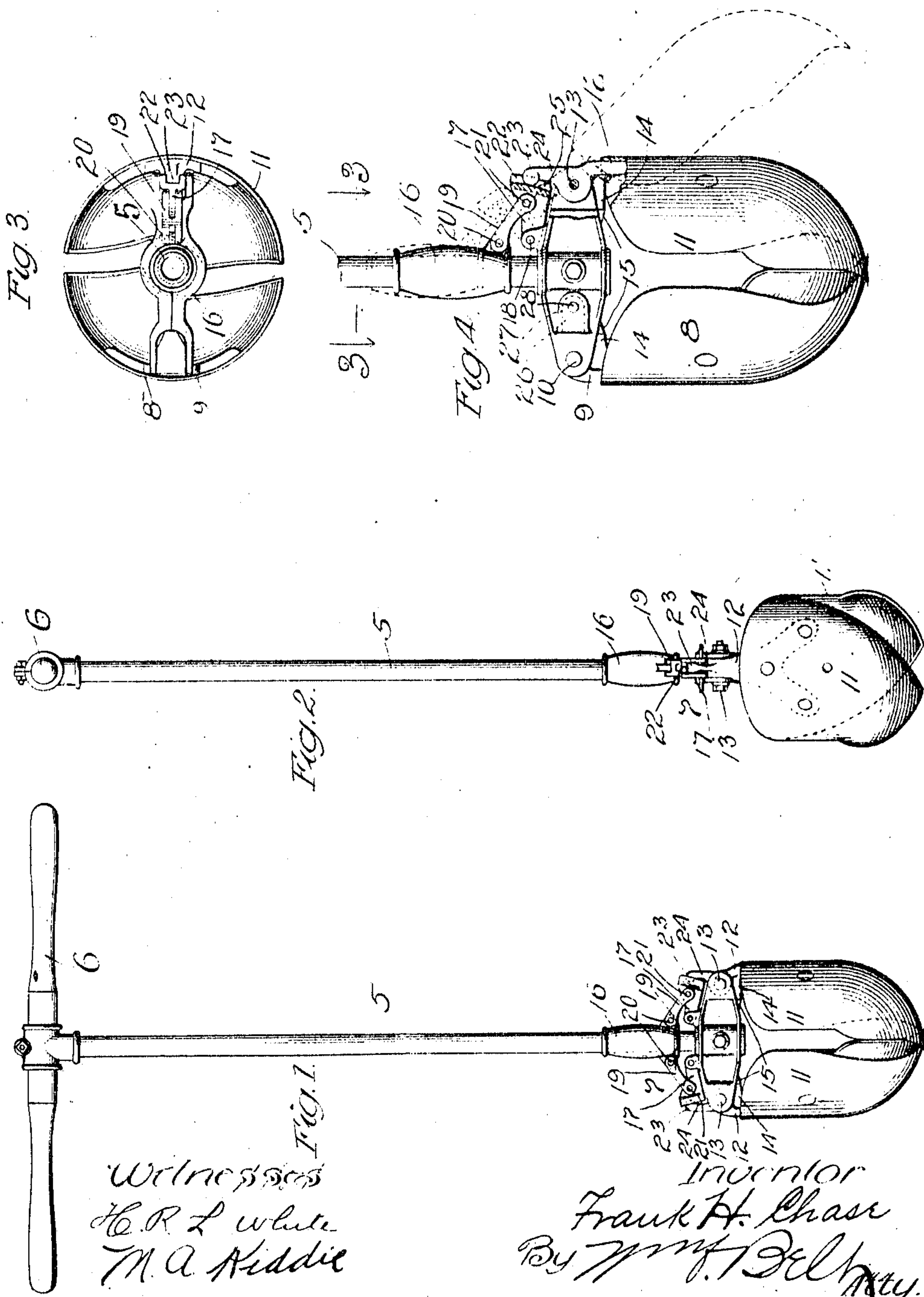


F. H. CHASE.  
EARTH AUGER.

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978,559.

Patented Dec. 13, 1910.





# UNITED STATES PATENT OFFICE.

FRANK H. CHASE, OF CHICAGO, ILLINOIS, ASSIGNOR TO STANDARD EARTH AUGER COMPANY, OF CHICAGO, ILLINOIS, A CORPORATION OF ILLINOIS.

## EARTH-AUGER.

978,559.

Specification of Letters Patent.

Patented Dec. 13, 1910.

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*To all whom it may concern:*

Be it known that I, FRANK H. CHASE, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented new and useful Improvements in Earth-Augers, of which the following is a specification.

The object of my invention is to provide an earth auger of strong and substantial construction in which the blades are rigidly held in position for boring and provided with means whereby one or both of the blades may be readily and easily manipulated to discharge the load.

In the accompanying drawings illustrating my invention Figure 1 is an elevation showing an earth auger having both blades pivoted. Fig. 2 is a similar view of the auger at a right angle to Fig. 1. Fig. 3 is a sectional view on the line 3—3 of Fig. 4. Fig. 4 is a detail enlarged view, similar to Fig. 1, partly broken away and in section, showing one blade rigid and the other pivoted.

Referring to the drawings, 5 designates the stem of the auger which is provided at one end with a handle 6 and at the other end with a head 7. The head may be made in any suitable manner but it preferably consists of a two-part casting of strong and substantial construction and which is securely bolted or otherwise mounted on the lower end of the stem.

Both of the blades may be pivotally connected to the head, as shown in Fig. 1, but I have found it very satisfactory to make one blade rigid with the head and pivotally connect the other thereto as shown in Fig. 4. As the pivotal connection and the locking and unlocking means for both blades would be the same I will, for convenience, refer only to the construction of Fig. 4 for a detail explanation thereof.

Referring to Fig. 4, 8 is a blade which is rigidly connected with the head in any suitable manner but it is preferably mounted on an arm 9 which is securely fastened to the head by a bolt or rivet 10. The pivoted blade 11 is also mounted on an arm 12 which is pivoted on a bolt or rivet 13. Both of the blades have projections 14 which are arranged to engage stops 15 on the head. The hand grip or sleeve 16 is slidably mounted on the stem above the head and a locking device 17 is pivotally mounted at

18 on the head. A link 19 is pivoted at its ends 20, 21, to the sleeve and locking device, respectively. The outer end of the locking device has a groove 22 to receive the rounded end 23 of a projection 24 on the arm 12 extending upward above the pivot 13. The projection is engaged by the base 25 of the groove which is eccentric to the pivot 18 to form a cam. The construction is such that when the pivoted blade is in locked position, as shown in full lines in Fig. 4 the pivot 21 will be below a line drawn through the pivot 20 and the rounded end 23 of the projection 24 so that the locking device, or at least the cam thereof, will be wedged in tight engagement with said projection. In this position the pivoted blade is securely and tightly locked against the pressure which may be exerted thereon in boring, and also by the weight of the load which may be carried by the auger. To release the pivoted blade the sleeve 16 is raised, thereby lifting the locking cam device out of engagement with the projection 24 and permitting the blade 11 to swing on its pivot 13. If both blades are pivoted they would both be provided with locking devices and operated simultaneously.

My invention provides a strong and substantial device in which the blades are rigidly held in locked position and are adapted to be very quickly and easily unlocked to permit them to discharge a load. In view of the fact that the locking device comprises a cam which engages the projection on the arm of the pivoted blade and the peculiar construction and arrangement of the operating means very slight pressure is required to move the sleeve 16 in either direction on the stem, while at the same time the pivoted blade or blades will be securely held in locked position until the sleeve is raised. The weight of the sleeve, the link and the locking device is sufficient to hold the cam in operative engagement with the arm 24 and to release the locking device it is only necessary to lift this weight. The gravity cam locking device is normally in locking position, as it should be, to hold the pivoted blade in closed position for boring and to retain the load until it should be discharged. This locking device is very simple in construction and not liable to get out of order; it is uncovered and exposed so that its operation may be observed and its parts



repaired or replaced when necessary, and the cam operates like a wedge upon the arm of the blade to lock it. The blade 8 could be pivoted at 10 like the blade 11 and another locking device connected to the sleeve 16 for operating it. I prefer to provide a rigid blade with an extension 26 which projects inward from the pivot 10 and is seated in a socket 27 provided for it in the head. In assembling the parts the head may be mounted on the stem, the blades riveted to the arms, and the arms pivotally connected to the head. I prefer to provide the head with an opening to receive the rivet or bolt 28 and after the parts are thus assembled I prefer to drill a hole in the extension 27 for said bolt or rivet 28. In this way the rigid blade is securely fastened in its proper position on the head. The stops 15 register the blades in proper position when closed but in the case of the rigid blade the rivet or bolt 28 securely holds it.

What I claim and desire to secure by Letters Patent is:

1. An earth auger comprising a stem, a head on the stem, an arm pivotally connected to the head, a blade on the arm, and a pivoted gravity locking device to engage said arm and hold said blade in closed position.
2. An earth auger comprising a stem, a head on the stem, an arm pivotally connected to the head, a blade on the arm, and a pivoted gravity cam locking device to engage said arm and hold said blade in closed position.
3. An earth auger comprising a stem, a head on the stem, an arm pivotally connected to the head, a blade on the arm, a gravity cam locking device to engage said arm and hold said blade in closed position, and a sleeve slidably mounted on the stem and connections between the sleeve and said locking device to release the same from engagement with the arm.
4. An earth auger comprising a stem, a head on the stem, an arm pivotally connected to the head, a blade on the arm, a

gravity cam locking device pivotally mounted on the head to engage said arm and hold said blade in closed position, and means for releasing said locking device from engagement with the arm, said means comprising a sleeve slidable on the stem, and a link pivotally connected to the locking device and sleeve.

5. An earth auger comprising a stem, a head on the stem, an arm pivotally connected to the head, a blade on said arm below its pivot, a projection on said arm extending above its pivot and the head, and a gravity operated cam locking device pivotally mounted on the head and swinging outward from the stem to engage said projection and hold the blade in closed position.

6. An earth auger comprising a stem, a head on the stem, an arm pivotally connected to the head, a blade on said arm below its pivot, a projection on said arm above its pivot, a gravity operated cam locking device pivotally mounted on the head to engage said projection, a sleeve slidably mounted on the stem, and a link pivotally connected to the sleeve and locking device.

7. An earth auger comprising a stem, a head on the stem, an arm pivotally connected to the head, a blade on said arm below its pivot, a projection on said arm above its pivot, a locking device pivotally mounted on the head, said device having a groove at its outer end to receive said projection and the base of said groove being formed eccentric to the pivot of the device, and a sleeve slidably mounted on the stem and connected with the locking device for releasing the same.

8. An earth auger comprising a stem, a head on the stem, an arm pivotally connected to the head, a blade on the arm, and a pivotally mounted gravity locking device independent from said arm to engage the arm and hold said blade in closed position.

FRANK H. CHASE.

Witnesses:

WM. O. BELT,  
M. A. KIDDIE.