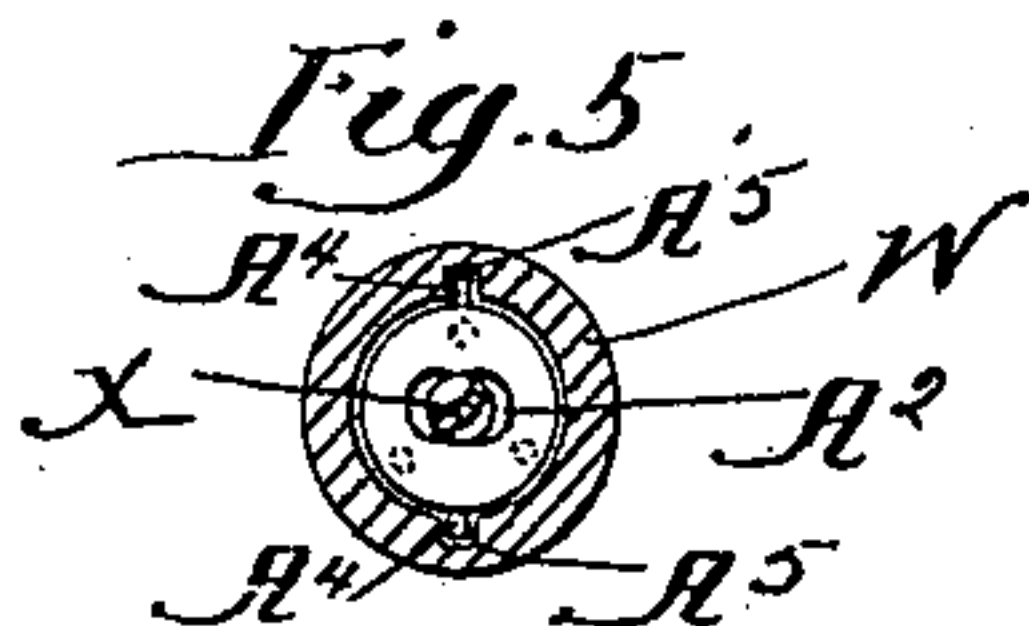


J. F. DUFFY.  
CORK EXTRACTOR.

Patented Oct. 14, 1890.



David J. Johnson



*A Inventor:*

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By Francis W. Parker  
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# UNITED STATES PATENT OFFICE.

JAMES F. DUFFY, OF CHICAGO, ILLINOIS.

## CORK-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 438,410, dated October 14, 1890.

Application filed December 26, 1889. Serial No. 334,935. (No model.)

*To all whom it may concern:*

Be it known that I, JAMES F. DUFFY, a citizen of the United States, and a resident of Chicago, county of Cook, and State of Illinois, have invented a certain new and useful Cork-Extractor, of which the following is full, clear, and exact specification.

My invention relates to cork-extractors, and has for its object to provide simple and convenient means for the extraction of corks from bottles and the like.

My invention is illustrated in the accompanying drawings, wherein—

Figure 1 is a side view of my machine; Fig. 2, a front view; Fig. 3, a detail sectional view of the upper portion; Fig. 4, a detail of the nut; Fig. 5, a cross-section of the nut and guiding-cylinder.

Like parts are indicated by the same letter in all the figures.

A is a base, from which rises the standard B and the two rods C C and the pivot-block D. On the rods C C is secured the cross-piece E, from the ends of which are suspended the pulleys F F.

G is a movable platform, perforated to receive and thus be guided by the rods C C.

H is a bifurcated foot-lever, pivoted on the block D and having on its outer ends the cords J J, which cords pass over the pulleys F F and are secured to the movable platform G.

K is a bottle in position on the platform G, and L L are spiral springs encircling the rods C C above the platform G and normally tending to keep the same down. Secured at the upper end of the standard B is the tubular portion M, which is provided with the plunger N, pivoted to the links O O, which are in turn pivoted each to one end of the bifurcated handle P, so that by operating the handle on its pivot R the plunger N is reciprocated within the tubular piece M.

S S are the slots, through which the pivot-pins T T, connecting the links O to the plunger N, extend. Within the lower extremity of the cylindrical portion is secured the centrally-perforated plug U, having attached thereto the conically-shaped receiver V to receive the head of the bottle K. Within the cylinder M, at its enlarged portion W, is secured to the plunger N the piece X, so as to reciprocate with the plunger N, but free to rotate thereon.

The portion X is twisted like a twist-drill, and at its lower end is secured the gimlet Y to enter the cork Z.

A' A' are the disks of an open screw-driving nut. Each disk is provided with the slot or aperture A<sup>2</sup> A<sup>2</sup>, through which the twisted portion X passes.

A<sup>3</sup> A<sup>3</sup> are pins connecting the two plates A' A'.

A<sup>4</sup> A<sup>4</sup> are lugs projecting from the plates or disks A' A' into the vertical grooves A<sup>5</sup> A<sup>5</sup> within the cylinder W. B' is a flat flange, against which the upper disk A' rests when it is elevated, and B<sup>2</sup> is the flat portion of the plug U, against which the lower flange A' rests when it is depressed, as shown in Fig. 3.

C' is an elastic cushion inside of the receiver V.

C<sup>2</sup> is a pin in the plunger N, which projects into the annular groove C<sup>3</sup> in the upper cylindrical portion or head on the twisted portion X.

C<sup>4</sup> is a flat spring projecting into the path of the cork Z as the latter is withdrawn.

The use and operation of my invention are as follows: A bottle containing the cork to be removed is placed upon the platform G, as indicated in the dotted lines in Fig. 2. If now the foot-lever of treadle H be operated by depressing its outer end pressure will be applied to the cords J and the bottle will be forced upward until its head is within the receiver V. If now the handle P be raised, the plunger N will be forced downwardly until the point of this gimlet Y reaches the top of the stopper Z. The parts are so proportioned that at this moment the open nut or the plates A' A' will have reached a position where the lower plate A' rests upon the top of the plug U. The open nut, being no longer free to move with the twisted portion X, and being prevented by the lugs and grooves from rotating the twisted portion itself, together with the gimlet Y, rotates upon the plunger N, and this rotation is such that the gimlet is driven into the cork until at the limit of the motion the parts are in the position indicated in Fig. 3. If now the handle be forced downwardly, the plunger rises; but the gimlet does not rotate until the upper plate A' engages the flange B', in which case the twisted portion X, with the gimlet, begins to rotate,



but in the opposite direction, so as to withdraw the gimlet, the freed cork being left in the space between the receiver V and the plug U. In this position it is expelled from the extractor by the reaction of the spring C<sup>4</sup>.  
5 By removing the foot from the lever H the bottle will be lowered, so that it can be removed and another put in its place. The proportion of the link O to that part of the  
10 lever-handle P beyond the pivot R is such that the handle P may be folded down until practically parallel with the length of the principal parts of the extractor for convenience in shipping. The structure of the open  
15 nut is such as to be very simple and easy to make, a small slot or aperture in each plate being all that is necessary to receive and operate the twisted portion. The movable platform, operated substantially as indicated, permits an easy and rapid manipulation of the  
20 bottle. The handle P is so pivoted and connected with the plunger as that its downward stroke is the stroke upon which the stopper is withdrawn, and hence is the stroke of the  
25 greatest effort of work.

The principal work in extracting the cork consists in withdrawing it and not in forcing the gimlet into it, and as the greatest force can be most easily exercised in a downward motion I have constructed the device as shown. 30

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is as follows:

In a cork-extractor, the combination of a standard with a table adapted to reciprocate 35 vertically thereon and hold the bottle, said table depressed by spiral springs and connected with a foot-lever, so as to be elevated in opposition to the springs, when desired, a conically, shaped downwardly-open part to 40 receive the head of the bottle and a pivoted handle and reciprocating plunger operated thereby, and a gimlet on such plunger, as shown and described.

JAMES F. DUFFY.

Witnesses:

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