(No Model.) 2 Sheets—Sheet 1.

H. I. CARVER.

BUTTER WORKER.

No. 401,129. Patented Apr. 9, 1889.

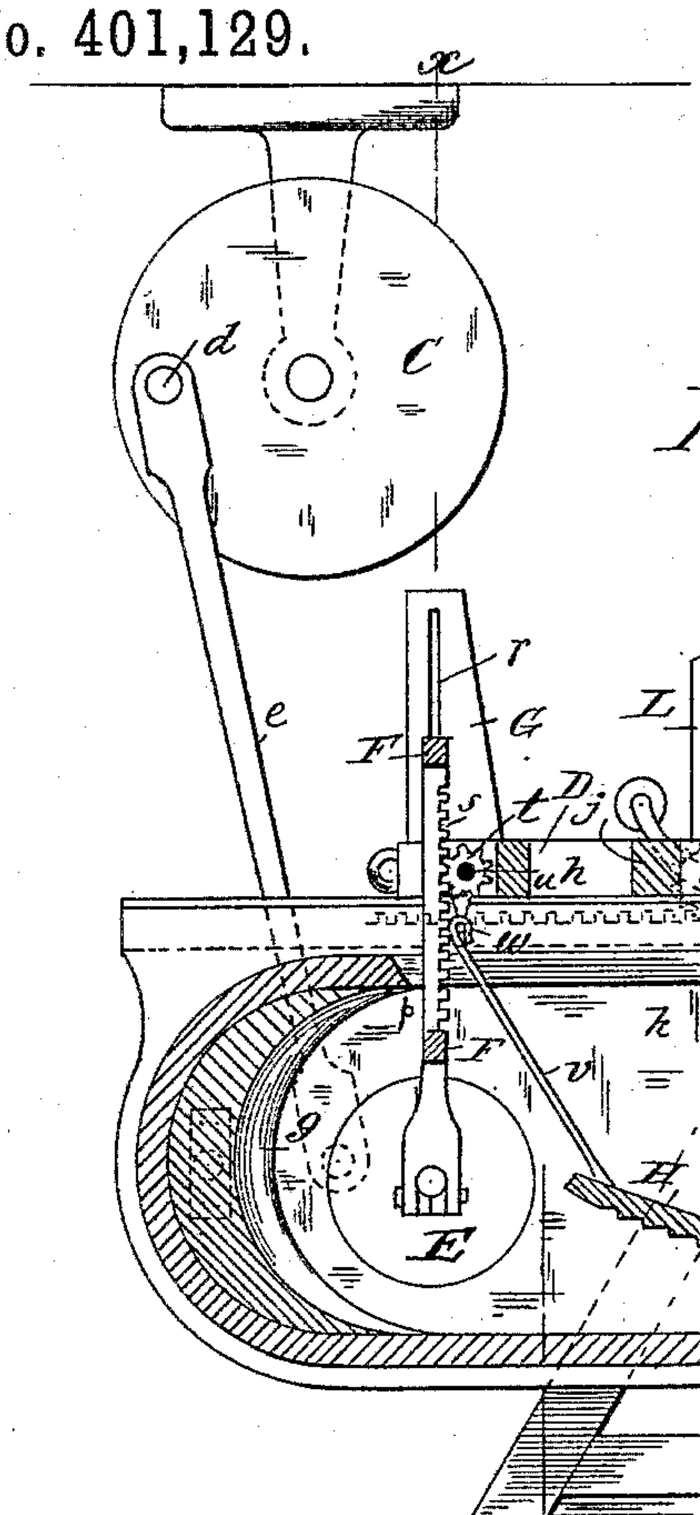

Fig. 1.

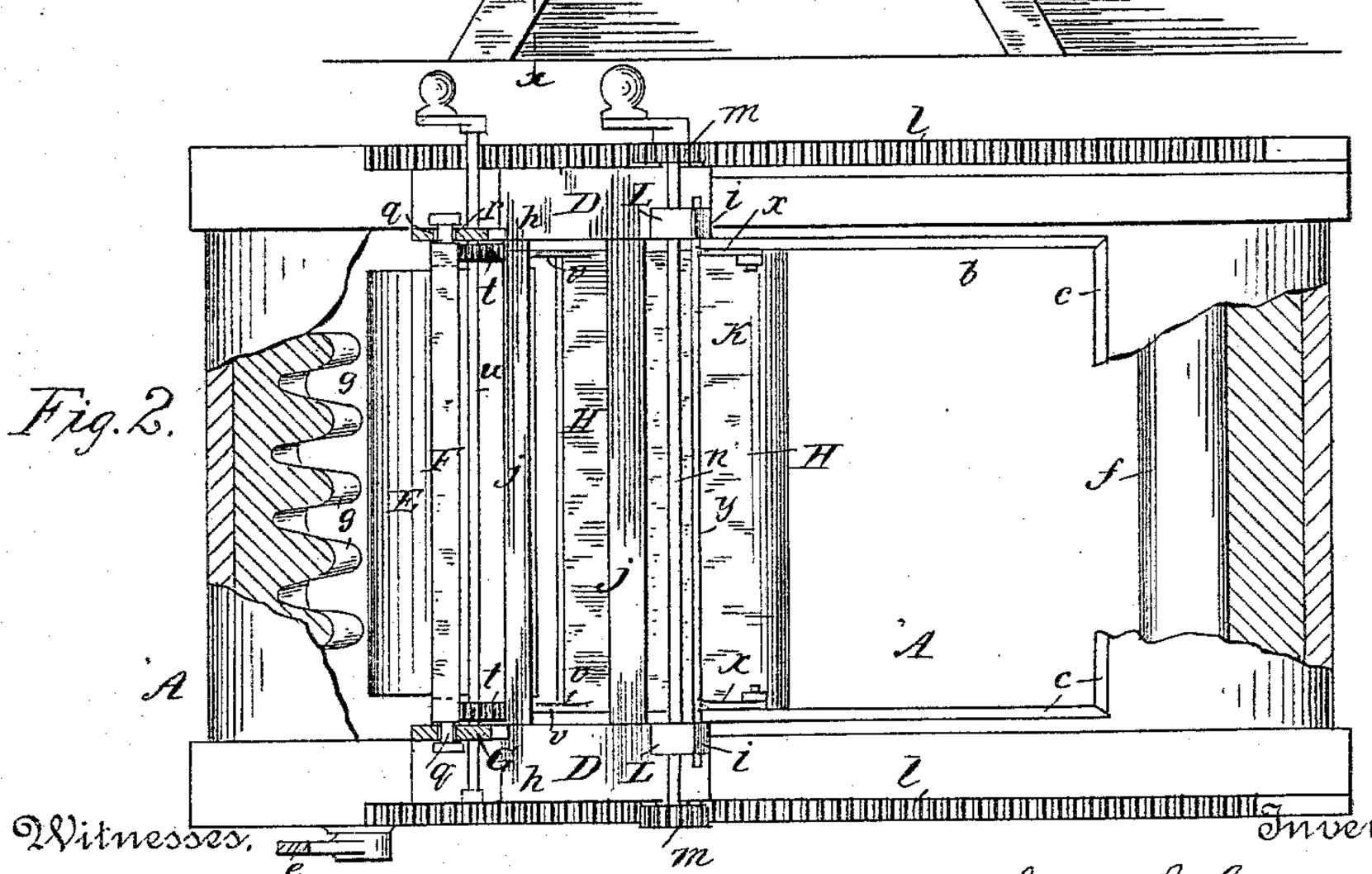

Fig. 2.

Witnesses.

Wm. F. Bellamy

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Inventor,

Henry I. Carver,

By his Attorneys, Chapin & Smith

(No Model.) 2 Sheets—Sheet 2.

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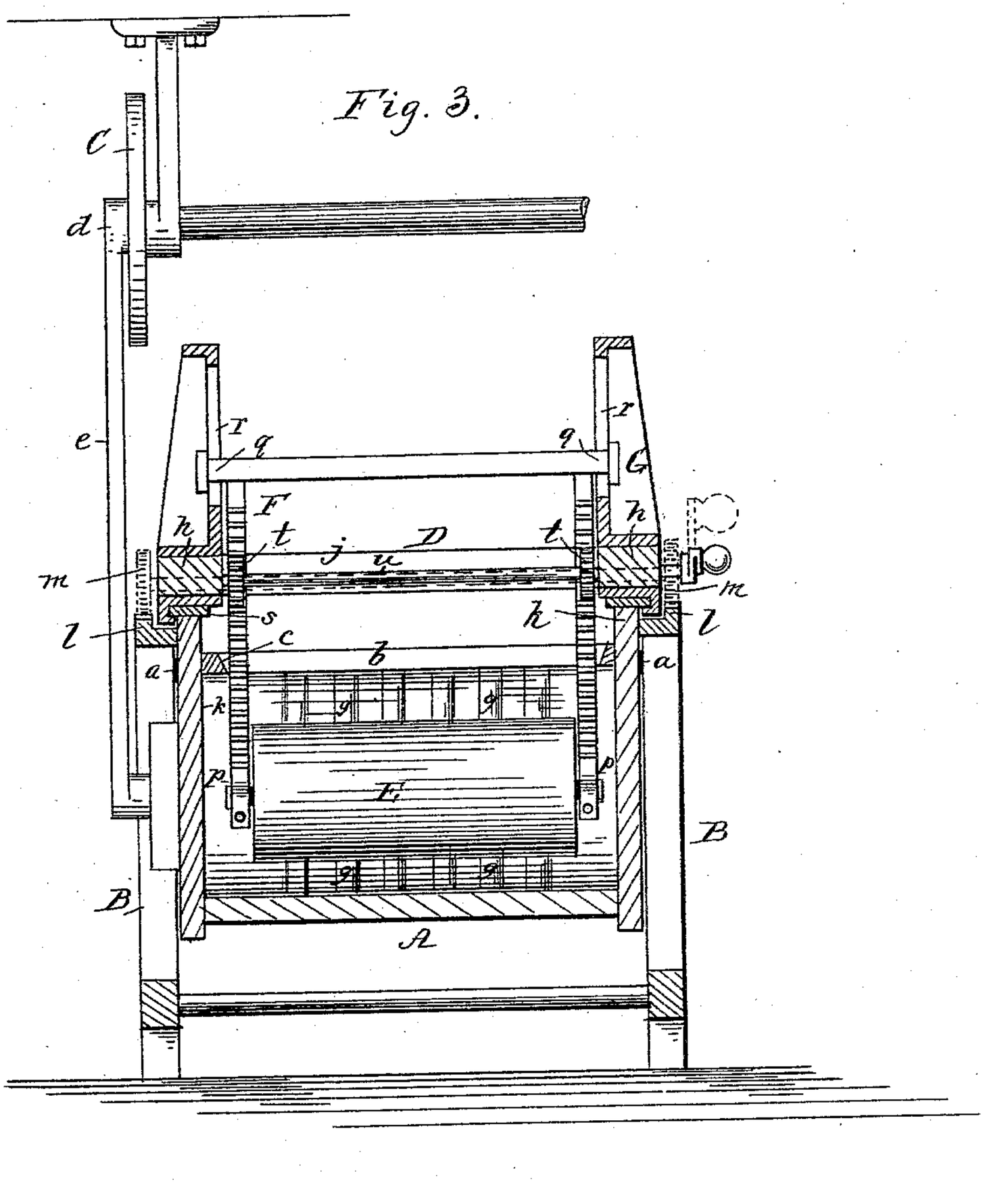
Fig. 3.



Witnesses,
Wm. F. Bellows
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Inventor,
Henry I. Carver,
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UNITED STATES PATENT OFFICE.

HENRY I. CARVER, OF LUDLOW, MASSACHUSETTS.

BUTTER-WORKER.

SPECIFICATION forming part of Letters Patent No. 401,129, dated April 9, 1889.

Application filed February 1, 1888. Serial No. 262,612. (No model.)

To all whom it may concern:

Be it known that I, HENRY I. CARVER, a citizen of the United States, residing at Ludlow, in the county of Hampden and State of Massachusetts, have invented new and useful Improvements in Butter-Workers, of which the following is a specification.

This invention relates to an apparatus capable of use in creameries, particularly in the process of "working" the churned butter; and it consists in the construction and combination of parts, all substantially as will hereinafter more fully appear, and be set forth in the claims.

Reference is to be had to the accompanying drawings, in which a butter-working apparatus constructed in accordance with the present invention is illustrated, and in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 is a central vertical longitudinal section of a portion of the apparatus, and a side elevation of a portion thereof. Fig. 2 is a plan view of same with some parts broken away and in horizontal section; and Fig. 3 is a vertical cross-section of the same on line *x x*, Fig. 1.

The apparatus comprises a body or receptacle, A, of any desired and suitable form and size, provided at its upper central portion with trunnions *a*, by which said receptacle is mounted in bearings of a suitable supporting frame or standard, B, and said receptacle is closed except at its upper side, where an opening, *b*, is formed of an extent nearly as great as said upper side, the edges *c* of which opening are intended to be formed for the reception of a closing-lid to be employed at certain times in the use of the apparatus. The said receptacle is adapted to be oscillated on said bearings, and for this purpose a face-plate, C, on an overhanging shaft is provided, to the eccentric-pin *d* of which one end of a connecting-rod, *e*, is secured, which connecting-rod by its other end engages one side of the body A near its end portion; and the parts above described in themselves constitute a churning apparatus for which a separate application for Letters Patent of the United States was filed by me May 1, 1888, Serial No. 272,473; but such parts are well adapted as and for the supporting and carrying means for the devices to be hereinafter described, and in connection therewith constitute the butter-worker of the present invention, and are therefore herein shown and referred to as above.

In each of the inner and opposite end walls of the receptacle are formed or attached series of inwardly-projecting ribs or extensions *f g*, the ribs, *f*, at the one end preferably extending horizontally, while the ribs, *g*, at the other end extend vertically.

D represents a sliding frame comprising end bars, *h*, which lie along the upper edges of the walls *k* of the body, and cross-braces *j*, and the sides of the body have horizontally-arranged rack-bars *l l*, and the frame is provided with pinions *m m*, meshing into said racks, said pinions being secured on the outer ends of a transverse shaft, *n*, of the sliding frame, which at one end is provided with a crank-handle for securing its easy rotation.

A roller, E, of a length nearly as great as the width of the receptacle, is hung for a free rotation at the lower ends of uprights *p p* of a vertical transverse frame, F, playing by its bearing-extensions *q* through vertical ways *r* of standards G of said sliding frame, and into the teeth of the vertically-racked edges *s* of said uprights *p* pinions *t* mesh, which are carried by a horizontal transverse shaft, *u*, having bearings in said sliding frame, said shaft *u* being provided with a crank-handle for its rotation to raise or lower the roll from or toward the bottom of the receptacle. A transversely-arranged frame, K, comprising hanging arms *v*, hung by their upper ends to pins *w*, carried at and by the side walls of the sliding-frame bars *h*, a board, H, secured at the lower forward end of said arms *v*, and a bail, *x*, secured to the rear end of said board, is disposed at the rear of said roll E, and adapted, by the engagement of the upper cross-bar, *y*, of its said bail with the hooked projections *i* of the standards L of the sliding frame, to support said board H away from the bottom of the receptacle at any desired angle thereto. The lower surface of the said board H is transversely ribbed or serrated, as shown at *z*, Fig. 1.

In the process of working butter by the use of the present apparatus the first step thereof is performed by securing an oscillation of the

receptacle A, containing the churned butter, it being understood that at this time the frame K, the roller E, and its carrying-frame F are raised out of the interior of the receptacle, the opening of the latter at this time being covered, so that by the impact of the mass of butter, first against the series of ribs at one end and then against the series at the other end, the buttermilk is in a large proportion worked out, after which, with the receptacle held horizontally and rigidly by the employment of any suitable confining and steadying means, the lid is removed and the frame F, with the roller E, adjusted in place for being presented at a suitable distance from the lower surface of the receptacle, when on the sliding of the frame D from end to end thereof said butter is rolled into a sheet or thin layer of uniform thickness; then with the said sliding frame, say, at the right-hand end of the vessel, and lowering the frame K into place, with the ribbed board H inclined in the manner shown in Fig. 1, and such position thereof maintained on the forward travel of the sliding frame carrying with it the said board H, the flattened body of butter is gathered into cylindrical or roll form, lying transversely of the receptacle. On the roller E being then raised, said described roll of butter is to be then turned to extend lengthwise of the receptacle. The flattening of the butter by the roller E, the gathering of the butter into a transversely-disposed roll, and the shifting of such roll longitudinally, as described, are to be continued until the butter has been sufficiently worked.

The arrangement of one series, *f*, of ribs horizontally and of the opposite series, *g*, vertically, as shown and described, is most advantageous, as it insures in the use of the apparatus a most rapid and effective working out of the buttermilk.

What I claim as my invention is—

1. In a butter-working apparatus, the combination, with a receptacle or body, A, provided with intermediately-disposed trunnions *a a*, by which it is hung in bearings of a suitable support, and provided at its opposite inner ends with the horizontally and vertically arranged series of ribs *f f* and *g g*, of a revolving crank-pin, *d*, carried by a suitably-arranged shaft, and a connecting-rod extending between and secured to said crank-pin and one end portion of said receptacle-body, substantially as and for the purpose described.

2. The combination, with a body or receptacle provided with a longitudinally-arranged rack-bar, of a horizontal sliding frame, D, having mounted therein a pinion meshing with said rack, the vertical frame F, vertically movable and guided on and supported by said sliding frame, and a horizontal roller, E, carried by said vertical frame, substantially as and for the purpose described.

3. The combination, with a body or receptacle provided with a longitudinally-arranged rack-bar, of a sliding frame, D, having mounted thereon a pinion, *m*, meshing with said rack-bar and provided with a pinion, *t*, the vertical frame F, supported and guided in said sliding frame D, provided with the rack-teeth *s*, and a horizontal roller, E, carried by said vertical frame F, substantially as and for the purpose described.

4. The combination, with a body or receptacle provided with a longitudinally-arranged rack-bar, of a sliding frame, D, provided with the hooked standard L, and having mounted thereon a pinion, *m*, meshing with said rack-bar, and a frame, K, comprising the transversely ribbed or serrated board H, the supporting-arms *v v*, pivoted to said sliding frame, and the bail *x*, adapted to engage the hooks *i* of said standards, substantially as and for the purpose described.

HENRY I. CARVER.

Witnesses:
WM. S. BELLOWS,
G. M. CHAMBERLAIN.