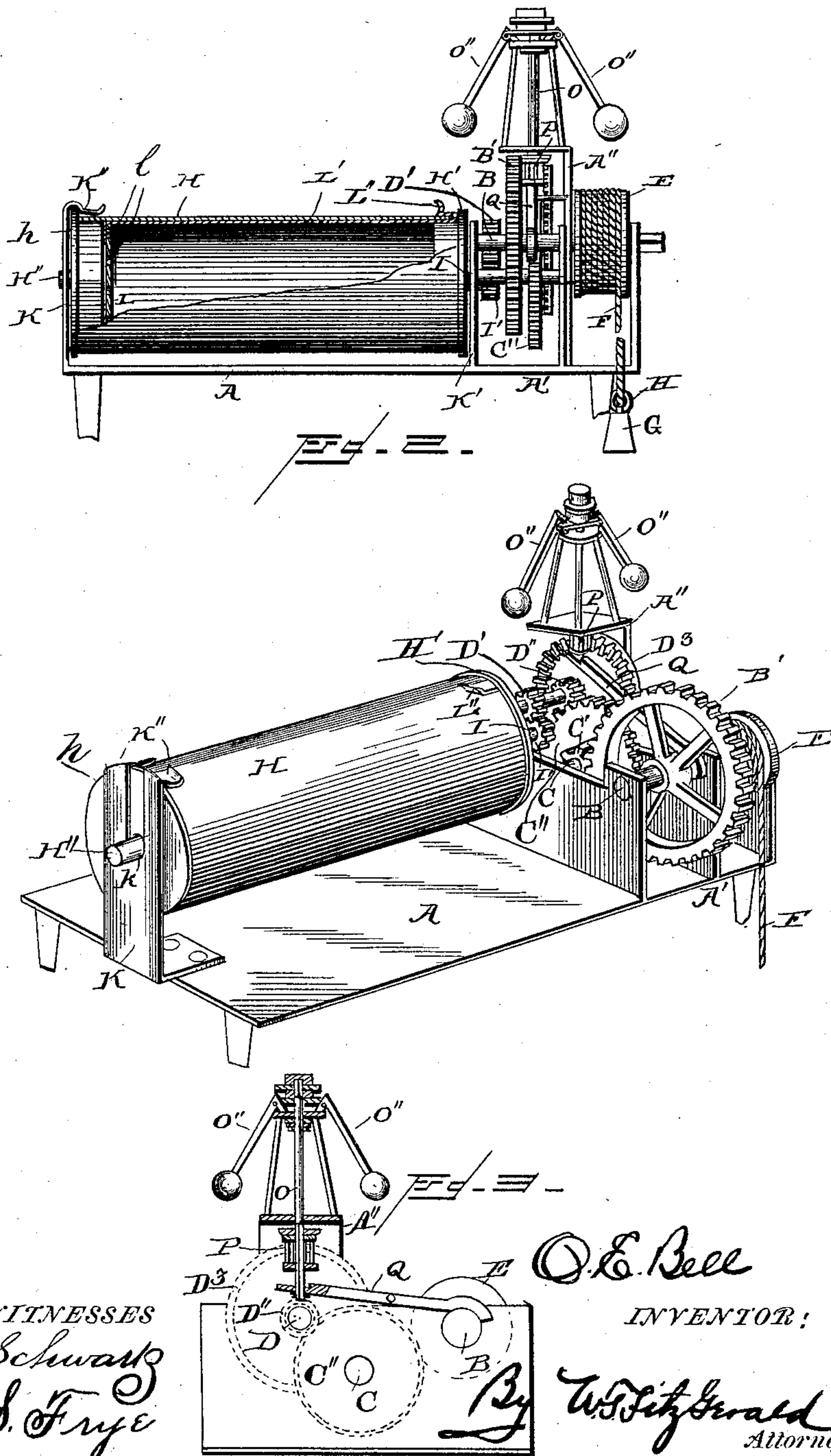


(No Model.)

O. E. BELL.
CHURN.

No. 452,251.

Patented May 12, 1891.



WITNESSES
A. J. Schwartz
C. S. Frye

O. E. Bell

INVENTOR:

By W. H. Fitzgerald
Attorney

UNITED STATES PATENT OFFICE.

OLLIE E. BELL, OF DERBY, KANSAS.

CHURN.

SPECIFICATION forming part of Letters Patent No. 452,251, dated May 12, 1891.

Application filed August 7, 1890. Serial No. 361,244. (No model.)

To all whom it may concern:

Be it known that I, OLLIE E. BELL, a citizen of the United States, residing at Derby, in the county of Sedgwick and State of Kansas, have invented certain new and useful Improvements in Motors; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to churns; and it consists more particularly in means for supporting the same while being revolved, as will be hereinafter fully described and claimed.

Referring to the accompanying drawings, Figure 1 is a sectional elevation of my new and improved churn-motor. Fig. 2 is a perspective view of the same. Fig. 3 is an end view.

The same letters of reference indicate corresponding parts in all the figures.

Referring to the several parts of the invention by letter, A indicates the main supporting-frame of the motor, upon one end of which is mounted in a frame A' the three transverse shafts B C D, carrying upon them the train of intermeshing wheels and pinions B' C' C'' and D' D'' D'''. I employ no springs whatever in connection with this train of intermeshing wheels and pinions; but upon the main wheel of the shaft B is secured a drum E, around which is wound a rope F, the other end of which is permanently secured to the frame A, as shown. On this rope is suspended a weight G, the rope passing through a ring H at the top of the weight; and it will be seen that when the rope has been wound upon the drum E by turning the axle B that the weight of the weight G will unwind the rope, thereby turning the drum E and with it the shaft B and the train of intermeshing wheels and pinions without the use of springs, and as the large main wheel B' meshes with the pinion C' on the second shaft C, and the wheel C'' on this shaft in turn meshes with the pinion D'' on the third shaft, it will be seen that the third shaft D will be revolved rapidly for a great number of revolutions for each single revolution of the outer shaft B.

H indicates my cylindrical churn, which is formed with the bottom flange h and the

spindle H'' at that end, and the upper end of the churn is closed by a tightly-fitting flanged cover H'. In the center of this cover is secured a spindle I, having on its outer end a pinion I', and the trunnions or spindles of the churn resting in bearings k, formed in the upper ends of the brackets K K', the bracket K being further formed with the spring-arms K'' K'', the hooked free ends of which fit over the bottom flange of the churn when the latter is placed in position on the supporting-brackets.

In operation a strainer is first placed in the churn, consisting of a circular plate L, formed with apertures l and having a long flattened handle L', the hooked upper end L'' of which fits over the upper edge of the churn-body. The cream is placed in the churn and the cover H' fitted on, when the end spindles are placed in the bearings of the supporting-brackets and the spring-arms K'' are caught over the bottom flange of the churn. When the churn is placed in this position, its end pinion I' will mesh with the pinion D' on the shaft D. The rope is now wound upon the drum, as before described, when the weight will unwind the rope, thus revolving the train of wheels, and through the pinion D'' revolving the churn with great rapidity. When the churning is completed, the churn is lifted off from the supporting-brackets, the spring-arms K'' permitting of its ready removal, and the cover is then removed from the top of the churn and the strainer lifted out by its handle, raising the butter with it and leaving the buttermilk in the lower part of the churn.

In order to cause the churn to be revolved at a uniform rate of speed I employ the following devices: In vertical bearings A'' of the frame A' is supported a governor-rod O, having upon its upper end the usual governor-arms O'', weighted at their ends. The lower end of this rod is squared and passes through the squared central aperture of pinion P. Upon the shaft D is secured the crown-wheel D³, the teeth of which mesh with the pinion P. It will now be seen that in operation as the shaft D revolves the governor-rod will be caused to revolve with it, and when an unusually high rate of speed is

reached the weight-arms of the governor, rising as they revolve, will raise the governor-shaft. The lower end of this shaft is pivoted to the inner end of a brake-lever Q. This
5 brake-lever is centrally pivoted, and its outer end passes immediately above the main shaft B. When the speed of the mechanism become too great and the governor-shaft is raised, it will press the free end of the brake-lever down upon the outer shaft B. The lever, thus operating as a brake, will retard the
10 movement of the main shaft and thus reduce the speed to its normal limits. As the speed decreases, the governor-arms will, of course, fall, lowering the governor-shaft and raising
15 the outer end of the brake-lever.

From the foregoing description, taken in connection with the accompanying drawings, the construction, operation, and advantages
20 of my invention will be readily understood.

It will be seen that my motor is simple, strong, and very durable in construction, as I dispense entirely with all springs for operating it.

The motor can be used for many other purposes besides churning, to which I do not, of course, limit myself. 25

Having thus described my invention, what I claim, and desire to secure by Letters Patent, is— 30

The combination, with a churn-body, of the end spindles secured thereto, one of said spindles having an ordinary cog-wheel, the supporting-frame having the recessed vertical standards adapted to receive the end
35 spindles of the churn, one of the said standards having the curved spring-arms adapted to fit over the end of the churn-body, and a suitable motor having a gear-wheel meshing with the cog-wheel on the churn-spindle, substantially as set forth. 40

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

OLLIE E. BELL.

Witnesses:

H. A. CLIFFORD,
JOHN W. WALTERS.