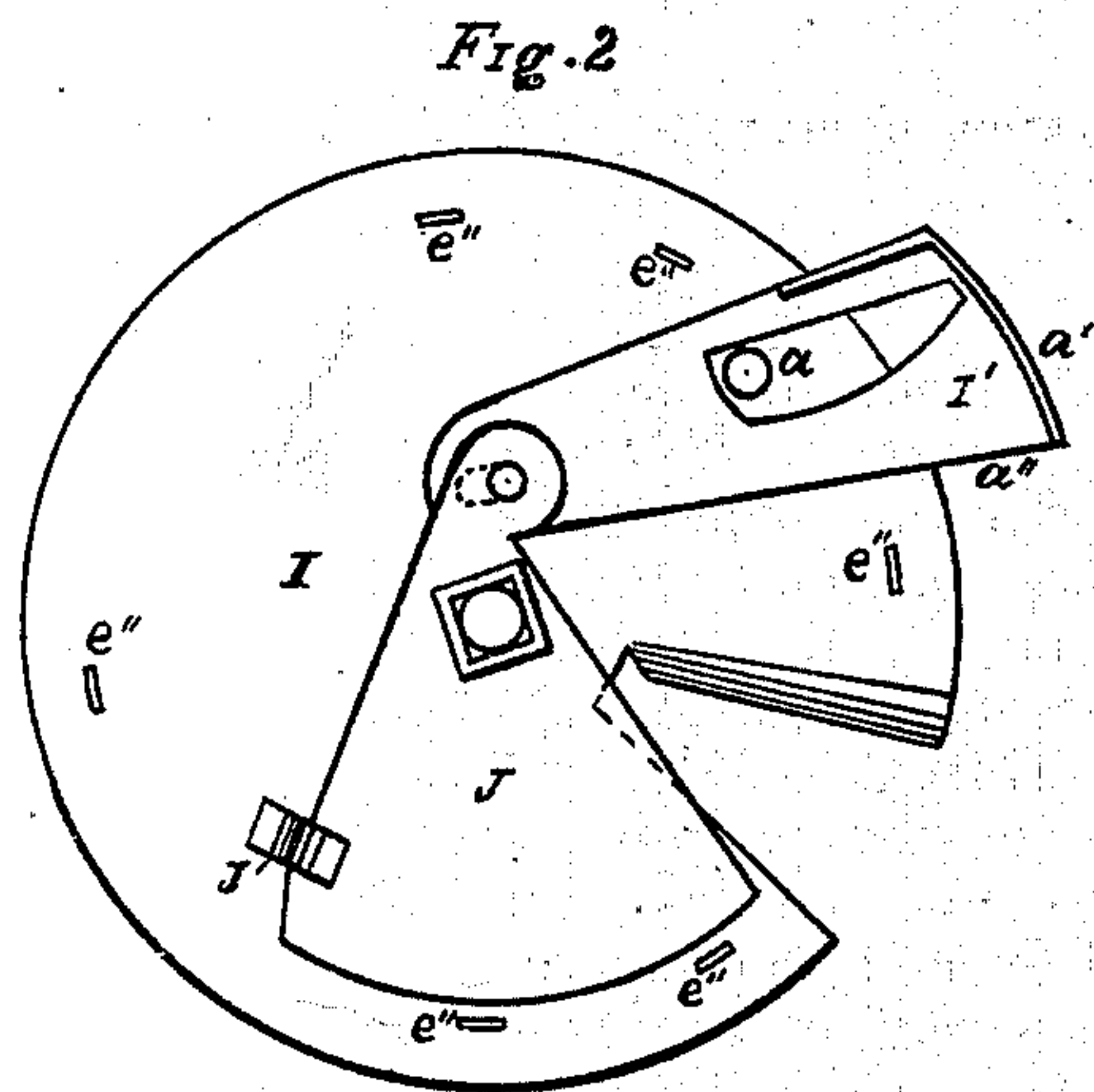
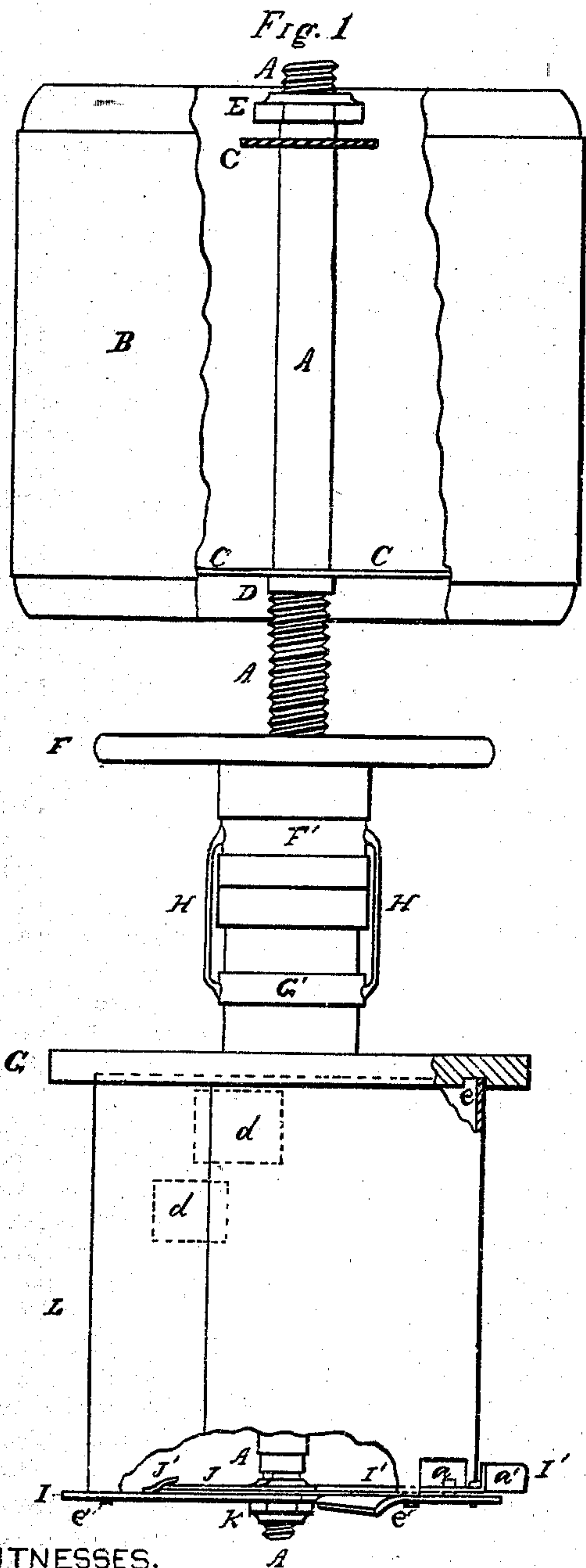


T. A. CONSIDINE.

Earth-Augers.

No. 146,752.

Patented Jan. 27, 1874.



WITNESSES.

J. H. Saylor
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INVENTOR.

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UNITED STATES PATENT OFFICE.

THOMAS A. CONSIDINE, OF CHICAGO, ILLINOIS.

IMPROVEMENT IN EARTH-AUGERS.

Specification forming part of Letters Patent No. **146,752**, dated January 27, 1874; application filed November 18, 1873.

To all whom it may concern:

Be it known that I, THOMAS A. CONSIDINE, of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Earth-Augers, of which improvements the following is a full, clear, and exact description, which will enable others skilled in the art to which my invention appertains to make and use the same, reference being had to the accompanying drawing forming a part hereof, and in which—

Figure 1 is a side elevation of an auger embodying my invention, certain parts being represented as broken away in order that their construction may be more fully shown; Fig. 2, a top or plan view of the cutters.

Like letters of reference indicate like parts.

In the drawings, A represents the shaft or stock of the auger. The stock is screw-threaded for a considerable distance below the collar D, as shown; and F is a disk run upon this screw-thread, and provided with a hub extending from its lower face. F' is a sleeve arranged above a collar on the hub of the disk F. G is a disk loosely mounted on the stock, and having a hub projecting from its upper face. G' is a sleeve arranged below a collar on the hub of the disk G. H H are connecting-bars uniting the sleeves F' and G'. I is a cutter loosely mounted on the lower end of the stock which passes through the center of the cutter, and that part of the stock which receives this cutter is cylindrical. I' is a knife resting freely on the cutter I. This knife is slotted longitudinally, as shown, to receive a post, *a*, projecting from the cutter I. The knife I' has a vertical cutting-blade, *a'*, projecting upward from its outer end. The edge *a''* also operates as a cutting-blade. J is a plate pivoted to the inner end of the knife I'; and J' is a stop attached to the cutter I, and projecting above the plate J. That part of the stock which receives the plate J is square or polygonal, and the opening in the said plate corresponds thereto in form. K is a nut, which supports the cutter I. L is a wall, which, in connection with the cutter I, forms a bucket. This wall consists of two or more curved pieces arranged to form a cylindrical chamber, preferably somewhat larger at the top than at the bottom. The upper edges of

the pieces or sections which constitute the wall of the bucket rest in a groove in the disk G, as shown at *e*. *e' e'* are pins extending from the lower edge of the wall L into the holes *e'' e''* in the cutter I. The inner faces of the sections forming the wall L are provided with wings or leaves attached to one section and lapping the other, as shown by the dotted lines at *d d*.

An operating-handle is attached to the upper end of the stock. When the stock is turned for the purpose of performing the operation of boring, the knife I' is thereby first thrown into the position shown in Fig. 2, and the continued movement of the stock carries the cutter around with it. This result follows for the reason that the part J is arranged on a polygonal part of the stock, and is fitted thereto and pivoted to the inner end of the knife I', and because the stop J' is in contact with the part J and the post *a* with the knife I'. The bucket and the disk G are carried around by the cutter I. The vertical blade of the knife I' moves in a circle a little larger than the periphery of the drum B, so that the latter will sink easily and nicely into the hole, and thus retain the stock in a vertical position by reason of the broad bearing furnished by the drum. The loosened earth will pass into the bucket, and when the latter is full the stock is turned in the reverse direction, and the knife I' is thereby drawn into the bucket and closes the opening therein through which the said knife plays. The part J is at the same time thrown over the opening through which the earth passes upwardly into the bucket, and thus makes the bucket sufficiently tight to enable quicksand and other similar material to be withdrawn from the hole. The whole device may now be drawn from the hole without any considerable resistance created by suction, for the hole is greater in diameter than the diameter of any part of the apparatus, and an air-space extends through the drum and to the cutter.

In order to discharge the earth from the bucket, the disk F is raised by being turned for that purpose, and as the disk F is raised the disk G is lifted by it through the instrumentality of the sleeves F' and G' and the bars H H. In this manner the walls of the

bucket are released from the groove *e*, and may be removed. The nut *K* may also be lowered sufficiently to admit of the removal of the walls of the bucket, or it may be entirely removed for that purpose.

When the earth is discharged, the walls may be replaced, and the operation above described may be repeated. The parts *d d* prevent the sections of the wall from bulging near their vertical edges when the bucket is loaded.

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

1. The vertically-adjustable grooved disk *G*, mounted on the stock *A*, in combination with

the removable walls *L*, made in sections and supported by the cutter *I*, substantially as and for the purposes specified.

2. The laterally-adjustable knife *I'*, jointed to the part *J*, attached to the stock, in combination with the cutter *I*, loosely mounted on the stock, and provided with stops for the purpose of limiting the movement of the said knife and of the part *J*, substantially as and for the purposes specified.

THOMAS A. CONSIDINE.

Witnesses:

F. F. WARNER,
J. H. LAWLOR.