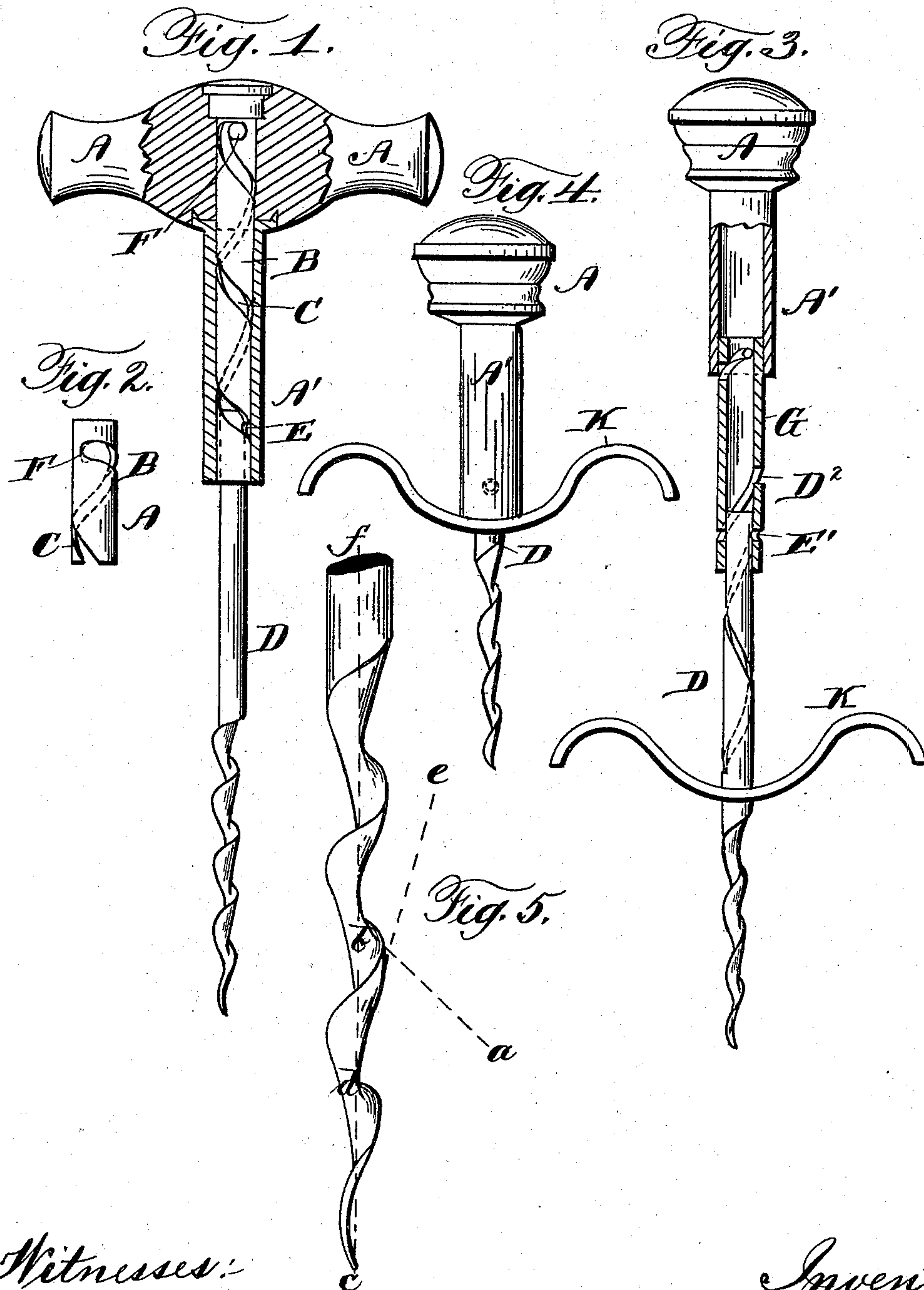


(No Model.)

A. L. QVARNSTRÖM.  
CORKSCREW.

No. 535,726.

Patented Mar. 12, 1895.



Witnesses:

H. K. Boulter

O. Northrup

Inventor:

Anders L. Qvarnström  
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Attorney



# UNITED STATES PATENT OFFICE.

ANDERS LUDVIG QVARNSTRÖM, OF SUNDYBERG, ASSIGNOR TO THE FIRM  
OF JULIUS STOOR, OF STOCKHOLM, SWEDEN.

## CORKSCREW.

SPECIFICATION forming part of Letters Patent No. 535,726, dated March 12, 1895.

Application filed July 3, 1893. Serial No. 479,529. (No model.)

*To all whom it may concern:*

Be it known that ANDERS LUDVIG QVARNSTRÖM, a subject of the King of Sweden and Norway, residing at Sundyberg, Sweden, have  
5 invented certain new and useful Improvements in Corkscrews, of which the following is a full, clear, and exact description.

This invention has relation to corkscrews, and especially that class thereof wherein a  
10 spindle is caused to screw into the cork by a downward pressure upon the handle.

One of the objects of this invention is to provide such a corkscrew in which the downward pressure upon the handle transmitted  
15 to the screw spindle will be greatest upon the latter at the beginning of the operation of screwing the device into the cork, so that said spindle will be caused to invariably engage in and with the cork; after which the  
20 pressure exerted upon the spindle in a longitudinal direction will gradually decrease during the screwing in of the same while the turning force at the same time increases.

A further object of the invention is to provide a locking device whereby the screw spindle will be prevented from rotating in the opposite direction when the cork is being pulled  
25 out of the bottle.

A still further object of the invention is to provide a corkscrew which may when telescoped together be as short as possible and thus be enabled to be carried in a very small  
30 compass.

With the above and other objects in view, all as will presently appear, the invention consists in the novel construction, arrangement and combination of parts as hereinafter fully described, illustrated in the drawings and pointed out in the appended claims.

40 In the accompanying drawings:—Figure 1 is a sectional elevation of my improved corkscrew in its simple form. Fig. 2 is a detail view of a portion of the sleeve or tube B. Fig. 3 is a sectional elevation showing the corkscrew extended, the same here embodying a slight modification; Fig. 4, an elevation showing said corkscrew telescoped together. Fig. 5 is an enlarged detail view of the lower  
45 portion of the screw spindle.

50 To the handle A is secured a tube or sleeve A' in which is arranged a tube or sleeve B

provided with a worm groove C with which engages the pin E secured to the screw spindle D. The worm groove C has, as shown, an increasing pitch upward in order that the  
55 screw spindle drawn out and placed against the cork may, when the handle is pressed down be subjected to end pressure which will be greatest at the beginning of the operation of screwing into the cork, and which pressure  
60 will then gradually decrease while at the same time the turning force exerted upon the spindle will increase. At its top the worm groove C terminates in a recess F into which the pin  
65 E can be made to engage by turning the handle slightly after the screw spindle has been completely screwed into the cork. The cork can then be pulled out in the usual manner by pulling upon the handle.

The recess F can be formed either so that  
70 the worm groove turns in the opposite direction, as shown by Fig. 1, or formed so as to run in an unchanged direction perpendicular to the axis, as in Fig. 2. The said recess can be more or less inclined as indicated by the  
75 dotted lines in said Fig. 2.

The provision and arrangements of the recess as described, serves to prevent the screw spindle turning in an opposite direction when the cork is being pulled out, the pin E invari-  
80 ably engaging in the said recess to thereby form a lock for said spindle.

In order that the corkscrew when telescoped together may be short and compact, there may be a second sleeve provided which can enter  
85 the sleeve secured to the handle. This is illustrated by Figs. 3 and 4 of the drawings. Into the sleeve A' secured to the handle A there is introduced the sleeve G which can rotate in the sleeve A' in the same manner  
90 as the screw spindle in Fig. 1. In the sleeve G the spindle D itself is adapted to rotate. The sleeve G is provided with a pin E' engaging in the worm groove D' of the spindle and the sleeve A' is provided with a pin E<sup>2</sup> en-  
95 gaging in the groove D<sup>2</sup> of sleeve G. The worm grooves can be arranged as described above, that is with varying pitch, and the locking device between the spindle and the sleeve surrounding it also provided. The  
100 spindle may be provided with a special handle K.



In Fig. 5, the lower end of the screw spindle is represented on a larger scale. The two lines  $a-b$  and  $d-e$  being continuations of the upper and lower generatrix of the worm groove, show that the first mentioned or upper side has a greater inclination to the axis than the lower side, the angle  $a-b-c$  being greater than the angle  $e-d-f$ . The inclination of the sides may vary provided the relation between the inclination of the one and that of the other be that just mentioned. The angle  $a-b-c$  can for instance be almost or entirely a right angle, and the angle  $e-d-f$  greater or smaller than that shown by the drawings.

By the arrangement of the screw worm shown in Fig. 5 the cork screw will be easy to screw in, as the under side of the screw makes a very acute angle to the axis of the latter. When pulling out the cork the reverse will be the case, as then the upper side of the screw worm offers resistance said side making almost a right angle to the line along which the pulling force acts. Consequently the pitch can be greater than otherwise whereby the cork screw will more quickly screw in the cork.

What I claim, and desire to secure by Letters Patent, is—

1. In a corkscrew of the class described, the combination with a screw spindle, and a sleeve surrounding the same of a worm groove and pin connection between said parts adapted to cause the rotation of the spindle when the sleeve is pressed downwardly, the pitch of said groove increasing toward the upper end of the latter, as and for the purpose specified.

2. In a corkscrew of the class described, the combination with a screw spindle, and a sleeve surrounding the same, of a worm groove and pin connection between said parts adapted to cause the rotation of the spindle when the sleeve is pressed downwardly, the pitch of the said groove increasing toward the upper end of the latter, an outermost sleeve surrounding the first mentioned sleeve, a pin and groove connection between said sleeves and

a handle to which the said outermost sleeve is secured, as specified.

3. In a corkscrew of the class described, the combination with a screw spindle, and a sleeve surrounding the same, of a worm groove and pin connection between said parts adapted to cause the rotation of the spindle when the sleeve is pressed downwardly, the pitch of the said groove increasing toward the upper end of the latter, and a handle to which the said sleeve is secured, and means for locking the spindle against backward rotation after the same has been screwed into a cork, consisting in an angularly arranged recess in which the upper end of the said groove terminates and a pin carried by the spindle and adapted to engage within said recess when the spindle has been screwed into a cork, as specified.

4. In a corkscrew of the class described, the combination with a screw spindle, and a sleeve surrounding the same, of a worm groove and pin connection between said parts adapted to cause the rotation of the spindle when the sleeve is pressed downwardly, the pitch of the said groove increasing toward the upper end of the latter, an outermost sleeve surrounding the first mentioned sleeve, a pin and groove connection between said sleeves, and a handle to which the said outermost sleeve is secured and means for locking the spindle against backward rotation after the same has been screwed into a cork consisting in an angularly arranged recess in which the upper end of the first mentioned groove terminates and a pin carried by the spindle and adapted to engage within said recess when the spindle has been screwed into a cork, as specified.

In witness whereof I have hereunto signed my name in the presence of two subscribing witnesses.

ANDERS LUDVIG QVARNSTRÖM.

Witnesses:

ERNST SVANGRIST,  
E. H. BRUHN.

It is hereby certified that the name of the assignee in Letters Patent No. 535,726, granted March 12, 1895, upon the application of Anders Ludvig Qvarnström, of Sundyberg, Sweden, for an improvement in "Corkscrews," was erroneously written and printed "the firm of Julius Stoor," whereas said name should have been written and printed *the firm of Julius Slöör*; and that the said Letters Patent should be read with this correction therein that the same may conform to the record of the case in the Patent Office.

Signed, countersigned, and sealed this 30th day of April, A. D. 1895.

[SEAL.]

JNO. M. REYNOLDS,  
*Assistant Secretary of the Interior.*

Countersigned:

JOHN S. SEYMOUR,  
*Commissioner of Patents.*