J. BLACKBURN.

EXPANDING SCREW ANCHOR.

APPLICATION FILED NOV. 29, 1918.

1,330,233. Patented Feb. 10, 1920.

Fig. 1

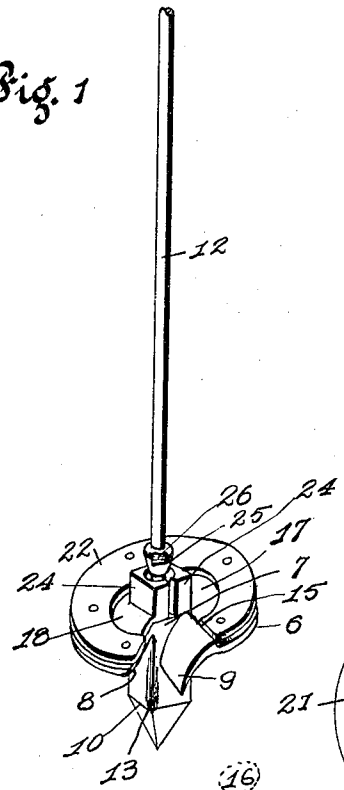


Fig. 2

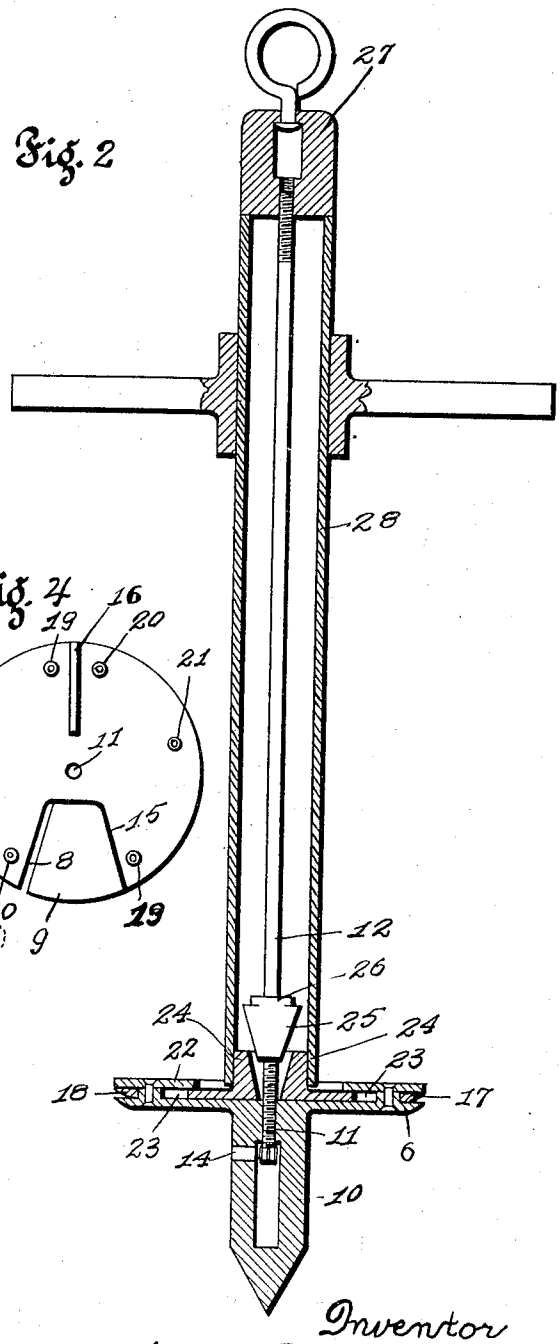


Fig. 4

Fig. 3

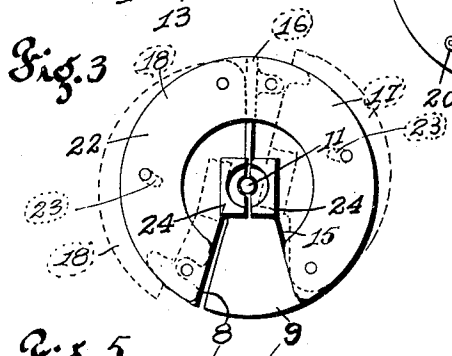
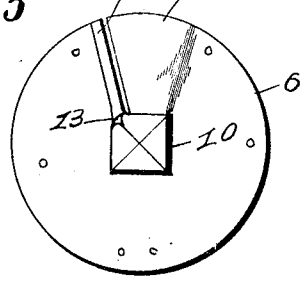


Fig. 5



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UNITED STATES PATENT OFFICE.

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EXPANDING SCREW-ANCHOR.

1,330,233. Specification of Letters Patent. Patented Feb. 10, 1920.

Application filed November 29, 1918. Serial No. 264,568.

To all whom it may concern:

Be it known that I, JASPER BLACKBURN, a citizen of the United States, and resident of Webster Groves, Saint Louis county, Missouri, have invented certain new and useful Improvements in Expanding Screw-Anchors, of which the following is a specification containing a full, clear, and exact description, reference being had to the accompanying drawings, forming a part hereof.

My invention relates to new and useful improvements in "expanding screw anchors" and has for its principal object, the construction of an anchor on the screw or auger type, which may be inserted in the ground by boring and when inserted, the blades carried thereon may be expanded so as to afford an increased bearing in the ground.

In the drawings:

Figure 1 is a perspective view of the complete anchor with part of the anchor rod broken away.

Fig. 2 is a cross-sectional view of the anchor and the wrench for driving the same into the ground.

Fig. 3 is a top view of the anchor with the anchor blades expanded.

Fig. 4 is a plan view of the boring member with the anchor blades and guide plate removed.

Fig. 5 is a bottom plan view of the boring member.

Referring to the drawings; 6 indicates the boring member, the body portion of which is formed of a flat disk provided with a radial slot 7, on one side of which is a beveled edge 8 and on the opposite side is a depending sharpened flange 9. The sharpened edge of the flange 9 constitutes the cutting member for the boring member. The boring member 6, is provided with an angular point 10 on its lower surface in which is formed a screw threaded bore 11, in which the anchor rod 12 is seated. The angular point 10 has one of its corners rounded as at 13 and is also provided with an opening or recess 14 through which a punch or tool may be inserted for the purpose of roughening or upsetting the screw threads on the end of the anchor rod to prevent the same from being withdrawn.

The boring member 6 is also provided on its top surface with shoulders 15 and 16 against which the edges of the anchor blades 17 and 18 are adapted to strike in the operation of boring or inserting the anchor into the ground and also lessening the tendency of the pivot members of the blades being sheared.

Formed on the upper surface of the boring member 6 are pivot studs 19 and 20 and on the studs 19 the anchor blades 17 and 18 are mounted, and it is further provided on its upper surface with studs 21 which limit the expansion of the blades outwardly. Secured to the studs 19, 20 and 21 is a guide member 22. The anchor blades 17 and 18 are provided with slots 23 through which the studs 21 project. The guide member 22 in conjunction with the boring member 6, forms, as it were, guideways for the anchor blades and prevents the same from tilting or twisting when expanded.

Formed integral with each of the anchor blades 17 and 18 is an angular stud or projection 24. These projections on the inside are cut away so that when the blades are contracted or not expanded, an opening is formed between the studs or projections for the passage of the anchor rod 12. The anchor rod 12 is screw seated in the bore 11 and the threads on its lower end are roughened or upset to prevent the same from being unscrewed or detached from the boring member 6 as previously described.

Mounted on the anchor rod 12, adjacent the projections 24 is a cone-shaped member 25 which is for the purpose of expanding the anchor blades. Formed on the cone-shaped expanding member 25 is a wrench seat 26 by means of which the cone member may be operated. However, the cone member is preferably operated by means of the anchor rod 12 on which the same is mounted. Mounted on the upper end of the anchor rod is a removable cap and eye 27 to which the guy wires may be fastened.

The operation of my device is as follows:

By taking off or removing the cap and eye 27, a wrench 28 may be inserted over the anchor rod and seated over the projections 24 formed on the anchor blades and by the operation of the wrench or tool, the boring member 6 and the blades carried thereby is inserted or bored into the ground to the required depth. When the anchor has been inserted to the required depth by operating or rotating the anchor rod 12, the expanding member 25 is moved downwardly between the projections 24 and this operation will expand the anchor blades 17 and 18 as desired, said anchor blades being provided

with sharpened edges to permit them to be more readily forced into the earth.

Having fully described my invention, what I claim is:

1. An anchor comprising a boring member, anchor blades pivotally secured thereto, said anchor blades being provided with angular projections adapted to receive a wrench for inserting the boring member and the blades carried thereby into the ground and a movable cone-shaped member for expanding the anchor blades.

2. An anchor comprising a boring member in the form of a disk, guide-ways carried by the boring member, anchor blades pivotally secured in said guide-ways, said anchor blades being provided with an angular projection adapted to receive a wrench for inserting the anchor into the ground and a movable cone-shaped member for expanding the anchor blades when the anchor is inserted into the ground.

3. An anchor comprising a boring member in the form of a disk provided with a point and cutting edges, anchor blades pivotally secured to the disk, said anchor blades being provided with projections to receive a tool for inserting the boring member and blades carried thereby into the ground, an anchor rod rotatably mounted in the boring member, a cone-shaped member mounted on the anchor rod for expanding the blades, said cone-shaped member being provided with a tool receiving seat for rotating the same.

4. An anchor comprising a boring member, anchor blades pivotally secured thereto, projections carried by the boring member for relieving the strain on the anchor blades in the operation of boring, projections carried by the anchor blades adapted to receive a wrench for inserting the boring member and the blades carried thereby into the ground and a movable cone-shaped member for expanding the anchor blades.

5. An anchor comprising a boring member in the form of a disk, guide-ways carried by the boring member, anchor blades pivotally secured in said guide-ways, said anchor blades being provided with an angular projection adapted to receive a tool for inserting the anchor into the ground, an anchor rod carried by the boring member and a cone-shaped member mounted on said anchor rod between the angular projections carried by the anchor blades for expanding said blades.

In testimony whereof, I have signed my name to this specification, in presence of two subscribing witnesses.

JASPER BLACKBURN.

Witnesses:

EDWARD E. LONGAN,

ELIZABETH CARTELL.