(No Model.)

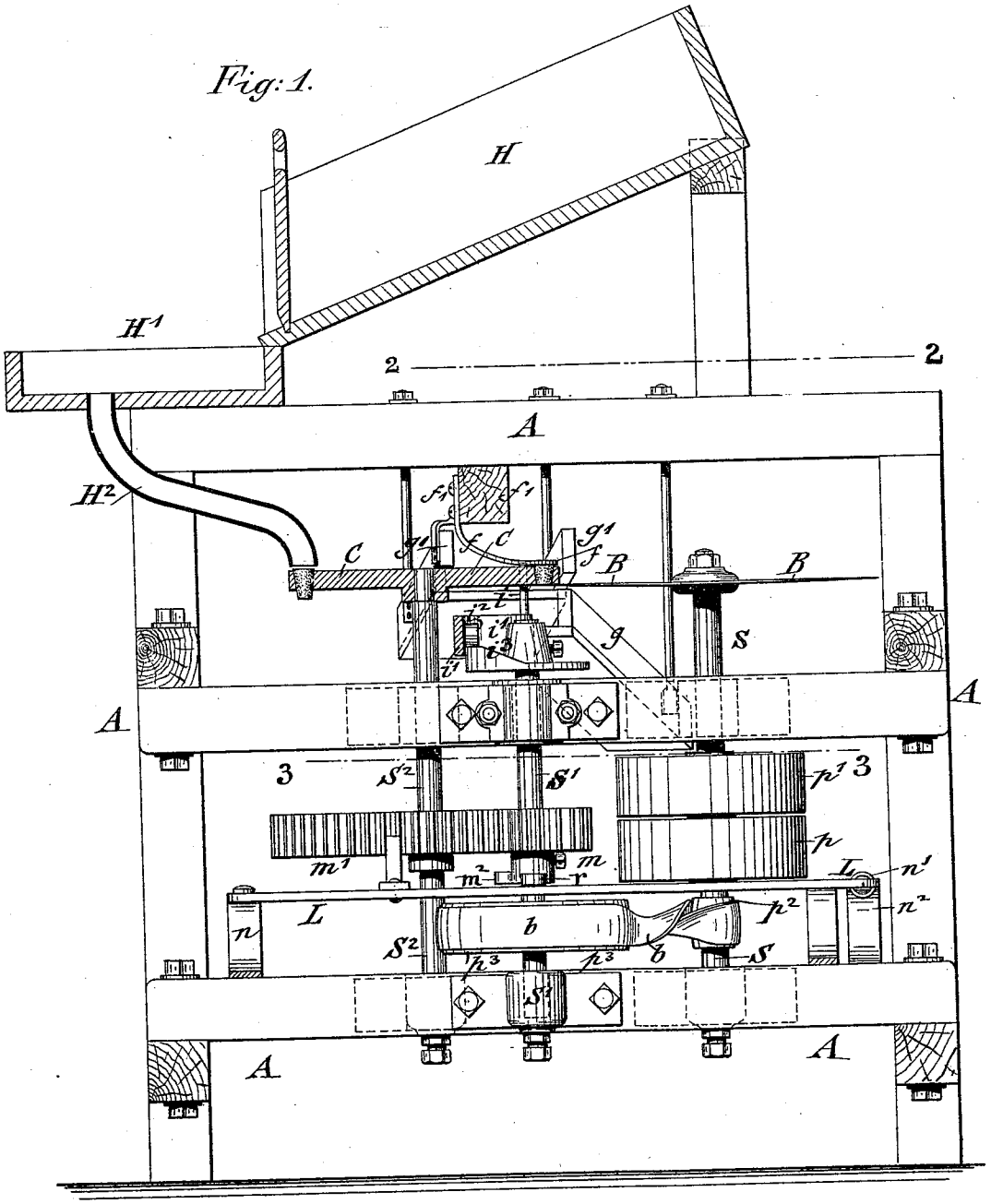
2 Sheets—Sheet 1.

F. C. TRUSLOW.

MACHINE FOR CUTTING CORKS.

No. 520,744. Patented May 29, 1894.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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Fig: 2.

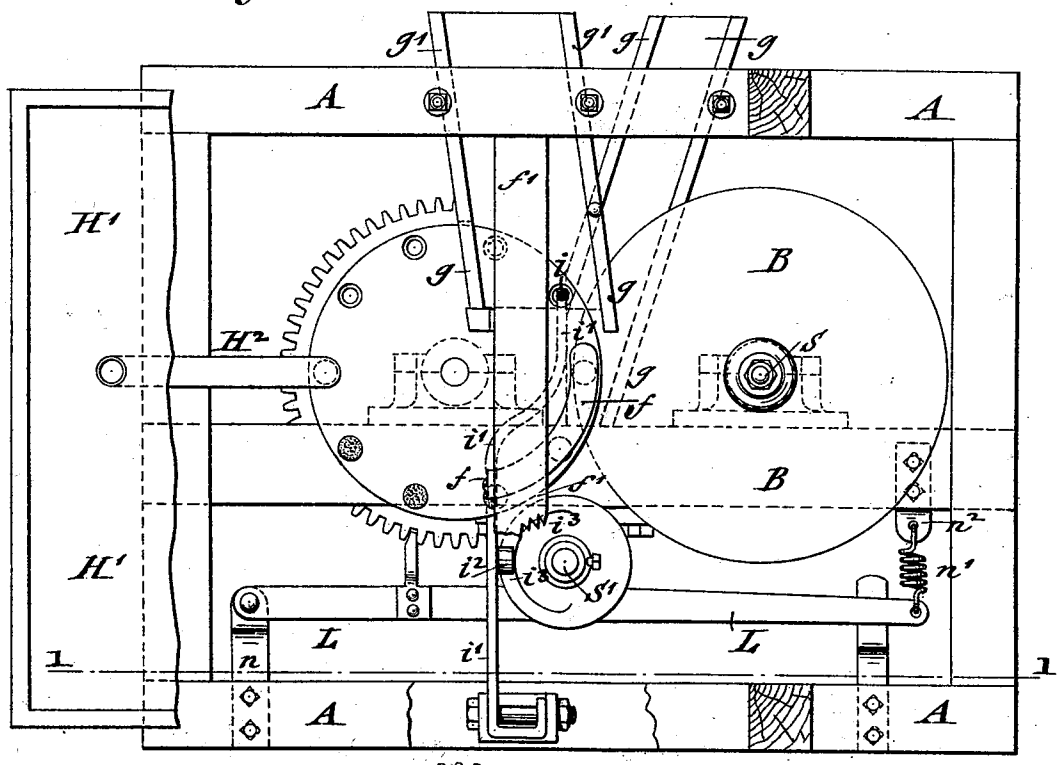
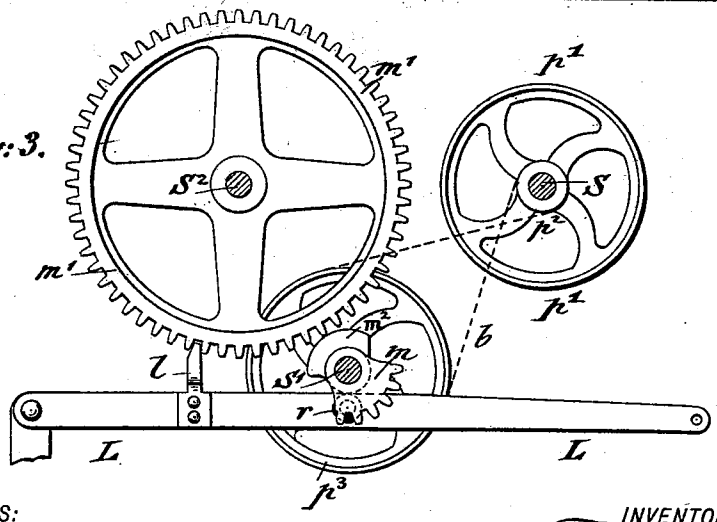


Fig: 3.



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UNITED STATES PATENT OFFICE.

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MACHINE FOR CUTTING CORKS.

SPECIFICATION forming part of Letters Patent No. 520,744, dated May 29, 1894.

Application filed May 15, 1893. Serial No. 474,369. (No model.)

To all whom it may concern:

Be it known that I, FREDERICK C. TRUSLOW, a citizen of the United States, and a resident of Brooklyn, county of Kings, State of New York, have invented certain new and useful Improvements in Machines for Cutting Corks to Uniform Lengths, of which the following is a specification.

This invention has reference to an improved machine for cutting corks of tapering shape to uniform lengths in a perfectly reliable and automatic manner, and the invention consists of a machine for cutting taper-corks to uniform lengths, which comprises an intermittently-rotating feed-wheel having tapering holes corresponding to the size of the cork, a feed-tube by which the corks are successively fed to the holes of the disk, and a rotary cutter-disk by which the lower projecting ends of the corks are cut off or trimmed to the required length. A spring arm presses on the upper end of the cork and holds it in position until the lower end is trimmed off, upon which the trimmed-off cork is ejected, on the next motion of the feed-wheel by the action of an intermittently-operated lever so that the cork is dropped into a chute and conducted off, while the trimmed-off portion is conducted to a second chute arranged below the level of the feed-disk.

The invention has further certain details of construction, which will be fully described hereinafter and finally pointed out in the claims.

Referring to the drawings, Figure 1, represents a vertical longitudinal section on line 1—1, Fig. 2, of my improved machine for cutting corks to uniform lengths. Fig. 2, is a plan of my improved machine, partly in horizontal section on line 2—2, Fig. 1, and Fig. 3, is a detail horizontal section on line 3—3 Fig. 1, showing the motion-transmitting gear-wheels and the mechanism by which the feed-disk is intermittently operated and rested.

Similar letters of reference indicate corresponding parts.

Referring to the drawings A represents the supporting frame of my improved machine for cutting corks to uniform lengths. The supporting frame A is provided with three pairs of neck and step-bearings which serve to support three vertical shafts S, S′, S^2, the shaft S carrying a cutter-disk B at its upper end, and a fast pulley p and a loose pulley p' at its middle part. The fast pulley p receives rotary motion by a suitable belt (not shown in the drawings) in the ordinary manner. To the lower end of the cutter-shaft S is applied a fast pulley p^2 which transmits rotary motion by a cross-belt b to a pulley p^3 on the second or intermediate shaft S′. The intermediate shaft S′ is provided with a mutilated pinion m which meshes at each rotation of the intermediate shaft S′ with a gear-wheel m' on the third shaft S^2, which is supported, like the cutter-shaft S and intermediate shaft S′ in a suitable step and neck-bearing of the supporting frame A and which carries a feed-disk C at its upper end and in close proximity to the circumference of the cutter-disk B. The mutilated pinion m and the gear-wheel m' impart intermittent rotary motion to the shaft S^2 and to the feed-wheel C at each rotation of the driving shaft S and intermediate shaft S′. The feed-wheel C is provided near its circumference with a number of equidistant and slightly-tapering holes d, into which are dropped successively the taper-corks that are to be cut or trimmed to uniform length. The corks are supplied from a suitable supply-hopper H which is supported on top of the main-frame A into a box or hopper H′ and fed from the same by a curved or inclined feed-tube H^2 which terminates above the feed-wheel into the holes d of the same. The corks are dropped by the attendant one after the other into the feed-tube H^2 and dropped in regular succession into the holes of the feed-wheel C. Below the mutilated pinion m is arranged on the shaft S′ a cam m^2 which serves to engage an anti-friction roller r that is arranged on a lever L which is pivoted on one end to a bracket-arm n of the supporting-frame and connected at its opposite end by a helical spring n' with a fixed arm n^2 on the frame A, as shown clearly in Figs. 1 and 2. The lever L is provided with a fixed stop-tooth l that serves to engage the teeth of the gear-wheel m', as soon as the latter has been moved for the required distance by the mutilated pinion m. While the mutilated pinion m intermeshes with the gear-wheel m, the cam m^2 is placed in contact with

the anti-friction roller r, so as to press on the latter and move thereby the lever L against the tension of its spring n' away from the gear-wheel m', so as to withdraw the stop-tooth l from the teeth of the gear-wheel m. As the cam m^2 is arranged so as to extend from the shaft S′ in a direction diametrically opposite to that of the mutilated pinion m, the action of the cam m^2 on the lever L takes place simultaneously with the engagement of the teeth of the mutilated pinion m with the teeth of the gear-wheel m'. As soon as the mutilated pinion m clears the teeth of the gear-wheel m', the lever L is also released from the cam m^2 and the stop-tooth l returned immediately by the action of the spring l' into engagement with the gear-wheel m', so that the same is locked, firmly held in position and prevented from turning on its axis. The feed-wheel C is thereby also retained firmly in position, so that the tapering hole d which is then below the lower end of the feed-tube H^2 is retained in position below the same for receiving a cork. If, for instance, the feed-wheel C is provided near its circumference with ten equidistant holes d, the mutilated pinion m provided with six and the gear-wheel m' with sixty teeth, then ten full rotations of the driving shaft S and intermediate shaft S′ are necessary to impart one entire rotation to the feed-wheel C. The entire rotation of the feed-wheel however, is made up from ten intermittent or step-by-step motions, which are imparted thereto by the mutilated pinion, said step-by-step motions being accurately defined by the stop-tooth l, before described, so that one hole of the feed-wheel C after the other is placed in a reliable manner below the end of the feed-tube H, and thereby the regular supply of corks to the holes of the feed-wheel from the feed-tube secured. The sharp edge of the rotating cutter-disk B moves in contact with the under side of the circumference of the feed-wheel C and extends sufficiently over the under side of the feed-disk that the lower projecting ends of the corks are cut off or trimmed by the cutter-disk as they are successively fed by the feed-wheel toward the same. The corks are retained in the holes d of the feed-wheel C by means of a spring-arm f which is attached to a cross-piece f' of the supporting frame A above the feed-wheel C, as shown clearly in Fig. 1, said spring-arm pressing on the top of the corks as they are moved by the feed-wheel under the lower arm of the spring-arm f. The corks are thereby held firmly in position in the feed-wheel C, so that the lower projecting ends of the same are acted upon by the cutter-disk and trimmed or cut off to the required length. The lower cut-off end of the cork is dropped into a downwardly-inclined chute g, which is located below the feed-wheel C and conducted by the chute g into a suitable receptacle (not shown in the drawings), while the trimmed cork is ejected from its hole in the feed-wheel C after the next intermittent motion of the feed-wheel by an ejecting pin i which is arranged for the distance of one hole d from the other back of the spring f at the rear-end of an ejecting lever i', that is pivoted at its front-end to the supporting-frame A and provided at an intermediate point with an anti-friction roller i^2 that is engaged by a raised cam i^3 attached to the upper end of the intermediate shaft S′, as shown clearly in Figs. 1 and 2. The raised cam i^3 actuates the ejecting lever i' as soon as the feed wheel C is locked in fixed position by the engagement of the stop-tooth l with the gear-wheel m'. The cam i^3 raises the ejecting-lever i' and forces thereby the ejecting-pin i on its rear-end in upward direction out of the hole d so that the cork is removed from the same and dropped into an inclined chute g' which is arranged above the first chute g on a level or nearly so with the feed-wheel, over which second chute the corks are conducted into a separate receptacle.

By the mechanism described, taper-corks of a certain size can be produced in a quick and automatic manner, as only one attendant is required for the proper supply of the corks to the feed-tube, all the rest being done automatically by the action of the machine.

When taper-corks of greater or smaller diameter or of greater or smaller length are to be trimmed, the feed-wheel is replaced by one having holes of corresponding size and of a thickness corresponding to the length of the cork to be produced. In this manner the machine can be used without any other change for cutting any size of taper-cork to the proper length, and thereby taper-corks of any required diameter and length supplied for the use of the different trades.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, of an intermittently-rotating feed-wheel provided with tapering holes to which the corks are supplied, a spring-arm adapted to bear on the upper ends of the corks, a rotating cutter-disk that laps over the under surface of the feed-wheel, so as to trim or cut off the lower projecting ends of the corks, and an intermittently-operated ejecting device, by which the cut-off corks are ejected from the holes of the feed-wheel, substantially as set forth.

2. The combination, of an intermittently-rotating feed-wheel having a number of tapering holes for the corks, a spring-arm adapted to bear on the upper ends of the corks as they pass below the same, a rotary cutter-disk that is adapted to lap over the under surface of the feed-wheel, an intermittently-actuated ejecting device for removing the cut-off or trimmed corks, and chutes arranged respectively below and on a level or nearly so with the feed-wheel, so as to conduct off the trimmed-off ends and the taper-corks themselves, substantially as set forth.

3. The combination, of an intermittently

rotating feed-wheel having tapering holes for receiving corks, a spring-arm pressing on the upper ends of the corks as they pass below the same, a rotary cutter-disk adapted to trim off the lower projecting ends of said corks, and a pivoted ejecting lever provided with an ejecting pin at its end that passes successively through the openings in the feed-wheel, and means for intermittently actuating the ejecting lever, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

FREDK. C. TRUSLOW.

Witnesses:

PAUL GOEPEL,

CHARLES SCHROEDER.