

W. COLE.
Earth-Augers.

No. 144,510.

Patented Nov. 11, 1873.

Fig 1

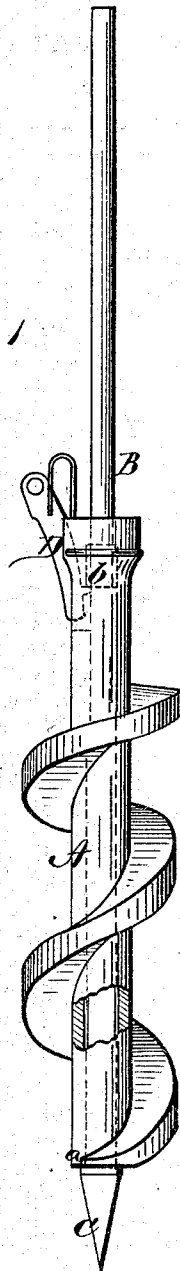
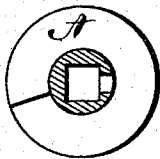


Fig 2



WITNESSES

J. L. Curand
C. L. Ewert

By

INVENTOR

William Cole
Charles Hudson
Attorneys.

UNITED STATES PATENT OFFICE.

WILLIAMS COLE, OF MILAN, TENNESSEE.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. **144,510**, dated November 11, 1873; application filed July 22, 1873.

To all whom it may concern:

Be it known that I, WILLIAMS COLE, of Milan, in the county of Gibson and in the State of Tennessee, have invented certain new and useful Improvements in Well-Boring Augers; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

The nature of my invention consists in drilling a hole centrally through the perpendicular length of an auger made of any suitable material, so as to admit of the auger's being fitted around a shaft which passes up through this orifice, instead of making the auger solid and attaching it to one end of the shaft by a suitable coupling, as has been done heretofore.

The disadvantage which follows the manner of coupling augers directly to one end of a section of shafting, as at present generally used, is in having to withdraw the entire shafting from the well which is being bored whenever the auger has loosened a few feet of earth and it becomes necessary to remove it. This is generally accomplished by the tedious process of withdrawing the entire length of shafting, rods, or bars to which the auger is attached, and which are put together in sections, additional sections being added as those previously attached sink into the ground. When, therefore, it becomes necessary to remove the earth loosened by the boring process, it is usually done by withdrawing with a windlass the entire length of shafting-bars, having to stop long enough each time a complete section thereof is raised above ground to detach it and attach the windlass-rope to the one succeeding; and in like manner, when returning the auger to its place, time had to be again lost sufficient to reattach each section so removed during the withdrawal, all of which also was accomplished at great loss of time and labor, and had to be successively repeated as often as a few feet of earth was loosened and required to be removed by drawing the auger to the surface.

My invention practically obviates all these objections, and in doing so saves an immense amount of labor and time.

In order to enable others skilled in the art to

which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing, in which—

Figure 1 is a side view of an auger, showing my invention; and Fig. 2 is a transverse section of the same.

A represents an auger, constructed in any desired manner suitable for boring wells. Instead of this auger being coupled to the bottom end of the lowermost section of shafting, as has heretofore usually been done, I make a hole, square or of any other suitable shape, centrally through the entire length of the auger, and do not couple it to the shafting at all. The lower section B of the shafting is constructed with a tapering point, C, which slopes upward and outward, and forms a ledge, *a*, on which the auger in its normal position rests. This section of shafting is made smaller above the upper termination of the tapering point just alluded to, in order that the requisite ledge may be formed, and its shape conforms to that of the hole drilled through the auger A. The lower edges of the hole in the auger are flared or beveled to make the orifice larger at this point, thereby to enable it to adjust itself upon the shaft more readily and easily.

Only the lowermost section of shafting is designed to be of a shape corresponding with that of the hole through the auger, which will generally be square. All the other sections are intended to be round, which gives the advantage of relieving greatly the friction which would otherwise occur in withdrawing the auger.

The sections of shafting, with the exception of the lowermost one, being round, and the hole of the auger which incloses them being square, a margin of space is left which allows any loose dirt to fall away, and the auger while being withdrawn to ascend freely.

In order that the auger may become firmly fastened to the lowermost section of shafting when it has reached and is resting on the ledge *a*, formed by the tapering point C, I employ a click or catch, D, which is attached near the top of the auger, and to which one of the ropes for withdrawing the auger is attached. When the auger has descended to its position of rest on the section B of the shafting, the click D

engages with a projection, *b*, thereof, and fastens the auger, so that the force exerted from above to cause the auger to bore downward will not be liable to force the shafting alone, but will compel the auger to descend also, without any danger of its coming to rest while the shafting continues to descend.

When it is desired to withdraw the auger to cast out the freshly-bored dirt, it is lifted to the surface by a rope attached to the click by means of a windlass-power, the shafting remaining at all times undisturbed, and never having to be withdrawn until the well-boring has been finished. By the manner in which the click is attached, it will be seen that, when the rope pulls on it when in the act of withdrawing the auger, it first removes the click from the projection *b*, which frees the auger from its fastening on the shaft-section B, and leaves it ready to be withdrawn without difficulty. When the auger has been brought to the surface and the dirt extracted therefrom,

it slides back by its own weight down the successive sections of shafting, until it again reaches its position on the rest *a*, when the click D engages and fastens it to the shaft in a manner that does not permit it to slip backward or remain stationary while the shafting continues to descend.

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

A well-auger, A, provided with a central bore, in combination with the shafting B having point C, with shoulder *a* and the projection *b*, and a latch, D, all substantially as and for the purposes herein set forth.

In testimony that I claim the foregoing I have hereunto set my hand this 3d day of June, 1873.

WILLIAMS COLE.

Witnesses:

L. T. LINDSEY,
B. R. PERSON.