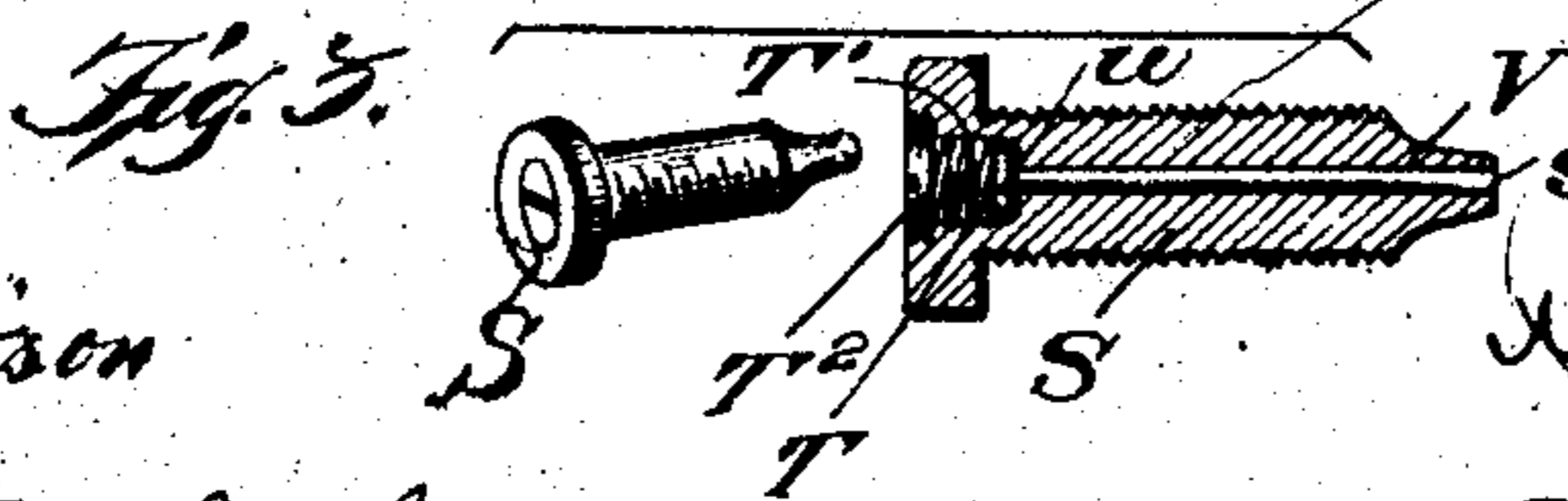
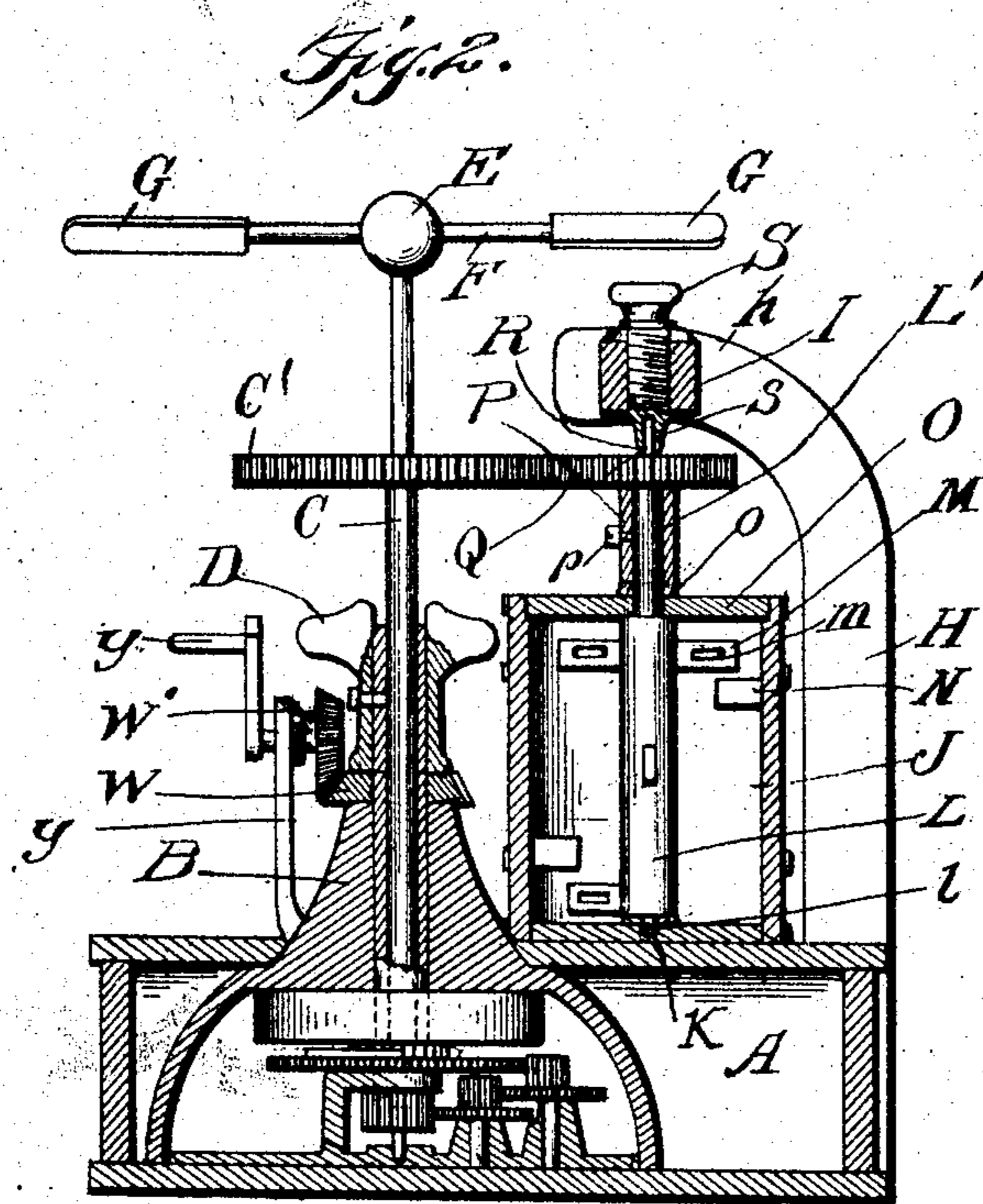
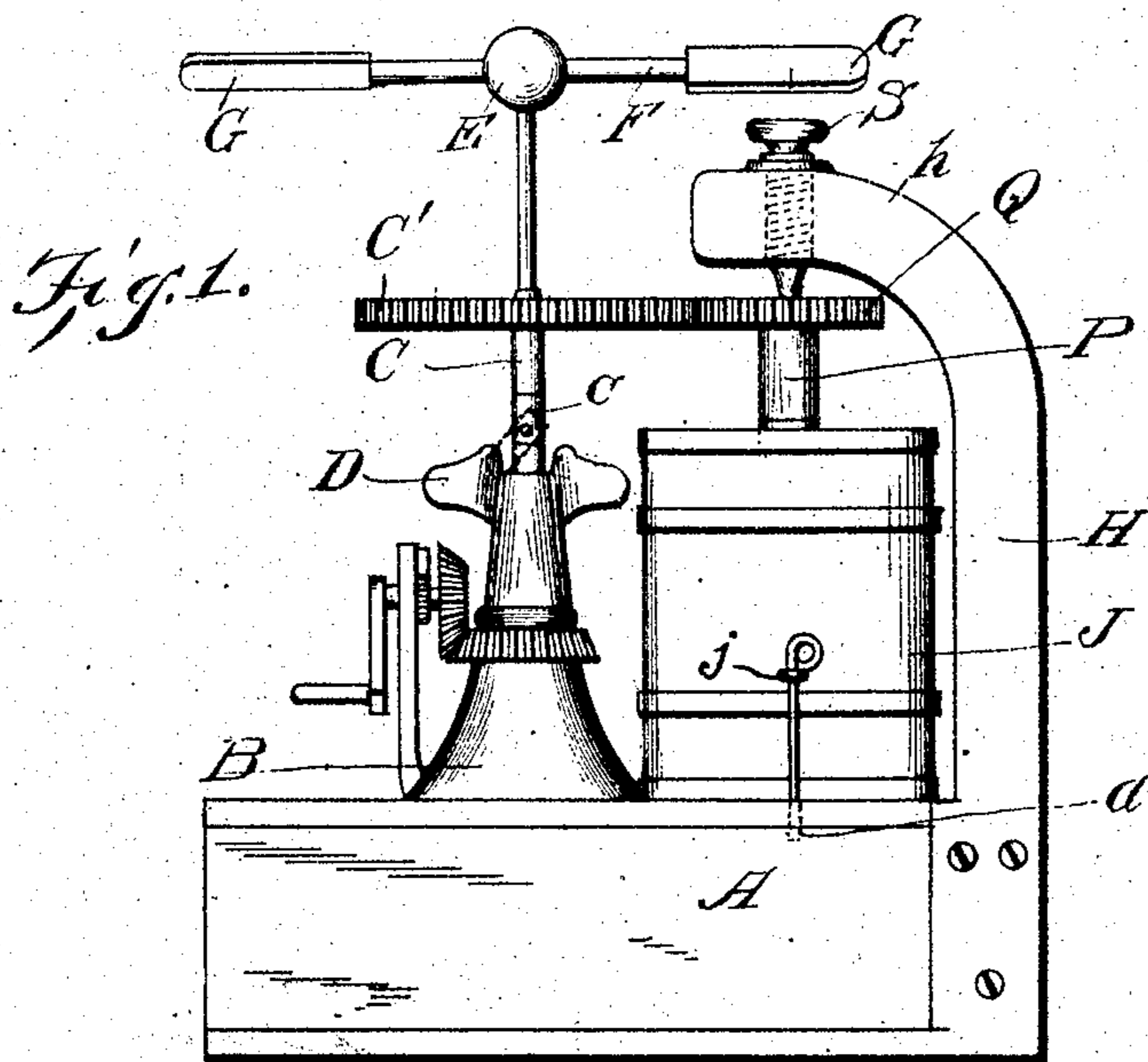


No. 786,805.

PATENTED APR. 11, 1905.

M. GRIMM.  
CHURN POWER.

APPLICATION FILED MAY 20, 1904.



**WITNESSES:**

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# UNITED STATES PATENT OFFICE.

MORGAN GRIMM, OF WEST ALEXANDER, PENNSYLVANIA.

## CHURN-POWER.

SPECIFICATION forming part of Letters Patent No. 786,805, dated April 11, 1905.

Application filed May 20, 1904. Serial No. 208,990.

*To all whom it may concern:*

Be it known that I, MORGAN GRIMM, a citizen of the United States, residing at West Alexander, in the county of Washington and State of Pennsylvania, have invented new and useful Improvements in Churn-Powers, of which the following is a specification.

My invention relates to improvements in churn-powers, and relates more particularly to that class driven by a spring-motor.

The object of my invention is to provide a churn-power which may be readily attached to a vertical single-dasher churn without changing the construction of the churn and by simply providing the upper end of the dasher-shaft with a combined gear and journal which is adapted to be secured to any vertical dasher-shaft.

Another object of my invention is to provide a fan attachment for the upper end of the main vertical drive-shaft which regulates the speed of the motor, thereby regulating the speed of the churn-dasher.

A still further object of my invention is to provide a more simple, cheap, and durable motor-power for churns.

In the accompanying drawings, Figure 1 is a side elevation of my improved device. Fig. 2 is a vertical sectional view of Fig. 1. Fig. 3 is an enlarged perspective and sectional view of the screw or bearing.

Referring now to the drawings, A represents a base which, as shown, is of an elongated and box form, which is adapted to hold or receive the motor B. The said motor, as shown, is of a form commonly shown in connection with the ordinary spring-motor fan, and the detail of the same need not be further described, as any form of a motor might be used provided it has a vertical upwardly-extending shaft C. The form shown in the sketch is provided with the winding-key D, which surrounds the shaft C, and carried by the said shaft is a swinging member *c*, which is adapted to be locked to the shaft in a vertical position, as shown in Fig. 1, when it is desired that the shaft be free to rotate; but when said member *c* is swung downward it engages the key D, and

thus the shaft is locked against rotation. The shaft C above said swinging locking member is provided with a large horizontally-arranged gear C', which is rigidly secured thereto, and the extreme upper end of the shaft is provided with a large ball E, forming a balance-ball for the shaft, and said ball is provided with outwardly-extending horizontal bars F. The outer ends of said bars are provided with blades G and serve as a governor for governing the speed of the main vertical shaft C, and said blades are adjustably held on said arms for the purpose of adjusting them so that they may be in either a vertical, horizontal, or oblique position, and thus the speed of the shaft is governed by the positioning of the blades. The said blades are provided with tapering recesses or sockets *g*, which are adapted to receive the tapering end *f* of the arms F, and thus the blades are held frictionally on the arms in their adjusted position.

It is seen that the motor and vertical shaft are located adjacent one end of the base A, and the opposite end is provided with the upwardly-extending standards H, which have their upper ends *h* curved inwardly toward the end of the base carrying the motor and are connected at their inner ends by a flat transverse bar I, which extends above the churn-body, as hereinafter more fully described.

Resting upon the base below the transverse bar I is a churn-body J, which is preferably of the form shown and is provided at each side with an eye *j*, through which passes a pin, and said pin enters an opening *a* in the base, and thus the churn-body is firmly held upon the base, and by removing the pins it will be also seen that the same can be readily removed when desired. The bottom of the churn-body is provided with a centrally-located journal-bearing K, in which is mounted the lower end of the dasher-shaft L. The dasher, as shown, is composed of an enlarged cylindrical portion L, which is provided at its lower end with a downwardly-extending pin *l*, which is adapted to enter and rotate in the journal-bearing K, carried by the bottom of the churn-body

J. The said dasher is provided with outwardly-extending paddles M, which are arranged in pairs on opposite sides of the portion L and are provided with openings *m*, thus causing the free rotation of the dasher and at the same time causing a greater agitation of the milk within the churn-body. The inside of the churn-body is provided with inwardly-extending members N, which extend in between the pairs of paddles, and thus break the centrifugal force of the milk or cream within the body, as such is the case, and thus causes the cream to more readily turn to butter. The portion L has its upper end reduced at L' and passing through an opening *o* in the cover O, and the cover, as shown, is made in two semi-circular sections. Thus the same can be removed without removing the dasher. Loosely fitting upon the upper end of the reduced portion L' is an elongated sleeve P, which may be vertically adjusted on the dasher-shaft and is held thereon by a set-screw *p*. By this structure it will be seen that the sleeve is adapted to be properly adjusted and fitted upon the dasher-shaft of any ordinary churn. The upper end of the sleeve is provided with a gear Q, which is rigidly carried thereby and which meshes with the gear C', whereby the dasher is rotated, and the gear Q being so much smaller than the gear C' the dasher is driven at a very high speed. The upper face of the gear Q is provided with an upwardly-extending journal, which I will now proceed to describe. The transverse bar I, carried by the standards H, is directly above the gear Q, and said bar is provided with a screw-threaded socket therein, and passing through said socket is a thumb-screw S, which has its lower end provided with a recess *s*, which is adapted to receive the journal R, and thus forming a bearing for the same. The said recess or opening *s* extends all the way through the screw and is provided at its upper end with the enlarged opening or recess T. Resting within said enlarged recess T is a disk *u*, which rigidly carries the outwardly-extending pin V, which extends nearly to the end of the recess or opening *s* and forms a spring tension for the end of the journal R. Within said recess is also a spring T', which bears against the disk U, and screwed within the outer end of said recess and bearing against the spring T' is a nut T<sup>2</sup>, whereby the spring and other parts may be readily replaced. By screwing the screw S upward or downward the tension of the bar V on the journal is increased or decreased, thus regulating the speed of the churn. When it is desired to remove the churn-dasher, the said screw is screwed upward until the journal R is out of the opening *s*, and thus either the dasher or the whole churn-body can be removed from the base.

Instead of winding the spring-motor by

means of the member D, I provide a beveled gear W, which meshes with the beveled gear W', and said gear is carried by a standard Y, carried by the base A, and said gear W' is adapted to be driven by a crank *y*. Thus the motor is more easily wound up, and the crank is adapted to slowly revolve as the motor rewinds.

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

1. A churn-power, comprising a base, a churn-body removably mounted thereon, a vertical dasher-shaft, rotatably mounted in said churn-body, a gear having a sleeve on its lower face and adapted to receive said shaft, a pivot carried by the upper face of said gear, a curved standard carried by the base and extending over said pivot, a vertically-adjustable screw in said standard and having a bearing for said pivot, and a spring-tension device within said screw and adapted to bear upon the upper end of said pivot.

2. A churn-power comprising a base, a churn-body carried thereby, a dasher rotatably mounted within the churn-body, a vertically-movable screw adapted to receive the upper ends of said dasher, and having a spring-bearing member engaging said dasher-shaft.

3. A churn-power comprising a base, a churn-body carried thereby, a dasher-shaft mounted therein, a vertical movable screw above said shaft and having an opening therein to receive said shaft, and a spring-pressed pin within said screw and adapted to engage the end of the shaft.

4. A churn-power, comprising a base, a churn-body carried thereby, a dasher-shaft mounted therein, a vertically-movable screw above said shaft, and having an opening therein to receive said shaft, and a spring-pressed tension device within said opening and adapted to bear against the end of the dasher-shaft.

5. A churn-power, comprising a base, a churn-body carried thereby, a dasher-shaft mounted therein, a vertically-movable screw above said shaft, and having an opening therein to receive said shaft, and a yieldingly-held pin within said opening and adapted to engage the end of the shaft.

6. A churn-power, comprising a base, a churn-body carried thereby, a dasher-shaft mounted therein, a vertically-movable screw above said shaft and having an opening therein to receive the end of said shaft, a rod within said screw and engaging the end of the shaft and a coil-spring within said screw and normally holding the rod in frictional contact with the dasher-shaft.

7. A churn-power, comprising a base, a spring-motor carried thereby, a churn-body resting upon the base and having eyes on op-

posite sides thereof, a pin passing through  
said eyes and entering openings in the base,  
a dasher-shaft within said churn-body, a ver-  
tically-movable screw forming a bearing for  
5 the upper end of said shaft, and a gear con-  
nection between said shaft and spring-motor.  
In testimony whereof I have hereunto set my

hand in the presence of two subscribing wit-  
nesses.

MORGAN GRIMM.

Witnesses:

M. J. KIMMINS,  
E. L. KIMMINS.