

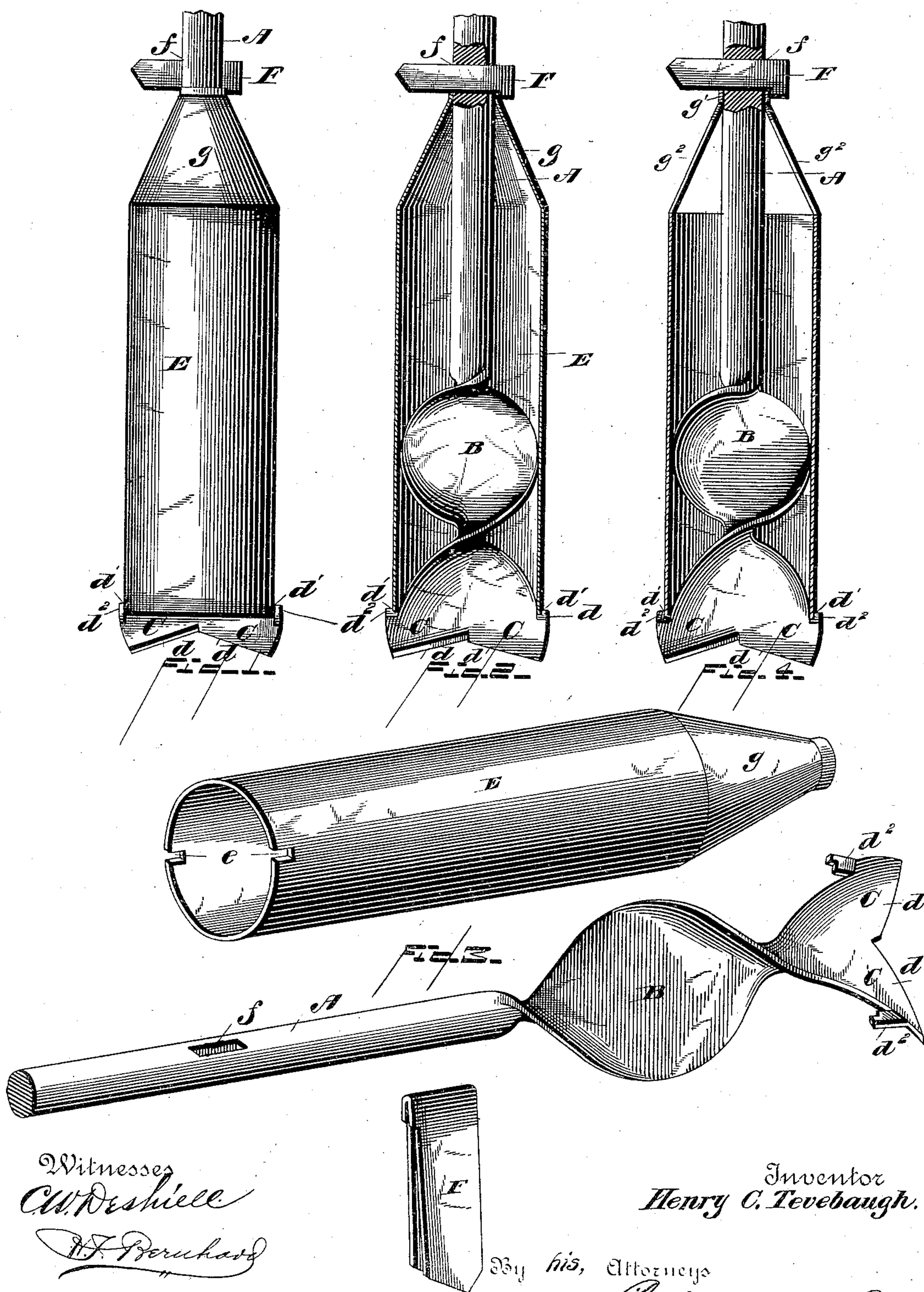
(No Model.)

H. C. TEVEBAUGH.

AUGER.

No. 368,626.

Patented Aug. 23, 1887.



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SPECIFICATION forming part of Letters Patent No. 368,626, dated August 23, 1887.

Application filed October 29, 1886. Serial No. 217,513. (No model.)

To all whom it may concern:

Be it known that I, HENRY CLAY TEVEBAUGH, a citizen of the United States, residing at Hondo City, in the county of Medina and State of Texas, have invented a new and useful Improvement in Augers, of which the following is a specification.

My invention relates to improvements in augers for boring wells and post-holes; and it consists of the peculiar combination of devices and novel construction and arrangement of parts for service, substantially as hereinafter fully described, and particularly pointed out in the claims.

The object of my invention is to provide an improved auger for boring wells, post-holes, and the like, which shall possess superior advantages over others which have preceded it in points of simplicity and strength of construction, effectiveness and rapidity of operation, and cheapness of manufacture.

A further object of my invention is to provide an improved auger which shall permit of a free circulation of air between the hole being bored and the sides of the conducting tube or casing, to thereby enable the apparatus to be operated with great ease and without undue friction between the sides of the hole or well and the said casing, and, further, to provide the auger with means wherein the earth or other substance is stored, or by which it is discharged, so that the auger proper can work very freely.

In the accompanying drawings, which illustrate an auger embodying my invention, Figure 1 is a side elevation, Fig. 2 is a vertical central sectional view, and Fig. 3 is a detached view, of the parts of my invention; and Fig. 4 is a sectional view corresponding to Fig. 2, showing the form of casing or tube employed in boring post-holes.

Referring to the drawings, in which like letters of reference denote corresponding parts in all the figures, A designates the shank of my improved auger, which is formed at its lower end with a worm or screw, B, in the usual well-known manner. The lower end of the worm or screw terminates in cutters or bits C, which are formed integral with the screw, and these bits are inclined in opposite directions and have their lower edges sharpened to form cutting-edges d , which act upon the earth or soil

to loosen it, and thus permit the apparatus to force its way through the earth. The side edges of the cutters or bits are extended beyond the vertical line at the sides of the screw, as shown at d' , and the upper edges of these extended side edges are bent to form the shoulders or ledge d'' , for a purpose hereinafter described.

E designates the cylindrical casing or tube which is fitted over the worm or screw C of the auger, the diameter of this shell or tube being a little greater than the diameter of the worm, to adapt the casing or tube to fit snugly upon the apparatus. The lower edges of the tube or casing are provided with notches or recesses e , that are located at diametrically-opposite points in the periphery, and in these notches or recesses are fitted the shoulders or ledges d'' of the cutters or bits, so that when the auger and the cutters or bits are rotated the shell is caused to revolve therewith and thus partake of the motion of the same. The tube or casing is located within the extended edges d' of the cutters or bits, and the hole or opening cut or formed by the said cutters is thus a little greater in diameter than the diameter of the tube or casing, so that the latter is arranged out of contact with the walls of the hole or opening when in the earth. By thus making the cutters of greater diameter than the casing or tube a free circulation of air is permitted between the tube and the opening or hole bored by the cutters or bits, and the auger can rotate or work very freely, thus permitting the device to be operated with comparative ease and a minimum expenditure of power.

The shank of the auger is provided at its upper end with a transverse slot, f , through which passes a key, F, which is preferably of the class known as "spring-keys," the function of which will be hereinafter described.

The lower end of the casing or tube is left open, and when it is fitted on the auger the edges of the worm or screw impinge against the inner sides thereof. The lower open end of the tube or casing is partially closed by the cutters or bits fitting therein, but spaces are left between the said tube or casing and the bits for the free entrance of the loose earth into the casing, as will be readily understood.

When the apparatus is to be used for dig-

ging wells, the upper end of the tube or casing is closed by means of a cone-shaped cap, *g*, which has a central opening, through which the shank of the auger passes, and the lower edge of the key *F* impinges upon the upper edge of the casing or tube, to prevent the latter from upward movement or displacement when the apparatus is entering the earth. When, however, it is desired to bore post-holes, I employ a tube or casing which is open at its upper end for the free escape of the loose earth, and the said upper end is provided with an annulus or ring, *g'*, through which the shank of the auger passes, and which is connected to the upper edges of the tube or casing by intermediate diagonal rods or braces, *g''*, as will be very readily understood by reference to Fig. 4 of the drawings.

The operation of my invention is as follows: When it is desired to bore a well or other deep excavation, the casing or tube with the closed upper end is fitted on the auger and the latter forced or fed downward by suitable mechanism, rotary motion being also simultaneously imparted thereto to cause the cutters or bits to loosen the soil and penetrate the same. The loose soil enters the casing or tube and is conveyed upward therein by the screw or worm, and the apparatus is continued in operation until the tube has been filled with the loose earth, after which the auger is withdrawn, the key removed, and then the casing or tube, to empty the earth therefrom. The parts are now replaced and the operation of boring continued. If it is desired to bore a post-hole, the casing or tube with the open upper end is employed, as shown in Fig. 4. The soil that is loosened by the cutters or bits enters the tube or casing, and is conveyed upwardly therein by the screw or worm until it is discharged from the open upper end of the tube or casing.

My invention is simple, strong, and durable in construction, effective and reliable in operation, and cheap. It can be operated with comparative ease, and requires a less expendi-

ture of power and effort to operate the parts. The casing or tube can be readily detached to permit of the emptying of the contents of the same, and one form of tube or casing can be quickly replaced by another to adapt the auger for deep or shallow excavations.

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

1. The combination of a shank provided with a conveying-screw and the cutters at the lower end of the screw, the sides of the cutters being extended beyond a vertical line drawn across the edges of the screw, and a tube or casing inclosing the screw and connected at its lower end with the cutters, said tube being of less diameter than the cutters and arranged within the outer sides thereof, as and for the purpose described.

2. The combination of the shank having the screw or worm, the oppositely-inclined cutters or bits at the terminal end of the screw and having the extended side edges and the lips or shoulders, and the casing or tube fitting around the screw and having the notches in its lower edge, in which the ledges or shoulders of the cutters fit, substantially as described, for the purpose set forth.

3. The combination of the shank having the worm or screw and the transverse slot above the screw, the cutters or bits at the terminal end of the screw, the casing or tube fitted around the screw and having the open upper end and the annulus or ring connected therewith, and the key passing through the slot of the shank and impinging upon the ring or annulus of the tube, substantially as described, for the purpose set forth.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HENRY CLAY TEVEBAUGH.

Witnesses:

W. N. PARKS,
S. A. SMITH.