

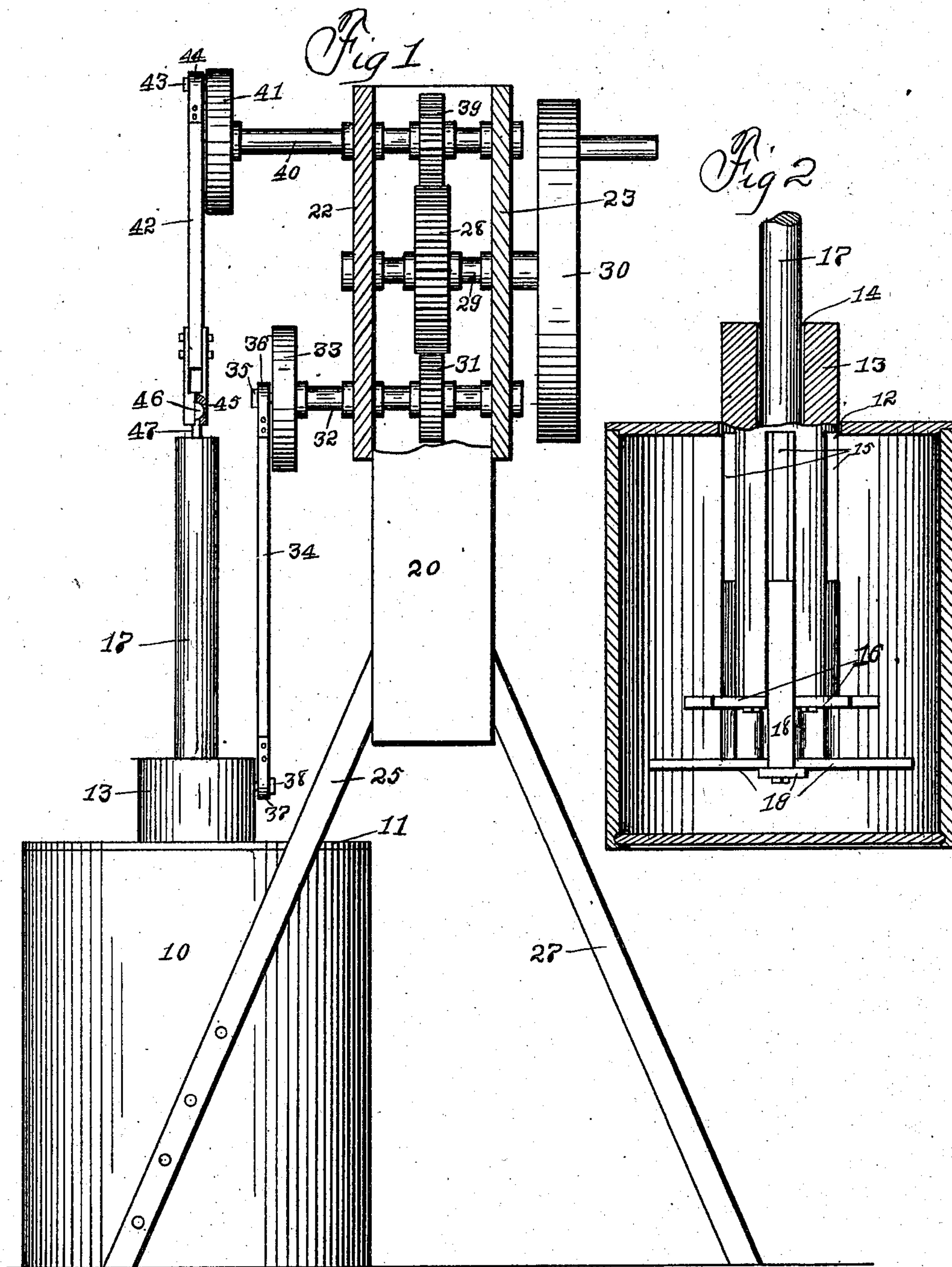
No. 724,225.

PATENTED MAR. 31, 1903.

A. J. WILLIAMS.
DOUBLE DASHER CHURN.
APPLICATION FILED AUG. 4, 1902.

NO MODEL.

3 SHEETS—SHEET 1.



Witnesses
J. C. Roe

Inventor Andrew J. Williams
By Jell & Roe atty

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Fig 3

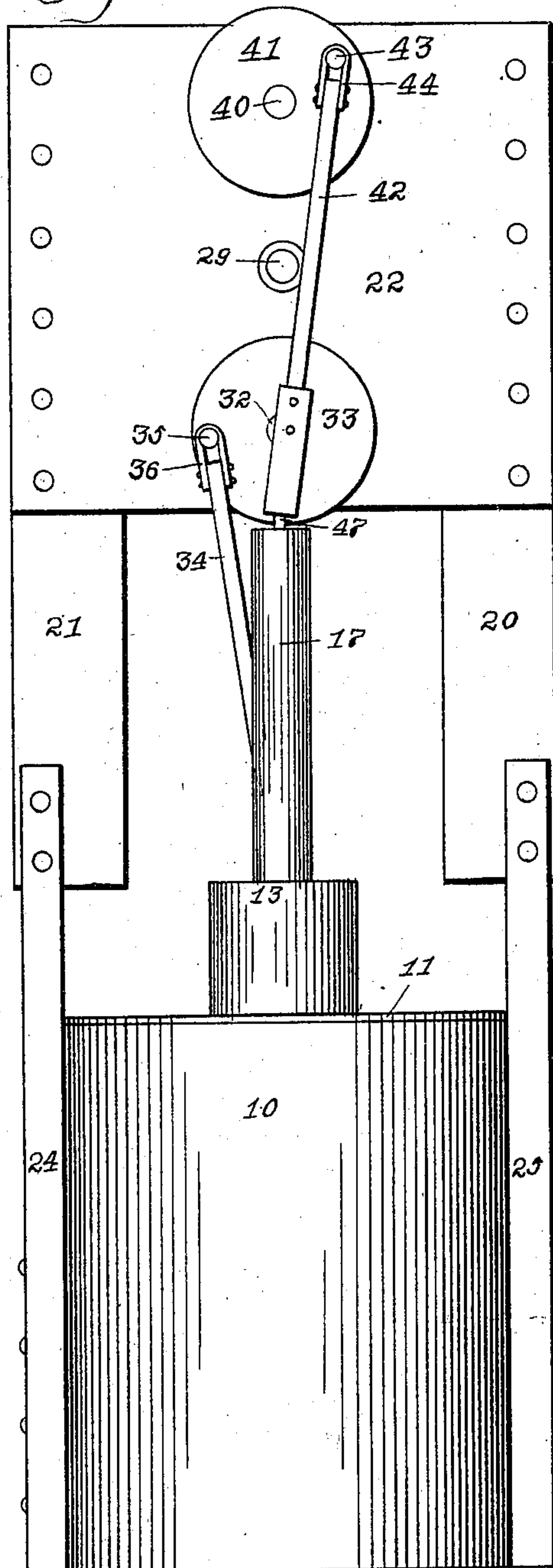
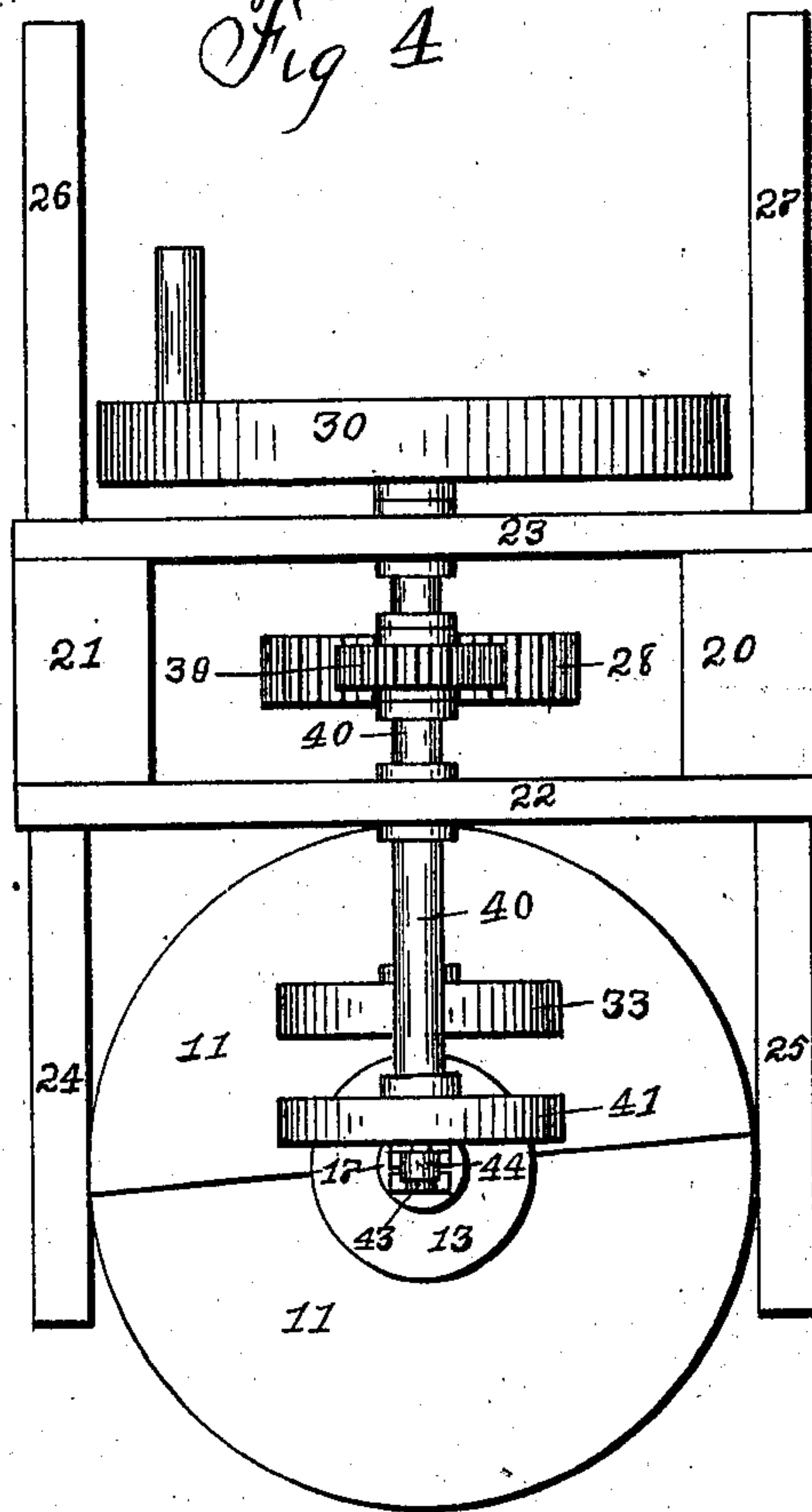


Fig 4



Witnesses
J. C. Roe
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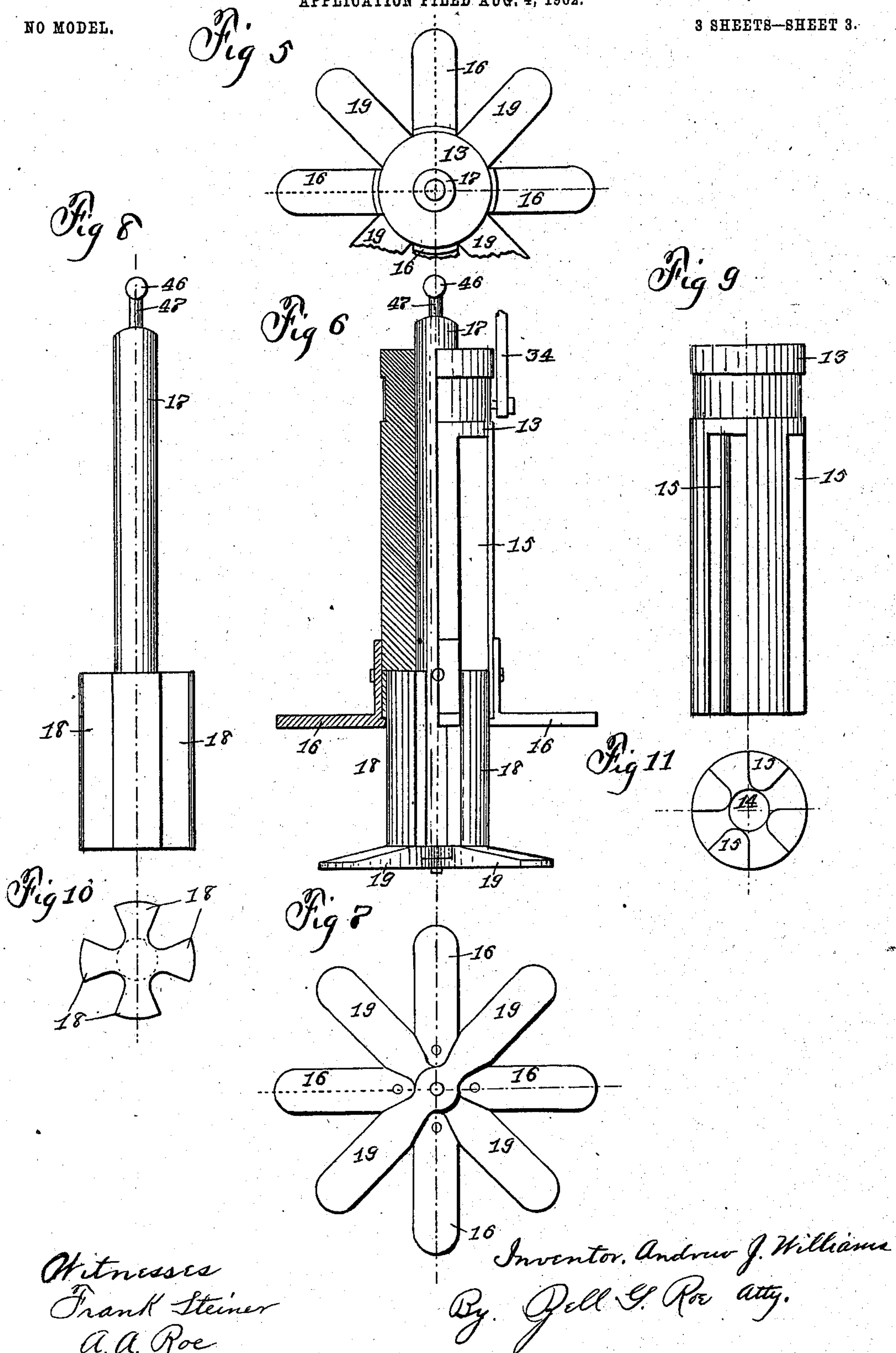
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3 SHEETS—SHEET 3.



UNITED STATES PATENT-OFFICE.

ANDREW J. WILLIAMS, OF PIONEER, IOWA, ASSIGNOR OF ONE-HALF TO
JOHN H. KARNES, OF PIONEER, IOWA.

DOUBLE-DASHER CHURN.

SPECIFICATION forming part of Letters Patent No. 724,225, dated March 31, 1903.

Application filed August 4, 1902. Serial No. 118,263. (No model.)

To all whom it may concern:

Be it known that I, ANDREW J. WILLIAMS, a citizen of the United States, residing at Pioneer, in the county of Humboldt and State of Iowa, have invented a new and useful Improvement in Double-Dasher Churns, of which the following is a specification.

The object of my invention is to provide a double-dasher churn of simple, strong, durable, and inexpensive construction, capable of being operated by machinery or by hand, which will greatly reduce the time and expenditure of power in producing the butter.

My invention consists of certain details of construction hereinafter set forth, pointed out in my claim, and illustrated in the accompanying drawings, in which—

Figure 1 shows a side elevation of my improved churn and frame, the upper portion of the frame being shown in section. Fig. 2 shows a detail view of the dashers in position within the churn, the churn being shown in section. Fig. 3 shows a side elevation of my improved churn and frame, and Fig. 4 shows a plan view of the same. Fig. 5 shows a plan view of the dashers. Fig. 6 shows a side elevation of the dashers, a portion of the outer dasher being in section. Fig. 7 shows an inverted plan of the dashers. Fig. 8 shows a side elevation of the inner dasher, and Fig. 9 shows a side elevation of the outer dasher. Figs. 10 and 11 show inverted plan views of the inner and outer dashers, respectively.

Referring to the accompanying drawings, the reference-numeral 10 is used to indicate a churn, the numeral 11 the top, and the numeral 12 a circular hole in the center of the top, designed for the dashers to pass through.

The numeral 13 indicates a tube, forming the outer dasher of my improved churn, having a circular channel 14 extending its entire length through the center and having slots 15 extending upwardly from its base to a point near its top, said slots being evenly spaced and arranged and extending from the outer to the inner surface of the tube 13.

The numeral 16 indicates arms attached to and extending at right angles from the base of the tube 13, said arms being evenly spaced

and arranged and designed to alternate with the slots 15.

The numeral 17 indicates a shaft forming the inner dasher of my churn, extending from a point above the tube 13 through the channel 14, said shaft being designed to move upward and downward in said channel.

The numeral 18 indicates guides attached to the surface and extending upwardly from the base of the shaft 17 to a distance not so great as the length of the slots 15, said guides being designed to fit loosely within the said slots 15 and designed to prevent any lateral movement of the shaft 17. Attached to the base of and extending at right angles from the base of the guides 18 are arms 19.

The numerals 20 and 21 indicate the upright beams of the frame, in which I have placed the gearing I employ to operate the dashers, connected on each sides at their upper ends by cross-boards 22 and 23 and supported by legs 24, 25, 26, and 27. The churn 10 is designed to rest between and is secured to the two legs 24 and 25. In the center of the space thus formed between the upright beams 20 and 21 and the cross-boards 22 and 23 is a gear-wheel 28, mounted on a shaft 29, having its bearings in the cross-boards 22 and 23. Mounted on the rear end of the shaft 29 and on the exterior side of the cross-board 23 is a combination belt-wheel and hand-wheel 30.

The numeral 31 indicates a gear-wheel immediately below and designed to mesh with the gear-wheel 28, mounted upon a shaft 32, having its bearings in the cross-boards 22 and 23, said shaft having affixed to its forward end a wheel 33.

The numeral 34 indicates a downwardly-extending rod attached to a bolt 35 (affixed at right angles to the forward face and near the perimeter of the wheel 33) by means of a metal strap 36, affixed to the upper end of said rod and passing over said bolt. The other end of the rod 34 is also provided with a metal strap 37, designed to encircle the bolt 38, affixed at right angles in the face of the tube 13, thus connecting the wheel 33 to the tube 13. The shaft 32 is designed to project to such a distance from the cross-board 22 as will allow the rod 34 to extend downwardly in

a straight plane from the forward face of the wheel 33 to its connection with the tube 13.

The numeral 39 indicates a gear-wheel similar to the gear-wheel 31, situated immediately above and designed to mesh with the gear-wheel 28, mounted upon a shaft 40, having its bearings in the cross-boards 22 and 23, said shaft having affixed to its forward end a wheel 41.

The numeral 42 indicates a downwardly-extending rod attached to a bolt 43 (affixed at right angles to the forward face and near the perimeter of the wheel 41) by means of a metal strap 44, affixed to the upper end of said rod and passing over said bolt.

The numeral 45 indicates a socket in the other end of the rod 42, designed to engage a ball 46, mounted on a shaft 47 in the center of the top surface of the shaft 17. The shaft 40 is designed to project to such a distance from the cross-boards 22 as will allow the rod 42 to extend downwardly in a straight plane from the forward face of the wheel 41 to its connection with the shaft 17.

I have arranged the gear-wheels so that when the gear-wheel 31, operating the outer dasher 13, causes said dasher to be moving upward the gear-wheel 39, operating the inner dasher 17, will cause the said dasher to be moving downward, thus having the two dashers moving in opposite directions at all times. Thus it is obvious that when power is applied to the belt or hand wheel 30 it will cause the gear-wheel 28 to revolve, thus setting in motion the gear-wheels 31 and 39 and the shafts 32 and 40, which in turn cause the wheels 33 and 41 to operate. As the rods 39 and 42 are loosely attached at one end to the wheels 33 and 41, it will cause the said shafts to be lowered and raised as the wheels revolve, and as the other ends of said rods are attached one to each of the dashers 13 and 17 it will cause said dashers to be raised and lowered as the said wheels revolve, and as I have arranged my gearing so that one of the rods is raised

at the time the other is lowered it may easily be seen that this action on the milk within the churn will produce the butter in less time and with less expenditure of power than is ordinarily required.

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

In a double-dasher churn the combination of an outer dasher comprising a tube 13, containing a centrally-located circular channel 14 extending through its entire length, longitudinal slots 15 evenly spaced and arranged extending upwardly from the base of the tube 13 to a point near its top, arm 16 affixed to, and extending at right angles from, the base of the tube 13, said arms being evenly spaced and arranged alternately with the slots 15, an upwardly-extending rod 34 loosely attached to the upper end of the tube 13 its other end being loosely attached to the forward face and near the perimeter of a wheel 33, mounted on a shaft 32 operated by gear-wheels 28 and 31; an inner dasher comprising a shaft 17, designed to operate within the channel 14 in the tube 13, provided with guides 18 attached to its surface and extending longitudinally upward from its base for a distance not so great as the length of the slots 15 in the tube 13, said guides being evenly spaced and arranged and designed to operate within the said slots 15, arms 19 attached to, and extending at right angles from the base of the guides 18, an upwardly-extending rod 42 loosely attached to the upper end of the shaft 17, its other end being loosely attached to the forward face and near the perimeter of a wheel 41, mounted on a shaft 40 operated by gear-wheels 28 and 39 all arranged and combined for the purposes stated.

ANDREW J. WILLIAMS.

Witnesses:

T. A. GREINER,
H. M. GREINER.