

ISAAC YEAZEL.

Improvement in Earth Boring Augers.

No. 124,711.

Patented March 19, 1872.

Fig. 1.

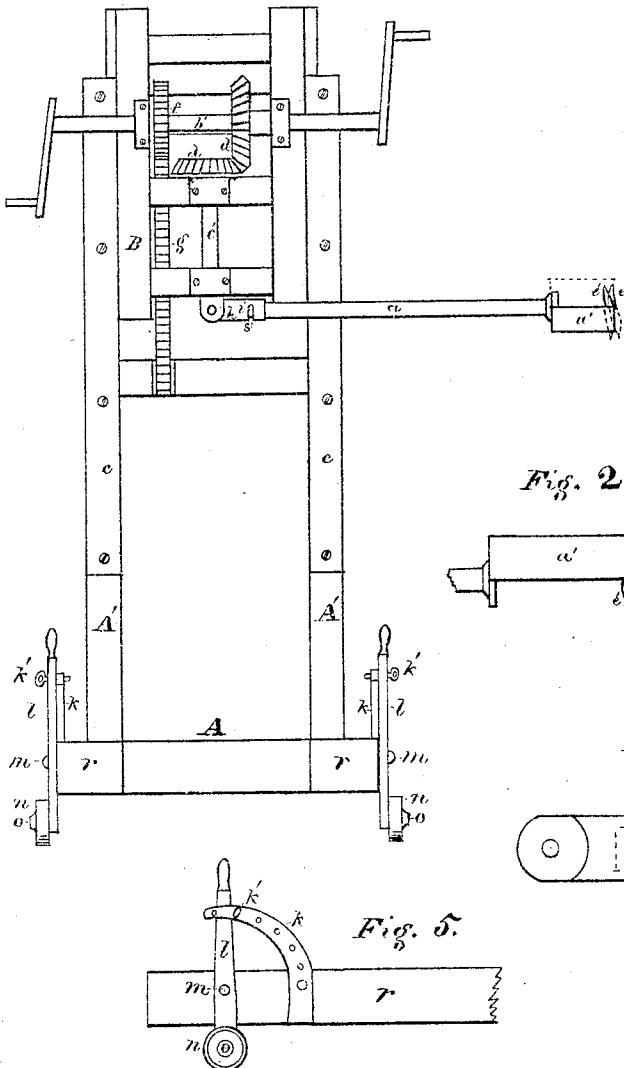


Fig. 2.

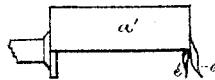


Fig. 3.



Fig. 4.

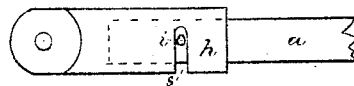
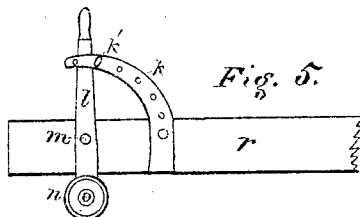


Fig. 5.



Attest.

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UNITED STATES PATENT OFFICE.

ISAAC YEAZEL, OF CLARKE COUNTY, OHIO, ASSIGNOR OF ONE-HALF HIS
RIGHT TO MOSES SWARTZ.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. 124,711, dated March 19, 1872.

I, ISAAC YEAZEL, of the county of Clarke and State of Ohio, have invented certain Improvements in Ground-Augers, of which the following is a specification:

The first part of my invention relates to the construction of the bit of the auger, and the mechanism for discharging the contents of the same after it is raised out of the ground. The second part of my invention, relates to the combination of the bit or boring-tool with a boring-frame, having cranks, gear, and a pinion and rack for raising and lowering the auger; and providing the frame with truck-wheels, which can be operated independently to adjust the frame on uneven ground in boring the post-holes.

Figure 1 is a front elevation of my improved ground-auger machine. Fig. 2 is a side view of the bit and pod. Fig. 3 is an end view of the bit. Fig. 4 is a view of the upper end of auger-shank, with the sleeve in which it partially revolves in discharging. Fig. 5 is a section of one of the sills of the boring-frame, with truck and attachments.

A is the frame, which consists of two posts, A', set in sills framed together at the bottom. The posts are also framed together, and have their inside front corners rabbeted out and overlaid with the metal strip *c*, so as to leave a groove for the flanges on the sash B, which slide up and down in them. A crank-shaft, *b'*, extends across the frame, running in boxes on the front of the sash B. This shaft is furnished with a crank at each end, and is geared to the vertical shaft *c'*, which is attached to the auger-shank by beveled gear-wheels *d d'*. Pinion *f* slides on a feather on the crank-shaft, throwing machine into and out of gear with the rack *g*. The auger-shank *a* is provided with a sleeve, *h*, at its upper end, which is hinged to the vertical shaft *c'*. This sleeve has a horizontal slot, *s*, cut a little more than half-way through it for the pin *i*, Figs. 1 and 4, which acts as the stop when the auger is partially rotated. When the auger is raised out of the ground, as seen in Fig. 1, the auger is thrown up at a right angle, the pod or shell *a'* having its concave part up and filled with dirt. It is then partially revolved so as to

turn out the dirt, the pin *i* and slots allowing the auger to be turned the other side up, as seen in Fig. 2, and also in the dotted lines over the bit, Fig. 1, which show the blade parts *e e'* turned down. It will be seen that the shell *a'* is about one-half a hollow cylinder, which is enough to sustain the column of dirt with which it is filled, and its form allows it to readily discharge all the dirt contained in it when inverted. In swinging the auger out from the hole it is stopped at a point which will bring the bit out with the dirt in it, in the position shown in Fig. 1, it being set so that the hinge will allow it to be raised in the position shown. By this arrangement, all the dirt taken out can be deposited on one side of the machine, away from the hole, so that there is no danger of its falling back to hinder the boring. The bit has but one cutting-blade, *e*. This has a double-curved edge, beginning at the center and describing an inward curve toward the point. It is depressed downward to give sufficient depth of cut. About one-fifth of the circular plate *b*, on which the blade is formed, is cut out to give room for the passage upward of dirt and stones. (See Fig. 3.) It will be noticed that it is cut out a little beyond the center so as to give the cutting-lip *e* sufficient depression to start from that point. The part *e* is bent slightly upward to relieve the blade and give direction to the borings. In Figs. 1 and 5 the truck-wheel *n* runs on a spindle-bolt *o*, which is fastened in the lower end of the lever *l*. Above this point the lever is pivoted to the sill *r* by bolt *m*. A segmental piece, *k*, with holes, and a pin, *k'*, for adjustment, is let into and bolted to the sill *r* by the side of the truck-wheel. The truck-wheel *n* is raised by throwing lever *l* downward, pin *k'* being thrust into one of the holes in the segment *k* to hold it. By this arrangement each wheel can be operated independently, and when it is desired to let the sills rest on the ground all the trucks can be raised in the same manner by throwing the levers down on a line with the sills.

I do not claim the frame and gear for boring and raising and lowering the auger, as this has before been used; nor do I claim the

trucks, levers, and segments independently, as my device; but

What I claim as my improvement is—

1. The construction and arrangement of the auger-shank *a* with its pin *i*, sleeve *h*, slot *s*, pod *a'*, plate *b* with blade *e*, as shown and described, for the purpose set forth.

2. Trucks *n*, levers *l*, pivot-pin *m*, segments

k, and pin *k'*, in combination with sills *r*, of boring-frame A, as shown and described, for the purpose set forth.

ISAAC YEAZEL.

Witnesses:

B. C. CONVERSE,

R. L. MILLS.