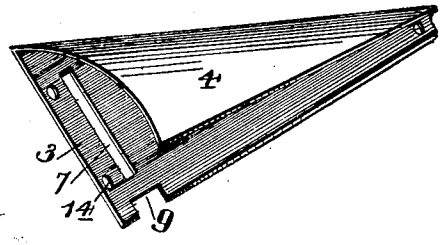



Fig. 4.




Witnesses
G. A. Walmsley.
Clarence Shaw.

Inventor:
J. B. Driskill
by Munn & Co
Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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Fig. 2.

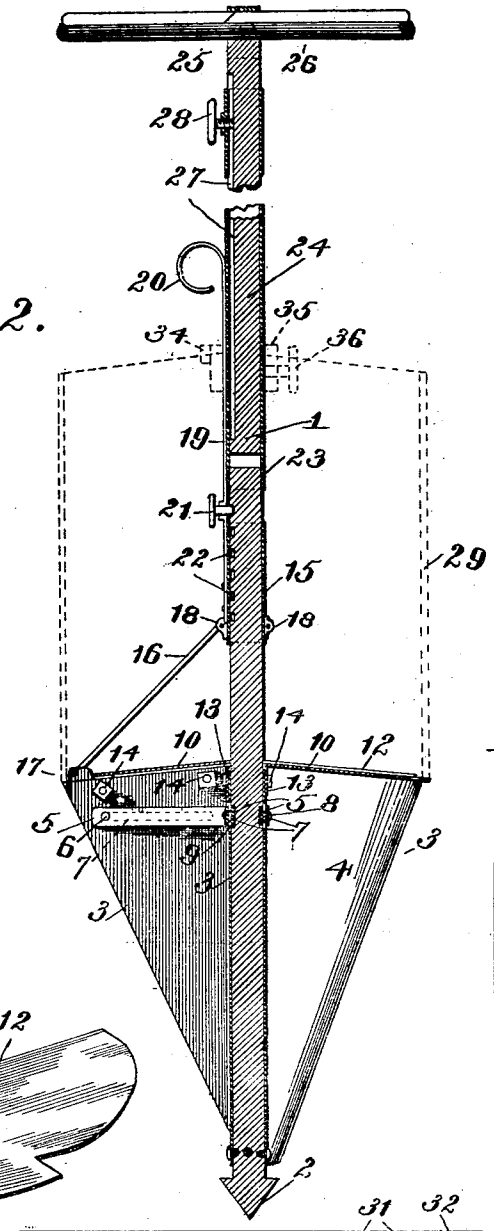



Fig. 6.

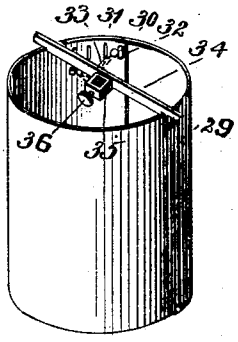



Fig. 5.

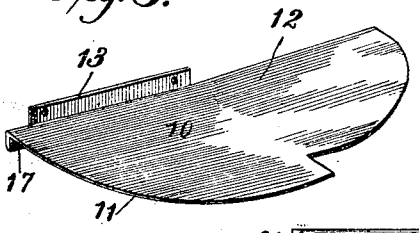
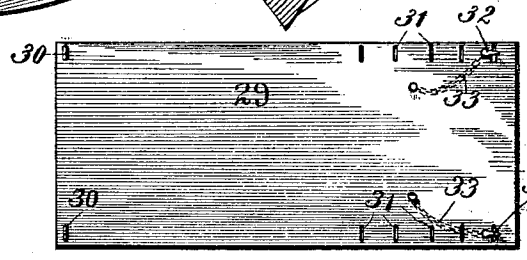



Fig. 7.




Witnesses

G. F. Walmsley.

Clarence Shaw.

Inventor

J. B. Driskill,

by Mears & Co

Attorneys

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

# UNITED STATES PATENT OFFICE.

JAMES BYRON DRISKILL, OF HENDERSON, KENTUCKY.

## POST-HOLE AUGER.

SPECIFICATION forming part of Letters Patent No. 677,403, dated July 2, 1901.

Application filed August 11, 1900. Serial No. 26,641. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES BYRON DRISKILL, a citizen of the United States, residing at Henderson, in the county of Henderson and State of Kentucky, have invented a new and useful Post-Hole Auger, of which the following is a specification.

My invention relates to post-hole augers; and it has for its object to produce a device of this kind which can be adjusted to bore holes of different diameters and also to provide it with an extensible handle and with a removable bucket when desired.

With these objects in view my invention consists in the improved construction and novel arrangement of parts of a post-hole auger, as will be hereinafter more fully set forth.

In the accompanying drawings, in which the same reference-numerals indicate corresponding parts in each of the views in which they occur, Figure 1 is a perspective view of my improved post-hole auger, the parts being shown in their closed or smallest position in full lines and extended or in their greatest expansion in dotted lines. Fig. 2 is a longitudinal sectional view of the same, the extension-bucket being shown in dotted lines. Fig. 3 is a transverse sectional view through the upper ends of the cutters. Fig. 4 is a perspective view of one of the cutters detached. Fig. 5 is an inverted perspective view of one of the covers for the cutters. Fig. 6 is a perspective view of the extension-bucket, and Fig. 7 is a blank from which the same is formed.

Referring more particularly to the drawings, 1 indicates the main shaft, which is preferably angular in cross-section and has its lower end provided with a bit 2, which is preferably formed from steel and is slightly twisted for entering the earth more readily. Pivotally secured to each face of the shaft directly above the bit is a cutter 3. There are preferably four of these cutters upon the four faces of the shaft, and each of them tapers from the bottom to the top and is formed substantially V-shaped in cross-section, one of the sides lying in the plane of the side of the shaft to which it is secured, and the other side being preferably slightly curved, as shown at 4, so that in operation the different cutters will follow each other around in a circle and cut the hole of the desired diameter.

Secured to each side of the shaft at the top of the different buckets are two wings or arms 5, between which the upper edge of the flat side of the bucket is adapted to move as the buckets are moved out and in to adjust them to the size of the hole which it is desired to dig. The outer end of these arms are secured at the desired distances apart by means of a bolt 6, which passes through a slot 7 in the upper portion of the side of the bucket. These arms are preferably formed by folding a strip of metal upon itself and securing the folded end to the side of the shaft by means of a bolt 8. To permit the inner edge of the flat side of the bucket to move in past said bolt, the edge of the side or wing is cut away, as shown at 9.

A top or cover 10 is secured to the upper edge of each flat side or wing of the bucket and has its outer end curved, as shown at 11, to substantially correspond with the curvature of the other wing of the bucket. If desired, the end of each cover may be extended, so as to overlap the main portion of the cover over the bucket adjacent thereto, as shown at 12, so that when the buckets are in their extended position the extension of the cover will be withdrawn from the adjacent bucket and will cover the greater area of its own bucket formed by being swung outward at its upper end from the shaft. These covers are preferably detachably secured to the buckets—as, for instance, by means of a flange 13 and a bolt or bolts 14 through the flange into the side of the bucket.

Mounted upon the shaft above the top of the buckets is a slide 15, to the lower end of which are preferably secured a series of rods or braces 16, the outer end of each of which is pivotally secured to the top of one of the buckets or cutters 4. A convenient means for pivotally securing said rods is by bending their ends in opposite directions and passing them through loops or eyes 17 and 18 upon the lower end of the slide and at the outer edge of the cover, respectively. The slide may be moved back and forth upon the shaft and secured in its desired adjusted positions by any suitable means, although I prefer to secure a strip 19 of flexible material at its

lower end to the slide and provide its upper end with a coil 20 or other suitable handhold. The intermediate portion of said strip is provided with a pin 21, which is adapted to fit into recesses or transverse notches 22 upon the side of the shaft and prevent longitudinal movement of the slide until after the pin has been withdrawn by bending the top of the spring outward.

An extension 23 is secured to the upper end of the shaft 1, within which is arranged a telescopic section or handle 24, the upper end of which is preferably provided with a folded strip 25, through which passes a handle 26 for rotating and manipulating the auger. The extension 23 and handle 24 are preferably formed cylindrical, and the handle 24 is provided with a groove 27, which extends nearly its entire length, terminating at a slight distance above its lower end. A set-screw 28 projects through the upper end of the extension into the groove 27 to prevent the rotation of the handle within the extension and also to lock the handle against longitudinal movement at any desired point.

In using my improved post-hole auger the cutters are adjusted to cut the desired-sized hole by means of the slide upon the shaft and the spring secured thereto. The notches upon the shaft are preferably arranged at such a distance apart that when the pin upon the spring is moved from one notch to the other the diameter of the cutter will be varied one inch, thereby affording a very convenient means for adjusting the cutters to cut out any desired diameter, there being, preferably, six notches, which will give a variation of six inches in the diameter of the holes which can be bored with my auger. After the cutters have been adjusted the bit of the auger is placed upon the spot where it is desired to bore the hole and the auger is rotated by means of the cross-handle at the top. Whenever the cutters have been filled with earth, the auger is withdrawn from the hole and emptied and returned and rotated as before. As the depth of the hole increases, the handle may be extended to suit the convenience of the operator by suitably manipulating the set-screw at the top of the extension. If it be desired to remove more earth at one time than can be retained within the cutters, the extension or coiled bucket 29 may be used, which is adapted to be held on top of the cutters in the following manner. The bucket is preferably formed from a strip of material of a width equal to the height of the bucket and formed at one end with staples 30, which are adapted to be passed through holes 31 formed in the opposite end of said strip. There are preferably two of these staples and two rows of holes, one upon each edge of the strip, and a key or lock 32 is secured to the strip adjacent to each series of holes, as by means of a chain 33. The length of the strip is equal to the circumference of the buckets at their greatest expansion, and the holes are arranged at such a distance apart as to give the bucket a circumference equal to the circumference of the buckets at the different adjustments of the cutters. In this manner the bucket may be adjusted for the different-sized holes being dug by simply passing the staples through the proper holes and locking them therein by means of the key. The bucket is held down on top of the cutters by means of a cross-piece 34, which is secured to a collar or guide 35, and which in turn is secured to the shaft in any suitable manner, as by means of a set-screw 36. When the bucket is used, it is evident that the top or covers for the different cutters must be removed to permit the earth passing from the cutter up into the bucket as the auger descends. As soon as the bucket has been filled in addition to the cutters the auger is withdrawn from the hole and emptied and reinserted, as heretofore described. By making the bucket and cutters of sufficient capacity a hole may be bored its full depth with but few removals of the auger from the hole, thereby producing a very rapid operating tool.

The auger and bucket may be of any desired size, and the capacity for expansion will correspond with the size of the auger. For instance, an auger made to cut a hole ten inches in diameter when closed will when expanded to its greatest size cut a hole sixteen inches in diameter. One made to cut a hole fifteen inches in diameter when closed will cut twenty-five inches when open, and so on, according to the size of the auger.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a post-hole auger, the combination, with an angular shaft, the lower end of which is provided with a bit, the upper end with means for rotating it, of a series of tapering substantially V-shaped cutters pivotally secured to the shaft adjacent to the bit, one wing of each cutter being flat and lying in the plane of the side of the shaft to which it is secured, and the opposite wing being curved slightly outward and sharpened, a slide upon the shaft above the cutters, rods for connecting the slide with the cutters, and means for locking said slide in its adjusted positions, substantially as described.

2. In a post-hole auger, the combination, with an angular shaft, the lower end of which is provided with a bit and the upper end with means for rotating it, a series of tapering substantially V-shaped buckets pivotally secured to the shaft adjacent to the bit, one wing of each of which is slotted at its upper end, two arms secured to each face of the shaft and projecting laterally therefrom upon opposite sides of said wing, a bolt through the outer ends of said arms and through said slot, a slide upon the shaft above the cutters, rods from the slide to the cutters, and means for securing the slide in its adjusted positions, substantially as described.

3. In a post-hole auger, the combination, with an angular shaft, the lower end of which is provided with a bit, and the upper end with means for rotating it, of tapering substantially V-shaped cutters pivotally secured to the shaft adjacent to the bit, one wing of each of which is flat and the other wing is curved, of a cover for each cutter secured to the upper edge of the flat wing, guide-arms for each cutter at the upper portion of the flat wing, and means for moving said cutters toward and from the shaft, substantially as described.

4. In a post-hole auger, the combination, with a shaft, the lower end of which is provided with a bit and the upper end with means for rotating it, of tapering substantially V-shaped cutters pivotally secured at their lower ends to the shaft adjacent to the bit, guide-arms for the upper ends of each cutter, and a cover for each cutter provided with an extension adapted to project over the cover of the adjacent cutter when the auger is closed, and means for moving said cutters toward and from the shaft, substantially as described.

5. In a post-hole auger, the combination, with a shaft, the lower end of which is provided with a bit, the upper end with means for rotating it, of laterally-adjustable cutters pivotally secured to the shaft adjacent to the bit, and a bucket above the cutters, said bucket comprising a strip of material having staples at one end and holes at the other, and a key for locking said staples in said holes, substantially as described.

JAMES BYRON DRISKILL.

Witnesses:
B. L. POWELL,
W. E. SMITH.