(No Model.) 2 Sheets—Sheet 1.

J. INGELLS.

CHURN.

No. 422,019. Patented Feb. 25, 1890.

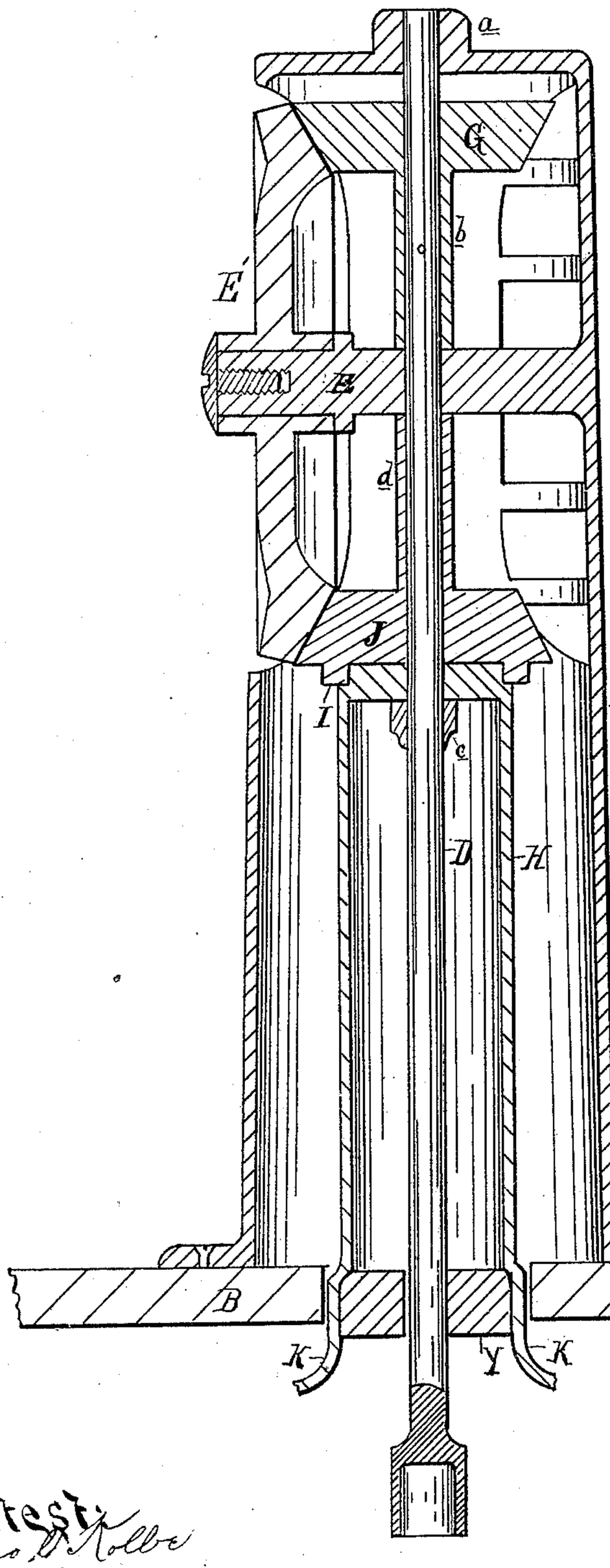

Fig. 1

Witnesses:
Geo. D. Kolbe
O. L. Baker

Inventor.
James Ingells
By N. S. Sprague
Atty

(No Model.) 2 Sheets—Sheet 2.

J. INGELLS.

CHURN.

No. 422,019. Patented Feb. 25, 1890.

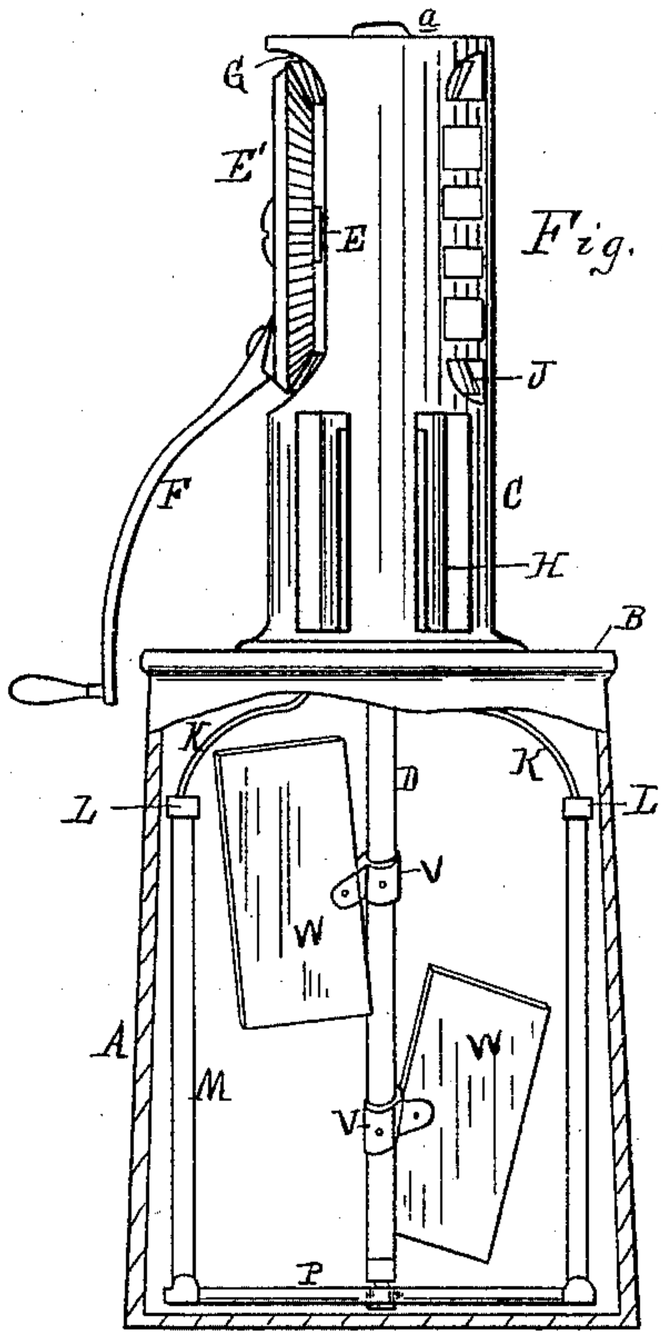

Fig. 2.

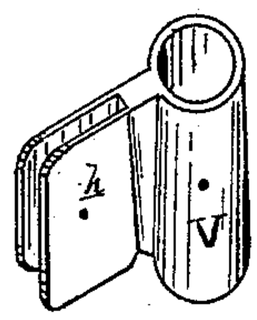

Fig. 3

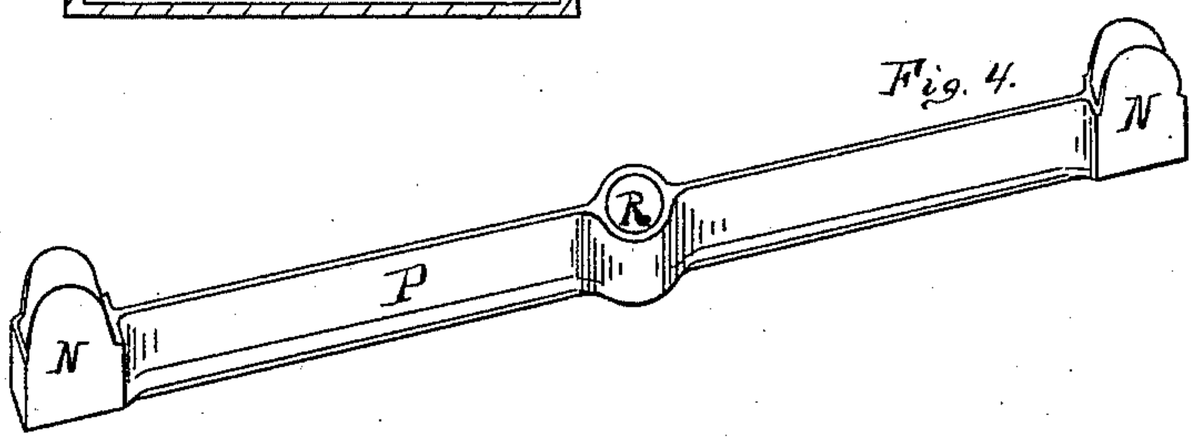

Fig. 4.

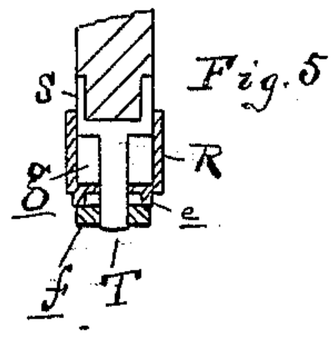

Fig. 5

Attest:
J. F. Stephan
J. W. Dawson

Inventor:
James Ingells
By N. S. Sprague
Atty.

UNITED STATES PATENT OFFICE.

JAMES INGELLS, OF ALBA, MICHIGAN.

CHURN.

SPECIFICATION forming part of Letters Patent No. 422,019, dated February 25, 1890.

Application filed March 25, 1889. Serial No. 304,758. (No model.)

To all whom it may concern:

Be it known that I, JAMES INGELLS, a citizen of the United States, residing at Alba, in the county of Antrim and State of Michigan, have invented certain new and useful Improvements in Churns, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to certain new and useful improvements on churns, and is especially designed as an improvement upon the Letters Patent granted to me on July 10, 1888, No. 385,714.

The invention consists in the peculiar construction of the parts for partially inclosing and supporting the operating mechanism; in the means employed for connecting the beaters or paddles; in the peculiar manner of stepping the central shaft; in the means employed for securing the center paddles to the vertical shaft, and in the peculiar construction, arrangement, and combinations of the various parts, all as more fully hereinafter set forth.

Figure 1 is an enlarged vertical section through the head and operating mechanism. Fig. 2 is a sectional side elevation. Fig. 3 is a perspective of one of the paddle-brackets removed. Fig. 4 is a perspective view of the bar for connecting the outer paddles together at their lower ends. Fig. 5 is a vertical section showing the manner of stepping and securing the center shaft in the horizontal connecting-bar.

In the accompanying drawings, which form a part of this specification, A represents a suitable churn-body, which is provided with a removable top or head B. Upon this head B, I rigidly secure the cylindrically-shaped standard C, the upper end of which is closed, and is preferably provided with a boss *a* to receive the upper end of the central shaft D. Transversely through the center of the standard C, and formed integrally therewith, is a stub-shaft E, upon which is properly journaled the main driving-gear E′, and which is provided with an operating-handle F. This gear-wheel meshes with the bevel-pinion G, which is provided with a long hub *b*, and is rigidly secured to the upper end of the shaft D by proper key or pin.

H represents a cylindrically-shaped hanger, closed at the upper end, and rests upon a collar *c*, formed on the shaft D. In the upper face of the head of this hanger are formed suitable seats or channels to receive the studs I, projecting downward from the lower face of the bevel-pinion J, and which also meshes with the drive gear-wheel E′, and is provided with a long hub *d*. By this construction and arrangement of the parts it will readily be observed that the bevel-pinions G and J are, upon turning the wheel E′, rotated in opposite directions, and that the operating parts of the mechanism are retained in their relative positions by the employment of a pin, screw, or key, one for securing the gear E′ upon the stub-shaft and one for securing the bevel-pinion G upon the vertical shaft D. By removing these two means of attachment the device can readily be taken apart for cleaning or repairs.

From the lower end of the inner cylinder H, and diametrically opposite each other, project the curved arms K, the lower ends of which terminate in sockets L to receive the upper ends of the vertical beaters M, the lower ends of which latter are received in sockets N upon the ends of the horizontal connecting-bar P. In the longitudinal center of this connecting-bar P is formed a socket R, the lower face of which is provided with the studs *e*. Upon the lower end of the shaft D is secured a socket S, provided with a threaded stud T, and said socket and stud are received into the socket R of the connecting-bar, said stud projecting through said arm and receiving upon its end a nut *f*. If desired, a block of wood *g*, Fig. 5, may be inserted in the socket R for the shoulder of the socket S to rest upon. By the construction and arrangement of the parts last described it will readily be seen that the vertical beaters and cross-bar are connected together and to the central shaft by the employment of one nut, as at *f*.

V represent brackets, which are secured upon the shaft D in any suitable manner, and these brackets are provided with the ears *h*, in pairs, between which the beaters or paddles W are rigidly secured, the said ears being so arranged that the beaters W when in place will stand at an angle to the shaft, as shown in Fig. 2.

Within the lower end of the cylindrical

hanger H, and about upon a line with the cover B, I place a block of wood or other suitable material, so as to fill the space and to prevent the cream from spattering or flying out while the churning is in progress.

What I claim as my invention is—

1. The combination of the cylindrically-shaped standard C, having a stub-shaft E, carrying a bevel crown-wheel E′, with the bevel-pinions G J, provided with the hubs *b d*, respectively, shaft D, provided with collar *c*, cylindrically-shaped hanger H, provided with notches or depressions in its upper end, adapted to engage with lugs or studs I upon the pinion J, substantially as and for the purposes described.

2. In a churn of the character described, the combination of the hanger H, provided with arms K, a central shaft D, brackets V, beaters M and W, and connecting-bar P, the parts being constructed, arranged, and operating substantially in the manner set forth.

In testimony whereof I affix my signature, in presence of two witnesses, this 12th day of February, 1889.

JAMES INGELLS.

Witnesses:
H. S. SPRAGUE,
HARRY L. VAIL.