

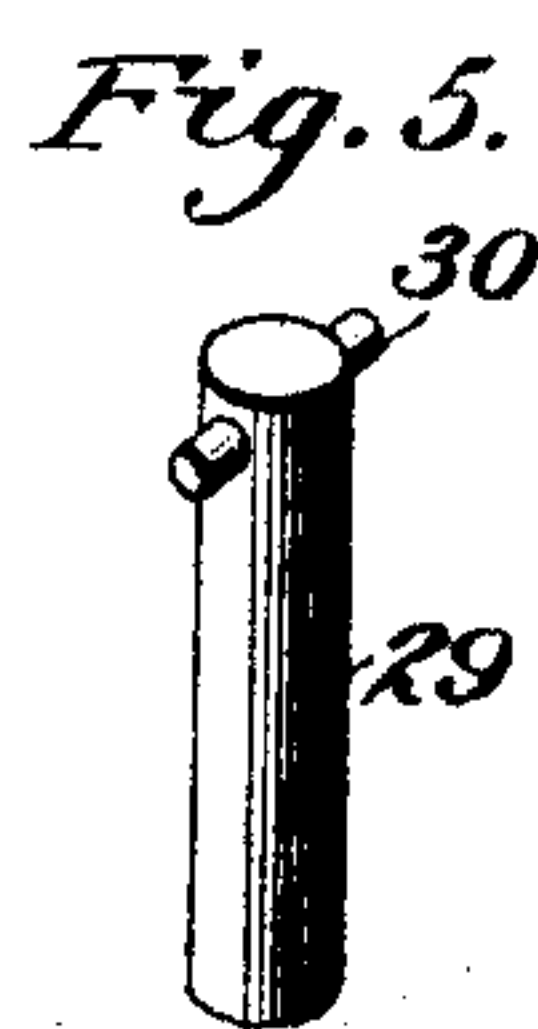
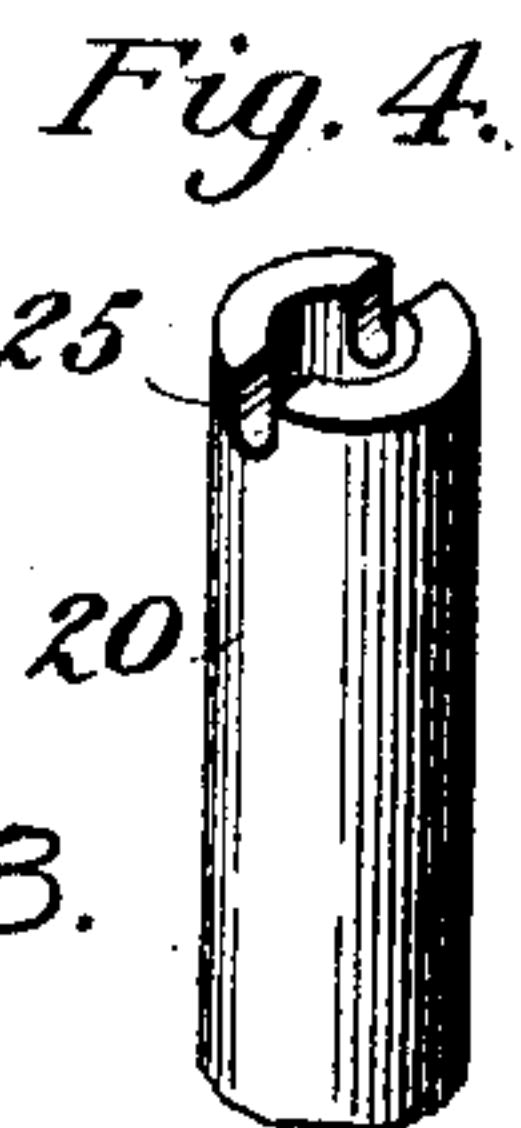
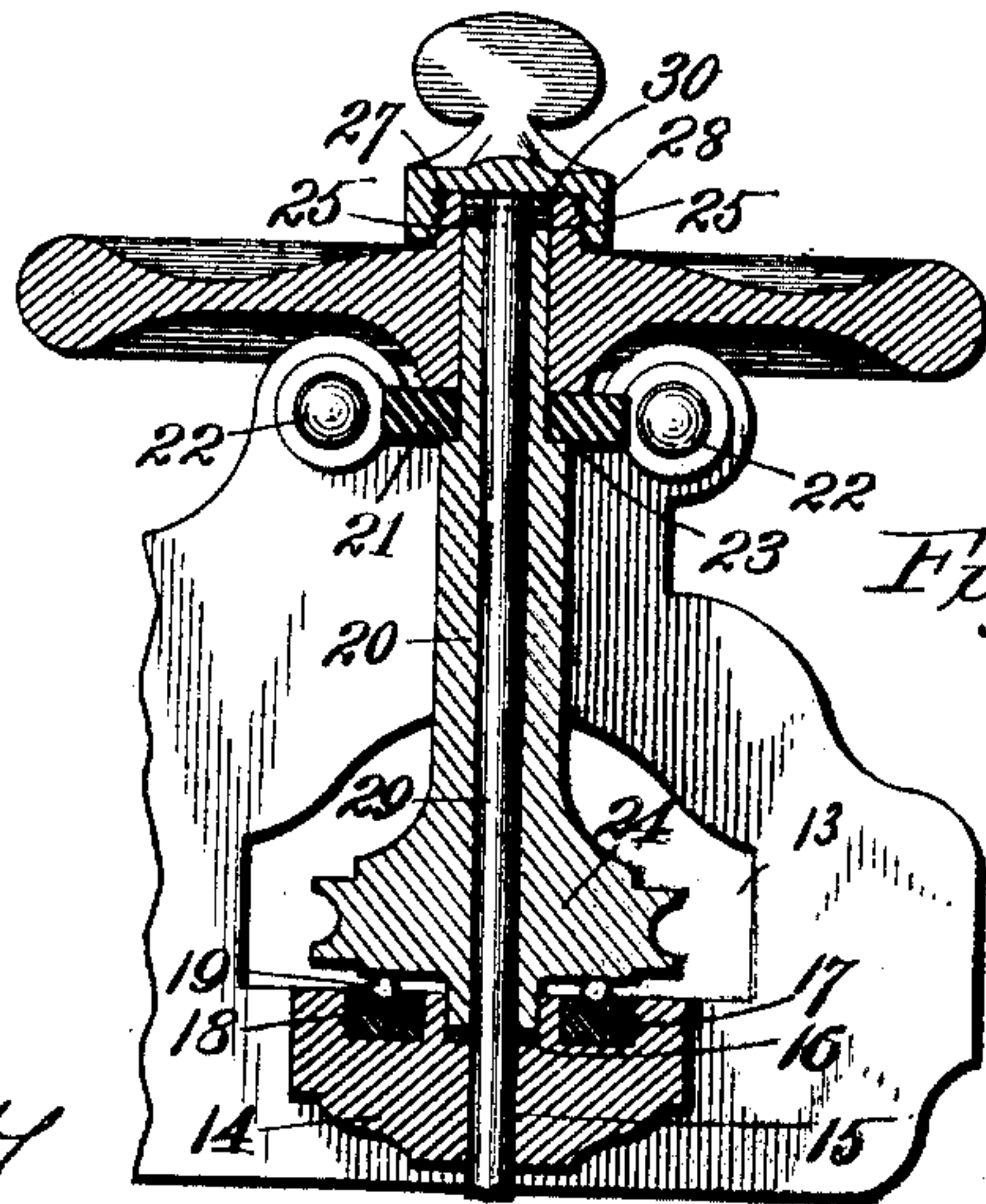
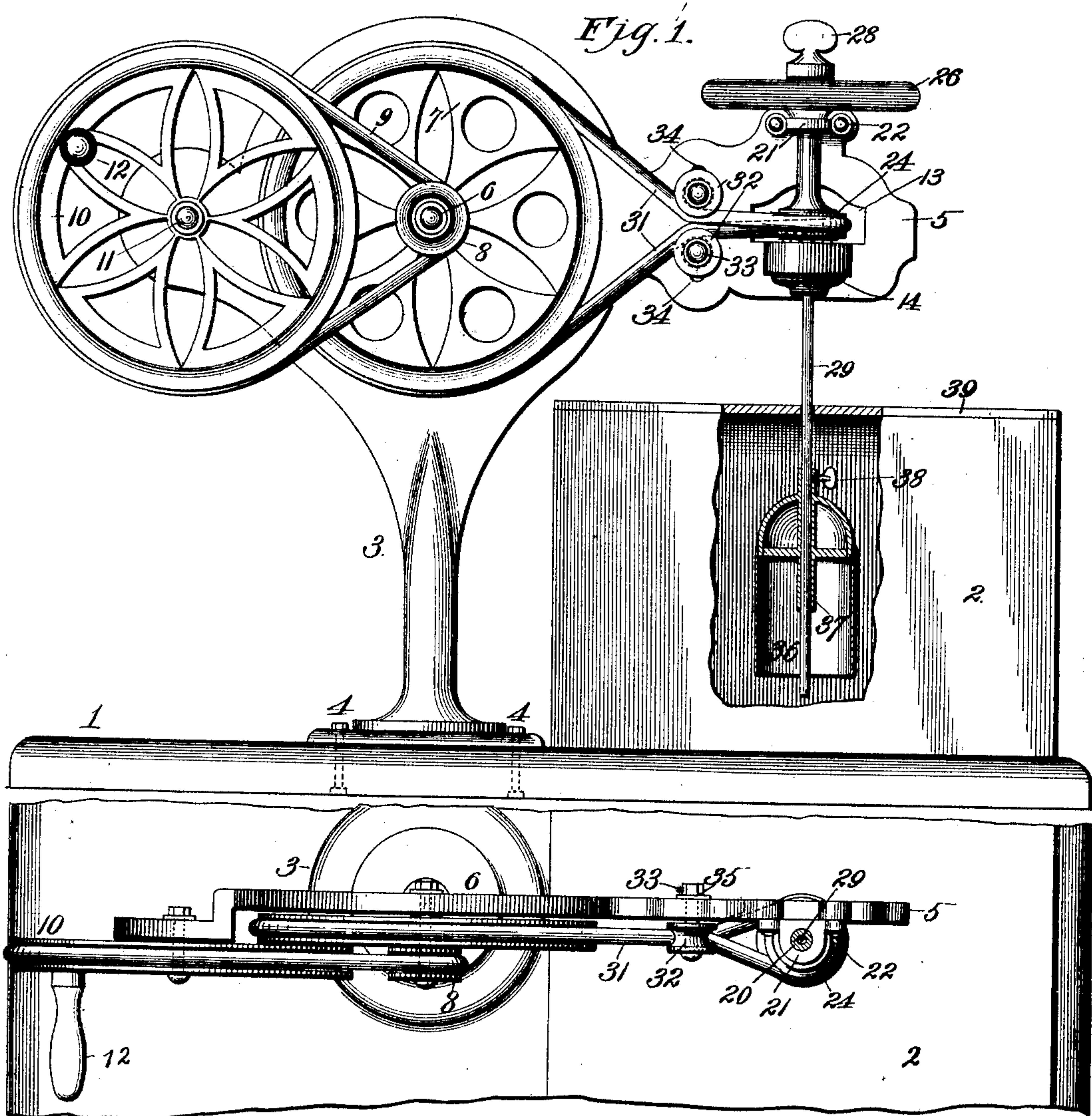
No. 679,545.

Patented July 30, 1901.

**F. D. SWANEY.
CHURN.**

(Application filed Mar. 12, 1901.)

(No Model.)



Witnesses:

H. C. Rodgers.
J. F. Comfrey

Inventor:
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By
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UNITED STATES PATENT OFFICE.

FLETCHER D. SWANEY, OF KANSAS CITY, KANSAS, ASSIGNOR OF ONE-HALF
TO HERBERT GALER, OF SAME PLACE.

CHURN.

SPECIFICATION forming part of Letters Patent No. 679,545, dated July 30, 1901.

Application filed March 12, 1901. Serial No. 50,789. (No model.)

To all whom it may concern:

Be it known that I, FLETCHER D. SWANEY, a citizen of the United States, residing at Kansas City, in the county of Wyandotte and State of Kansas, have invented certain new and useful Improvements in Churns, of which the following is a specification.

My invention relates to churns, and more especially to churns of that class embracing a hollow cylindrical dasher which violently agitates the cream in the manner of a maelstrom, my object being to produce a churn of this character of simple, strong, durable, and cheap construction.

With this object in view and others as hereinafter appear it consists in certain novel and peculiar features of construction and organization, as hereinafter described and claimed, and in order that the invention may be fully understood reference is to be had to the accompanying drawings, in which—

Figure 1 represents a view, partly in side elevation and partly in section, of a churn embodying my invention. Fig. 2 is a plan view of the same. Fig. 3 is an enlarged vertical section of part of the churn. Fig. 4 represents a detail perspective view of the upper end of the vertical sleeve. Fig. 5 is a similar view of the upper end of the dasher-shaft carrying the pin to engage the notches of said sleeve to interlock said sleeve and shaft so that they will rotate together.

In the said drawings, 1 designates a base, upon which are mounted a tank 2 of suitable form and a cast-metal stand 3, the latter being bolted, as at 4, to the base and provided with an arm 5, overhanging the tank. Journaled on a stub-shaft 6, suitably secured to stand 3, are the integrally-formed belt-wheels 7 and 8, the latter being preferably in front and belted, as at 9, to a large belt-wheel 10, also journaled upon a stub-shaft 11, suitably mounted in the stand, said wheel 10 having a handle 12, by which it is turned, a comparatively slow rotation of said wheel obviously imparting high speed to belt-wheel 7.

13 designates an opening in arm 5, and 14 a bearing just below said opening and cast integral, by preference, with said arm, the passage 15 of said bearing being vertically above the center of the tank 2 and diametric-

ally enlarged at its upper end, so as to provide a circular bearing-cavity 16 for a purpose which hereinafter appears, and said bearing is also provided in its upper side with a groove 17, concentric of and surrounding said cavity.

18 designates a grooved ring, of hardened steel, to provide a raceway for the balls 19.

20 designates a vertical sleeve having its lower end fitting snugly in bearing-cavity 16 and having its upper end journaled in the bearing-ring 21, bolted, as shown at 22, or otherwise secured to the stand, that portion of the sleeve extending through the bearing being diametrically reduced, so as to form a shoulder 23, the ring resting upon said shoulder and holding the lower end of the sleeve reliably in the bearing-cavity 16, a grooved pulley 24, cast with the sleeve, resting upon the balls 19 and constituting, in conjunction with the same and the grooved ring, a ball-bearing, which reduces friction to the minimum. The upper end of the sleeve is notched at diametrically opposite points, as at 25, and carries rigidly in any suitable manner a balance or fly wheel 26, having an upwardly-projecting threaded hub 27 to receive the internally-threaded cap 28, the latter being to hold the dasher-shaft 29, fitting snugly in sleeve 20, down to its proper position, said shaft being provided with a cross-pin 30 at its upper end engaging the notches 25 of the sleeve in order that the rotation of the sleeve shall impart corresponding movement to the shaft, which movement is rendered smooth and uniform by the fly or balance wheel in the customary manner, this movement being imparted to the sleeve through the medium of a belt 31, connecting sleeve-pulley 24 with belt-wheel 7. As the axis of the belt-wheel and the axis of the pulley extend at right angles to each other, the opposite ends of the belt operate in corresponding planes, being guided at its bending-point by means of grooved idlers 32, mounted on stub-shafts 33, carried by arm 5, and in order that these idlers may also be utilized to maintain the belt at the proper tension stub-shafts 33 are mounted for adjustment in slots 34, being engaged at their opposite ends by clamping-nuts 35 to secure them at the desired point.

36 designates a hollow cylindrical dasher, the same extending vertically and being provided with a long sleeve 37 to obtain an extended and therefore reliable bearing upon the shaft within the tank, a set-screw 38, mounted in the dasher, serving to hold the latter at the desired point of engagement with the shaft.

The tank may be provided with a cover, as at 39, if desired.

Assuming that the parts are in the position shown and that the proper quantity of cream has been poured into the tank, the operator by grasping handle 12 and turning wheel 10 rapidly revolves the dasher at an exceedingly high speed, the result being the production of butter in from nineteen to fifty seconds. By the use of belts the operation of the machine is rendered practically noiseless, though it is to be understood that other gearing may be employed.

When it is desired to remove the shaft, cap 28 is removed and the shaft grasped and raised until the dasher is lifted out of the tank. Set-screw 38 is then manipulated to permit the shaft to slide upwardly through the dasher and be withdrawn from the sleeve. The reverse operation is followed in reassembling the parts.

From the foregoing it will be apparent that I have produced a churn which in addition to embodying the features of advantage enumerated as desirable also embodies features whereby the shaft and dasher may be readily and quickly withdrawn when desired, and while I have illustrated and described the preferred embodiment of the invention it is to be understood that minor changes may be resorted to without departing from the spirit and scope or sacrificing any of its advantages.

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

1. In a churn, a stand, a bearing carried thereby and provided with a bearing-cavity in its upper side, a sleeve journaled at its lower end in said cavity and provided with a shoulder, and with one or more notches in its upper end, a bearing for said sleeve, resting

upon said shoulder, and secured to the stand, a dasher-shaft extending through said sleeve, a pin carried by said shaft and engaging said notch or notches of the sleeve, a cap closing the upper side of said notches and securing the shaft against vertical movement in the sleeve, and means to rotate said sleeve, substantially as described.

2. In a churn, a stand, a bearing carried thereby and provided with a bearing-cavity in its upper side, a sleeve journaled at its lower end in said cavity and provided with a shoulder, and with one or more notches in its upper end, a bearing for said sleeve, resting upon said shoulder, and secured to the stand, a balance-wheel secured upon the upper end of the sleeve and provided with a threaded hub, a dasher-shaft extending through the sleeve and provided with a pin engaging said notch or notches, a screw-cap engaging the threaded hub of the balance-wheel to hold the shaft with its pin in said notch or notches, and means for rotating the sleeve, substantially as described.

3. In a churn, a stand suitably supported, a bearing secured to the stand and formed with a bearing-cavity in its upper side, a sleeve having its lower end engaging said cavity and having a ball-bearing relation with the bearing and provided with a shoulder near its upper end, a bearing secured to the stand and embracing the sleeve above said shoulder, a shaft extending through said sleeve and provided with a dasher and interlocked as regards rotatable and downward movement at its extreme upper end with the corresponding end of the sleeve, a balance-wheel upon the upper end of the sleeve, a cap screwed to the balance-wheel, and adapted to prevent upward movement of the shaft, and means for rotating said sleeve, substantially as described.

In testimony whereof I affix my signature in presence of two witnesses.

FLETCHER D. SWANEY.

Witnesses:

H. C. RODGERS,
G. Y. THORPE.