

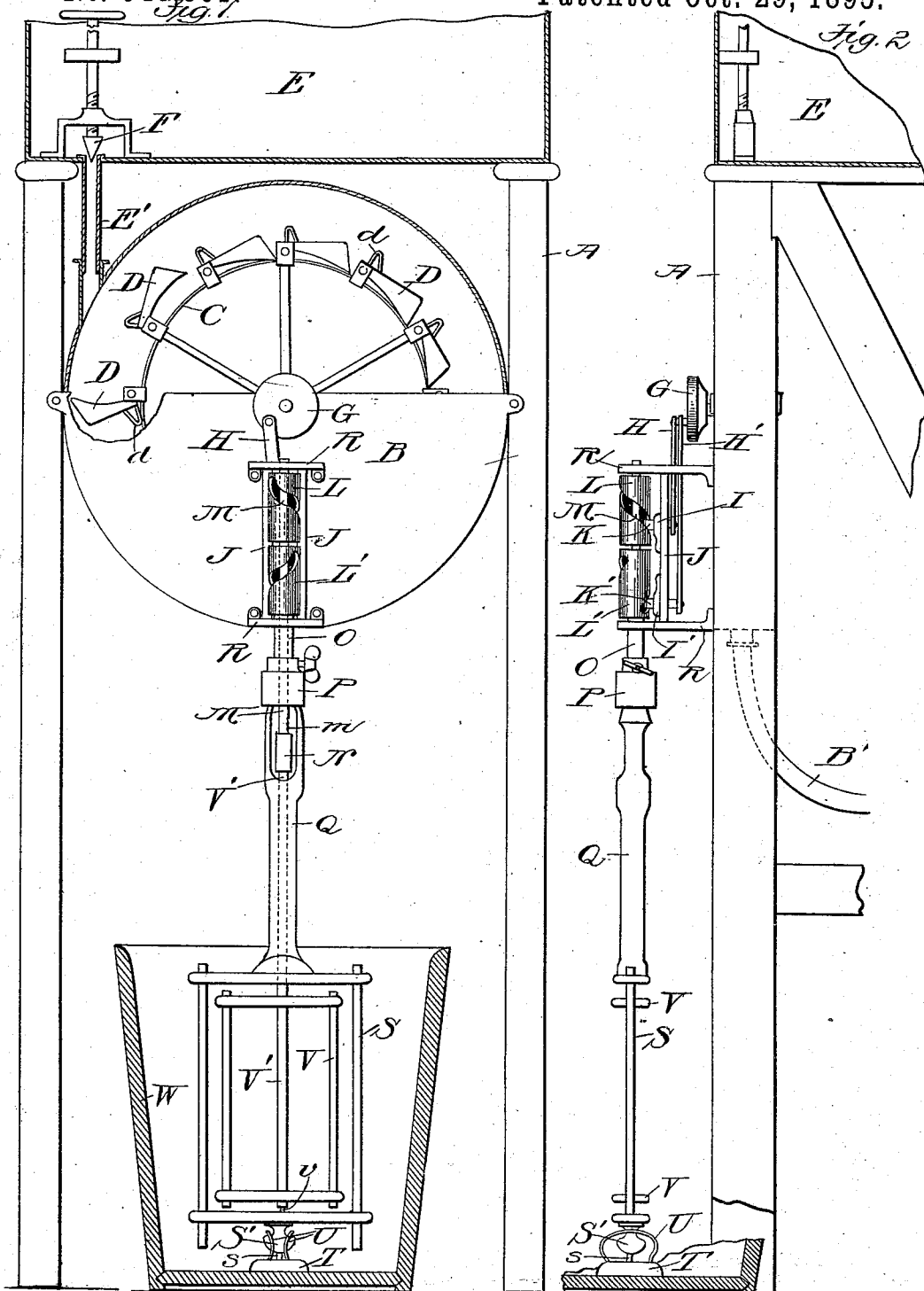
(No Model.)

2 Sheets—Sheet 1.

J. D. BARTER.
CHURN DASHER OPERATING MECHANISM.

No. 548,861.

Patented Oct. 29, 1895.



Witnesses:

F. R. Cornwall
Hugh H. Wagner

Inventor
John D. Barter,
by Paul R. Cornwall, *attorney*

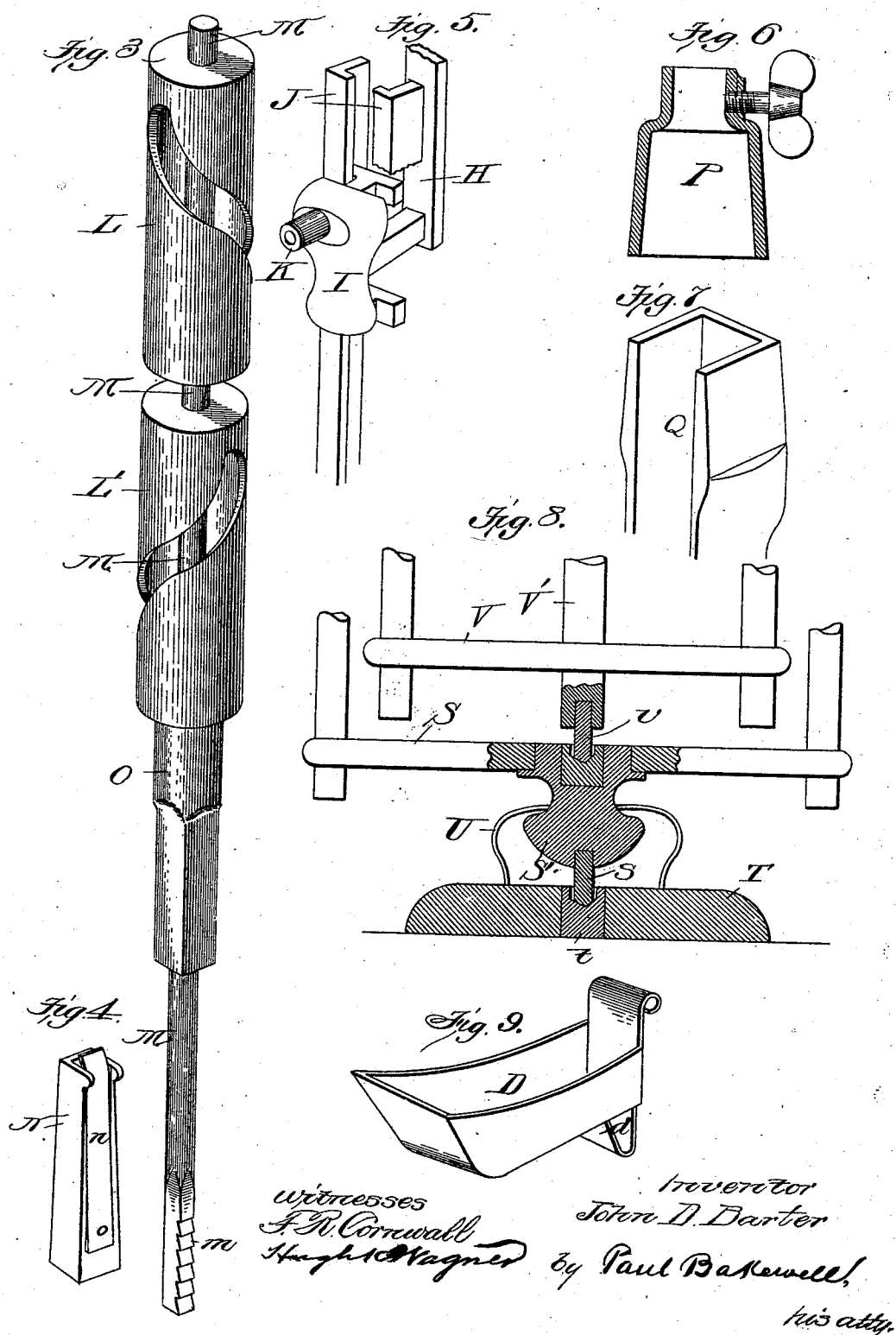
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UNITED STATES PATENT OFFICE.

JOHN D. BARTER, OF ST. LOUIS, MISSOURI, ASSIGNOR OF TWO-THIRDS TO S. HICKS AND J. W. GIVENS, OF PROVIDENCE, KENTUCKY.

CHURN-DASHER-OPERATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 548,861, dated October 29, 1895.

Application filed December 24, 1894. Serial No. 532,870. (No model.)

To all whom it may concern:

Be it known that I, JOHN D. BARTER, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Churn-Dasher-Operating Mechanism, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification,

wherein—

Figure 1 is a front elevational view. Fig. 2 is a side elevational view. Fig. 3 is a detail view of the right and left hand slotted drums. Fig. 4 is a detail of the clip for securing the smaller dasher to the rod. Fig. 5 is a detail of one of the pitmen cross-heads with roller for operating the slotted drums. Fig. 6 is a detail of the clip for securing the larger dasher to the drum-sleeve. Fig. 7 is a detail of the upper end of the sleeve of the larger dasher. Fig. 8 is a detail sectional view of the dasher-bearings, and Fig. 9 is a detail of one of the buckets.

This invention relates to a new and useful improvement in mechanism for operating churn-dashers; and it consists, generally stated, in combining with a suitable motive power reciprocating pitmen, which co-operate with oppositely-inclined slotted drums, to which are attached the churn-dashers; also, in the bearings for the several dashers. Other minor features reside in the peculiar construction, arrangement, and combination of the several parts comprising my invention, all as will hereinafter be described, and afterward pointed out in the claims.

In the drawings, A indicates a suitable frame, which supports the operating parts on my device. Mounted in frame A is a circular casting B, which incloses a water-wheel, forming the motive power for the dashers. This water-wheel comprises a hub portion, from which radiate spokes, supporting a rim C, upon which are mounted bearings for the buckets D, which are pivoted therein. These buckets are preferably of that class known as "drop-buckets," and are provided with projections *d*, which retain them in a radial operative position when they drop by gravity from their folded position beneath the water-spout, as shown in Fig. 1.

E is a tank for the motive fluid, supported on the frame A, and E' is a connection therebetween and the casing B, the passage of the fluid to the water-wheel being controlled by a needle-valve F.

B' is a pipe leading from the bottom of casing B to conduct off the used water.

On the shaft of the water-wheel is a crank-disk G, upon the wrist-pin of which are mounted two pitmen H and H', each connected to a cross-head I and I', respectively, moving in vertical guides J, supported by brackets extending from the casing B. Rollers K and K' are mounted upon the cross-heads and are received in oppositely-inclined slots in drums L and L'.

M is a rod upon which the drum L is fixedly mounted, said rod also being the axis for the drum L', the lower end of the rod being formed angular in cross-section and provided with teeth *m*. On this angular portion is received a coupling-clip N, which is open at both ends and provided with a spring *n*, which engages the teeth *m* and retains the clip in a lowered position when it is in engagement with the end of the rod V' of the smaller dasher. The drum L' is provided with a sleeved portion O, which encircles the rod M, said sleeve being squared at its lower end to receive a coupling-clip P, which is secured thereto by a winged nut.

The upper end of the sleeve Q of the larger dasher is received into this coupling, said sleeve being open at one side at its top for the passage of the rod M and its clip N.

The bracket-pieces R, in which the rod M is mounted, permit a slight vertical play of the drums L and L', so that when the parts are assembled—that is, the dashers attached—the drums will be elevated, L the greater distance, so as to leave a space between them and the bracket-pieces to reduce as much as possible friction between the parts. One of the objects in providing two pitmen H and H' for the cross-heads is to allow for this elevation of the drums.

S indicates one of the dashers, which I have termed the "larger dasher," because it has a greater scope than its companion and surrounds the same in its travel. Extending from dasher S is a sleeve Q, already referred

to. The bearing for this dasher consists of a block T, provided with a center cup *t*, which receives a stud *s*, extending from a knob *S'* on the dasher. To retain this relation between the parts, I provide the block T with wires or loops U, which arch over the knob and prevent displacement thereof.

V indicates what I have termed the "smaller dasher," which has a bearing through a stud *v* in the lower cross-arm of the larger dasher. Rod V' extends from this dasher up through sleeve Q, and is connected to rod M by coupling N.

W indicates a vessel in which the dashers operate.

The operation is as follows: Tank E being filled with water and valve F opened, the water, passing through pipe E', will strike the buckets D and revolve the wheel. This will transmit motion to the crank-disk, which, through the medium of the pitman, will reciprocate the cross-heads I and I', causing rollers K and K' to travel in the oppositely-inclined slots in the drums L and L', revolving them in opposite directions, likewise the dashers V and S, to which they are respectively connected. It will thus be seen that when the cross-heads descend dasher V revolves to the left, while dasher S revolves to the right, and when the cross-heads ascend dasher V revolves in an opposite direction to the right, while dasher S also reverses its direction and revolves to the left.

Although I have illustrated a particular form of motor, I do not wish to be understood as excluding others, as it will be readily understood that the water-wheel could be replaced by a crank or pulley and the power imparted to the crank-disk by manual or other power; also, in the change of motive power other forms of supporting-framework could be substituted for that shown and described.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my device can be made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

1. The combination with a frame, of a casing mounted thereon, a water-wheel mounted in the casing, a crank-disk mounted on the shaft of the water-wheel, cross-heads which are reciprocated from said crank-disk, rollers on the cross-heads, drums which are provided with oppositely inclined slots for receiving the rollers, a sleeve on one of the drums, a

dasher attached to said sleeve, a rod on the other drum and within said sleeve, and a dasher attached to said rod; said dashers in operation being rotated in opposite directions simultaneously, and the direction of each being reversed, substantially as described.

2. The combination with a crank-disk, of cross-heads which are reciprocated therefrom, rollers on the cross-heads, drums which are provided with oppositely inclined slots for receiving the rollers, a sleeve on one of the drums to which is attached a dasher, and a rod on the other drum and within said sleeve to which is attached a dasher, substantially as described.

3. The combination with a crank-disk having a single crank-pin, of two pitmen, one of which is of a given length and the other of a greater length and both connected at their upper ends to the said crank-pin, two cross-heads arranged one above the other in vertical alignment, the lower end of the shorter pitman being connected to the uppermost cross-head and the lower end of the longer pitman being connected to the lowermost cross-head, rollers on said cross-heads, two drums provided with oppositely-inclined slots and located in vertical alignment one above the other and mounted to rotate independently in opposite directions, means for imparting movement to said crank-disk, and two independent dashers which are connected to the said drums, substantially as herein specified.

4. The combination with drums L and L' provided with oppositely inclined slots, of rollers operating in said slots to revolve the drums, said rollers having a reciprocating movement, means for operating said rollers, a rod M fixedly attached to drum L, forming an axis for drum L', and a sleeve on drum L' which surrounds said rod, substantially as described.

5. The combination with the rod M formed with teeth on its end, of the churn rod V' adapted to have its lower end seated in a socket, and a coupling between the two, comprising an open ended angular sleeve which is provided with a spring for engagement with the teeth on the rod M, for holding the coupling in position, substantially as described.

In testimony whereof I hereunto affix my signature, in presence of two witnesses, this 17th day of December, 1894.

JOHN D. BARTER.

Witnesses:

F. R. CORNWALL,
HUGH K. WAGNER.