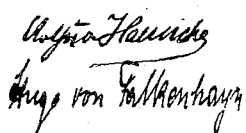


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UNITED STATES PATENT OFFICE.

HEINRICH FUCHS, OF FRIEDRICHSFELDE, NEAR BERLIN, GERMANY.

GROUND-ANCHOR.

954,510.

Specification of Letters Patent.

Patented Apr. 12, 1910.

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To all whom it may concern:

Be it known that I, HEINRICH FUCHS, a subject of the German Emperor, and residing at Friedrichsfelde, near Berlin, Germany, have invented certain new and useful Improvements in Ground-Anchors, of which the following is a specification.

My invention relates to anchors and a primary object is to provide an improved ground anchor which can be taken to pieces, having a tubular shank and pivoted arms, and arranged in such manner that after the folded anchor has been placed in the ground, it is spread out when the shank is pulled. The arms are detachable from the shank, so that when the anchor is being removed from the ground the shank and the arms can be withdrawn separately, which facilitates the anchor being obtained again. One constructional form of anchor according to my invention is represented by way of example in the accompanying drawing, in which:

Figure 1 is an elevation, partly in section, the detachability of the shank from the arms being obtained by means other than those used in the form shown in my co-pending application Serial No. 498,891, filed May 28, 1909, and Figs. 2 to 5 show various details of the anchor.

Referring to the drawing the anchor consists substantially of the shank *p*, four arms *e*¹, carrying springs *l*, the chains *h*¹, and the attachment means hereinafter described. Instead of detaching the arms from the shank by withdrawing keys, as in my co-pending application, this is done by using a tubular shank *p*, which may be an ordinary iron pipe, containing movable holding means which will now be described. Namely, in this pipe a spindle *r* is mounted between two fixed disks *q*, *q*, said spindle being squared at its top end and able to be turned by a loose key. About in the center of the spindle and at its bottom end, at which places the same is screw-threaded, are provided cross pieces *s* (Fig. 3) which are guided in slots in the pipe *p* by means of pins *t*. The cross pieces have pegs or tongues *u*, around which the end links *v* of the chains *h*¹ or the links *w* of the arms *e*¹ engage.

The anchor is used as follows: It is put into the ground in known manner by boring a hole into which the folded anchor is

placed. The springs press the arms outwardly, so that the outwardly bent points of the arms are pressed into the sides of the hole. Now when the shank is pulled, the points of the arms will engage in the ground. As the shank is continued to be pulled the arms will open until the chains *h*¹ are stretched and prevent them opening farther. In this position the anchor offers its greatest resistance. The anchor is not removed from the ground by digging it out, as is otherwise the case, but by detaching the arms from the shank *p* by raising the cross pieces *s* by rotating the spindle *r* and removing their tongues *u* from the links *v* and the links *w*. The shank is first removed from the hole and then the arms are individually withdrawn by means of their ropes *x* or the like. The parts thus obtained again can be assembled, and the anchor can be used afresh.

I claim:

1. An anchor comprising in combination, a tubular shank, screw-threaded holding means therein, a plurality of arms detachably and pivotally attached at the bottom portion of said shank to said means, and means detachably and movably connecting said arms at a higher portion of the shank to said means, for the purpose specified.

2. In an anchor which can be dismembered, the combination, with a tubular shank, of screw-threaded holding means therein, an arm pivotally attached to the bottom portion of said means, a spring on said arm, and a chain attached near the point of said arm and engaging the upper portion of said means.

3. In an anchor which can be dismembered, the combination, with a perforated tubular shank, of a spindle revoluble therein, said spindle having a lower screw-thread and an upper screw-thread, an upper cross piece having a tongue movable on said upper screw-thread, a lower cross piece having a tongue movable on said lower screw-thread, an arm, a link attached to the bottom end of said arm and normally passing around the latter tongue, and a chain attached to said arm and normally held by the former tongue.

HEINRICH FUCHS.

Witnesses:

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