

(No Model.)

N. E. COFFIN.
CHURN.

No. 322,349.

Patented July 14, 1885.

Fig. 1.

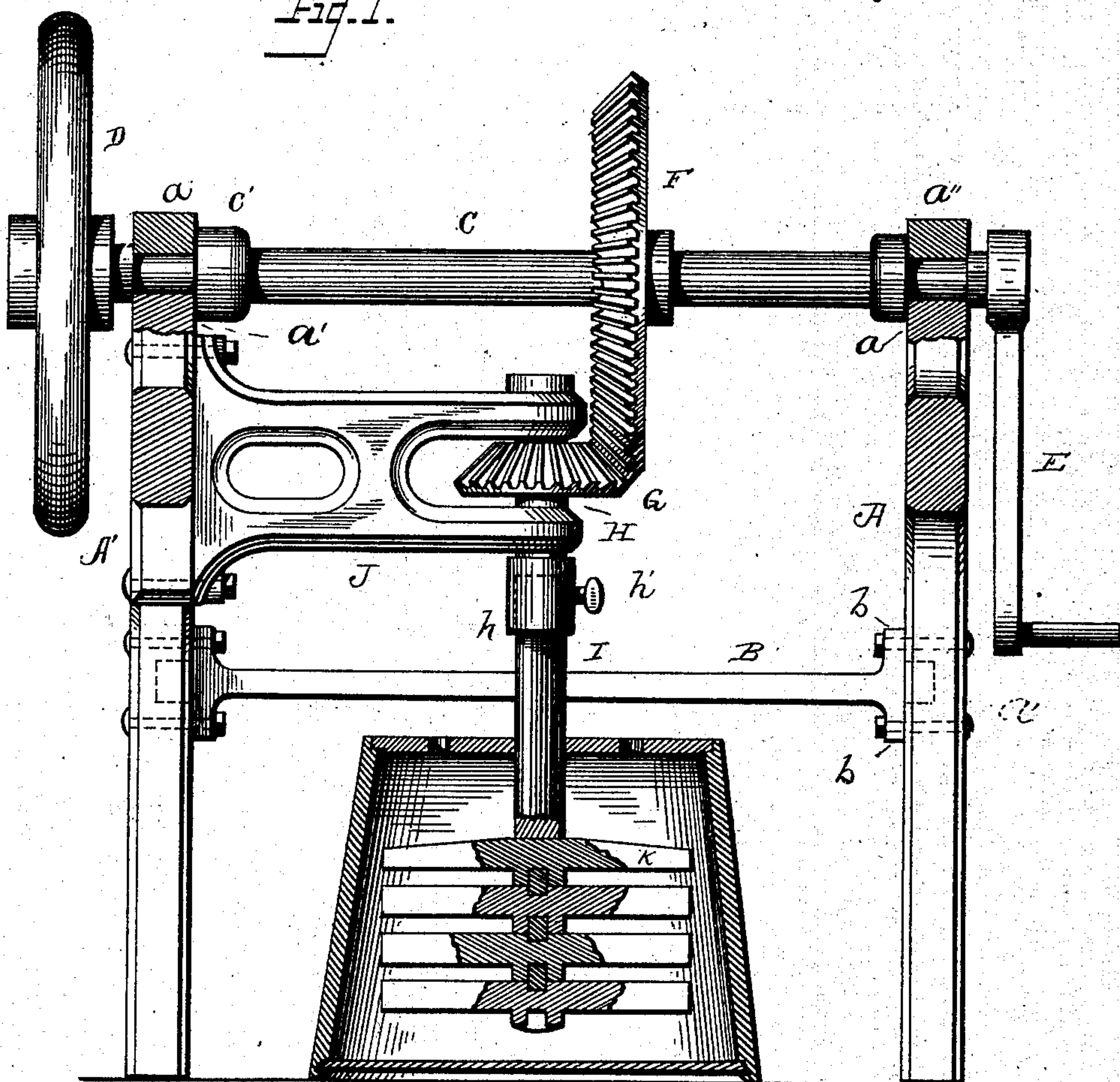
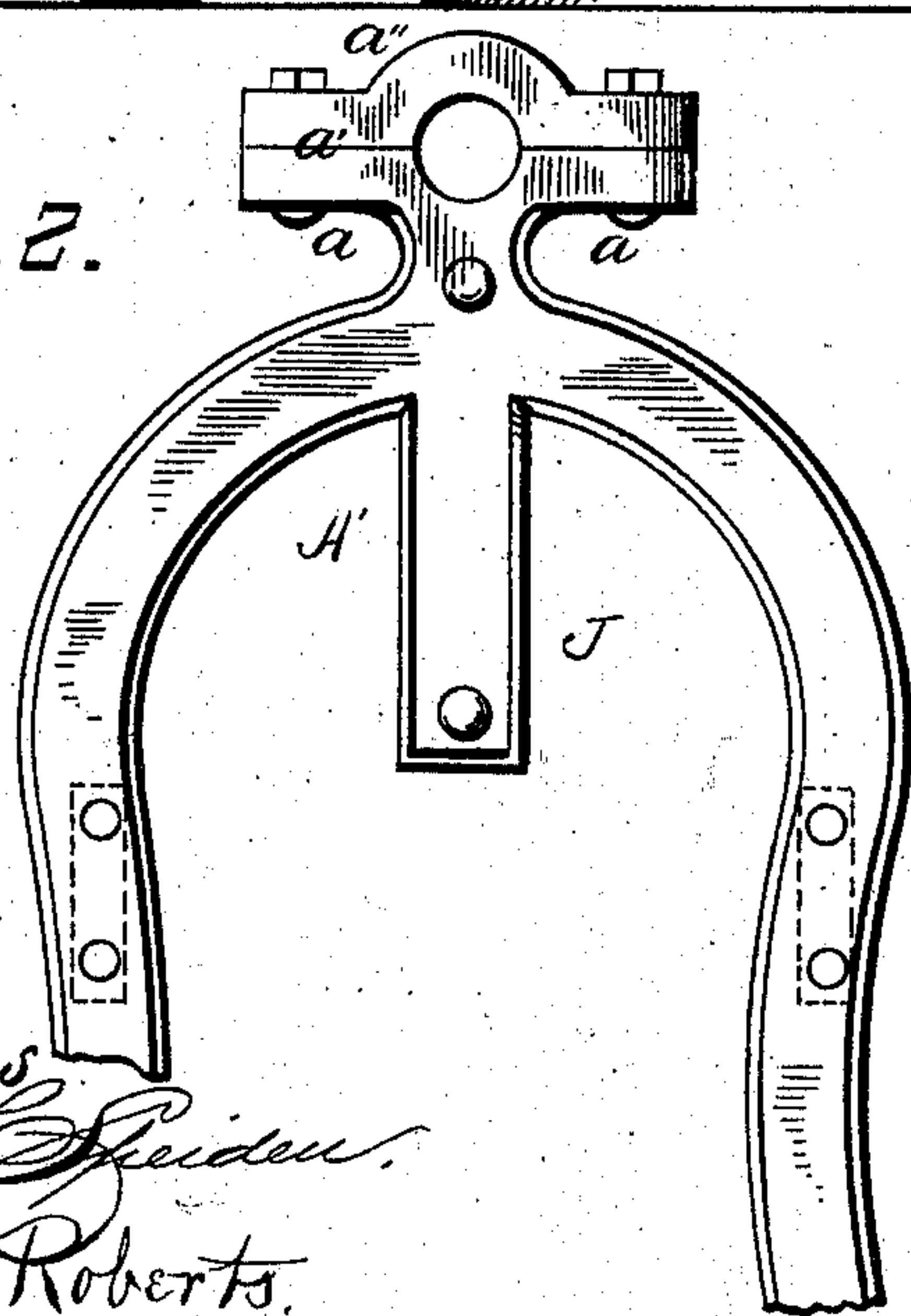


Fig. 2.



Witnesses
John E. Steiden.
Mc. P. Roberts.

Fig. 4.

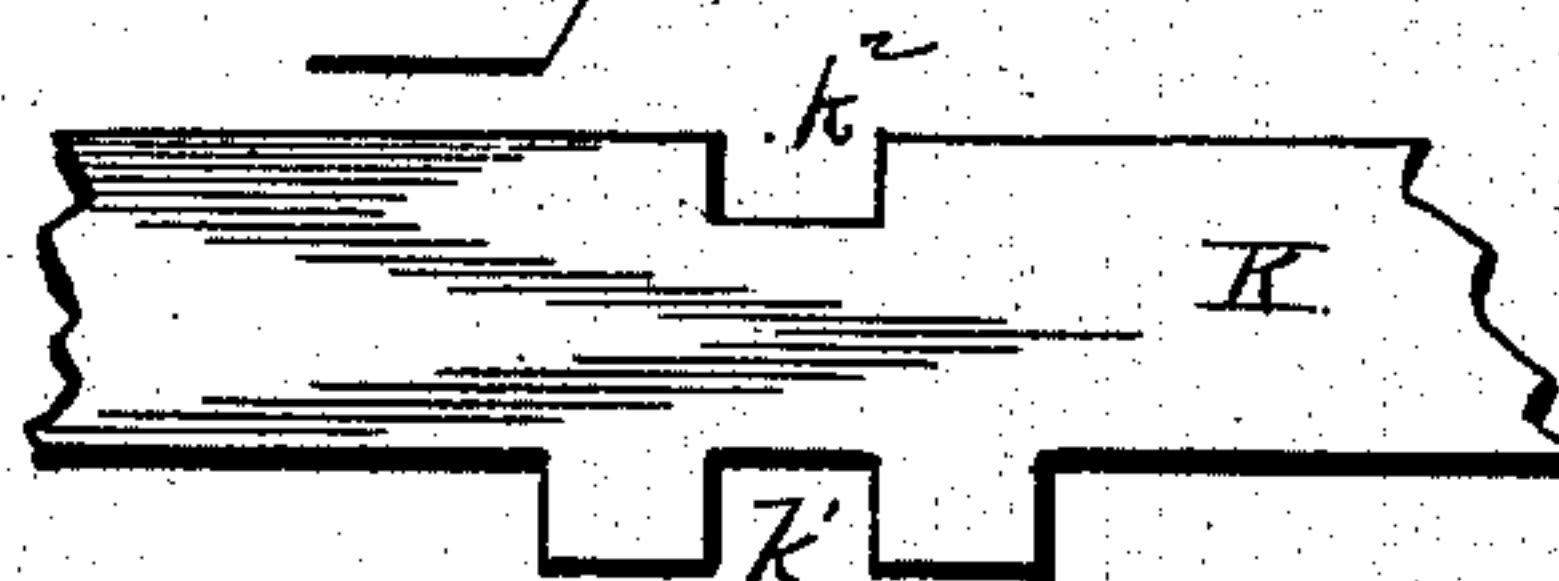
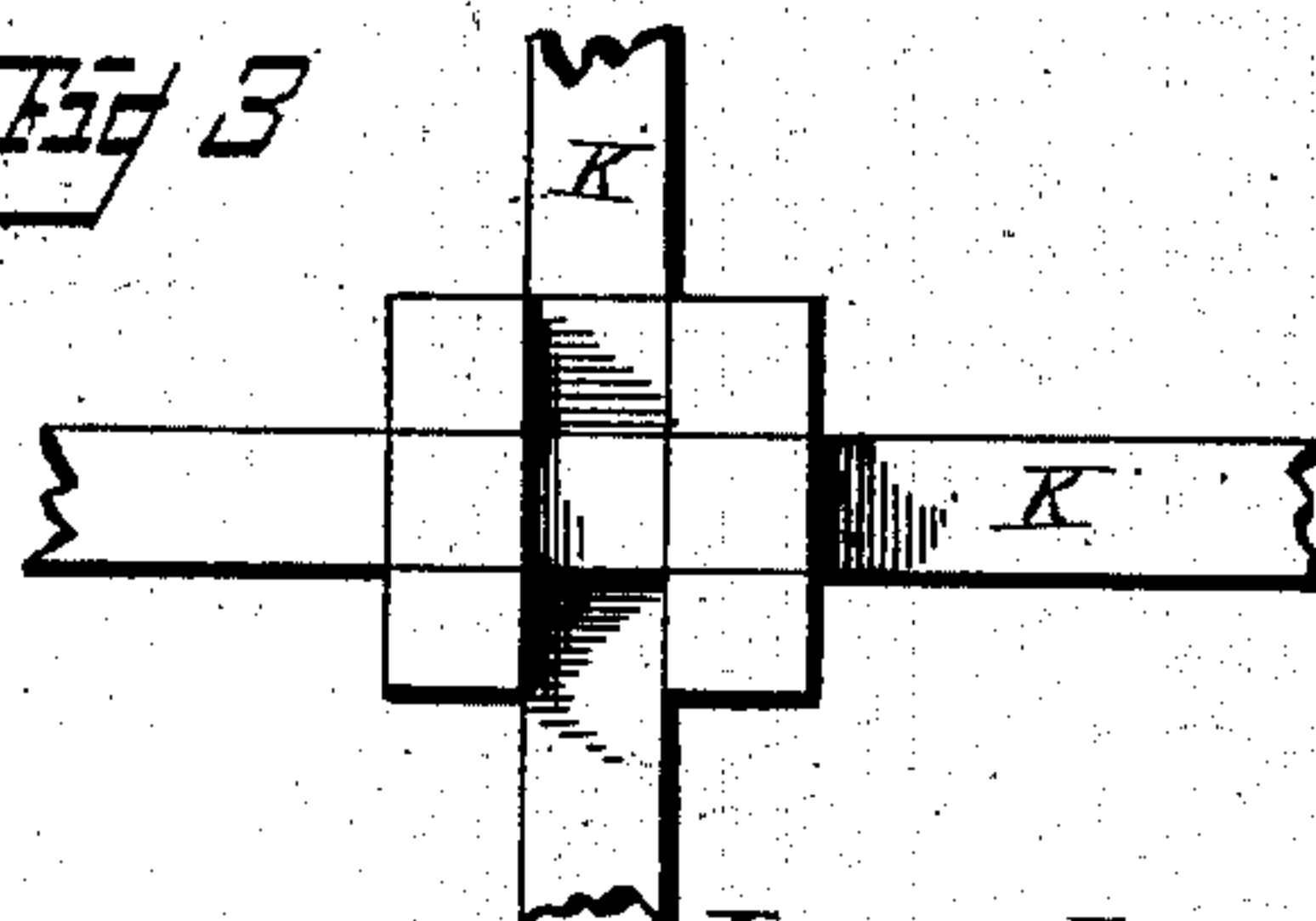


Fig. 3.



Inventor.
Norman E. Coffin.
by *Frank Sheehy.*
Attorney.

UNITED STATES PATENT OFFICE.

NORMAN E. COFFIN, OF ELM HALL, MICHIGAN.

CHURN.

SPECIFICATION forming part of Letters Patent No. 322,349, dated July 14, 1885.

Application filed March 25, 1885. (No model.)

To all whom it may concern:

Be it known that I, NORMAN E. COFFIN, a citizen of the United States, residing at Elm Hall, in the county of Gratiot and State of Michigan, have invented certain new and useful Improvements in Churns; and I do 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

My invention relates to churn-dashers and means for supporting and driving the same, the object being to provide a dasher whereby a thorough agitation of the cream is effected and the butter collected in the minimum amount of time and with comparatively little labor.

A second object of the invention is to produce a simple, cheap, durable, and portable frame, preferably of cast metal, for supporting the dasher and its driving mechanism.

The invention consists in the peculiar construction, arrangement, and combination of parts, as more fully hereinafter set forth and claimed.

Referring to the drawings, Figure 1 is a vertical central longitudinal section of the device. Fig. 2 is an inner side elevation of one of the sides of the frame. Fig. 3 is a bottom plan view of the dasher, and Fig. 4 is an enlarged detail of one of the dasher-arms.

The sides A A' of the main frame have legs branching outwardly and downwardly from the lower half, *a*, of a two-part box, and are held together near their base by brace-bars B, having tenoned ends, which enter corresponding mortises, *a'*, in the legs of the sides. Shoulders *b*, extending in a vertical direction on either side of the tenons, serve to securely brace the frame, and as a means for the passage of screws or bolts to secure the parts together.

Seated within the boxes *a*, and held in place by the cap *a''*, is a horizontal shaft, C, having annular grooves *c* near each end coincident with and embraced by the two-part box of the sides, thereby preventing any longitudinal movement of the shaft, which at the same time

performs the function of a brace and joins the upper ends of the sides. Said shaft is provided at one end with a balance-wheel, D, and at its other or opposite end with a crank, E. A bevel gear-wheel, F, centrally located on the shaft C, meshes with a bevel-pinion, G, on a vertical shaft, H, mounted in a bracket-extension, J, of the side A'. The lower end of the shaft H has a socket to receive the end of a dasher-shaft, I, and is provided with a set-screw to hold the same in place. A collar, *h*, on its upper end, held in place by a pin, *h'*, keeps the shaft in place. The bracket-extension J is made separately, and attached to a projection of the side, as indicated in Fig. 1.

The dasher-shaft I at its lower end, and extending upward for a portion of its length, has kerfs or slots formed therein at right angles to each other, in which are seated the dasher-arms K, so as to form intervening spaces, and alternate the one with the other in such a manner that the horizontal plane of each intervening space between the arms of one vertical set is filled or interrupted by the arms of each alternating vertical set, thus producing a thorough agitation of a substance, within which the same is operated at a minimum expense of time and power.

In order that the dasher may be cheaply constructed and have its arms set cruciform, and that the sides of its shaft may be flush and have no spaces or recesses in which butter or other substance may lodge, and also that the arms may interlock and mutually brace each other, so as to prevent any sidewise movement, the arms K are made of one piece, with a central edge projection on one side only, equal in length to the desired space between the arms, and in width to the diameter of the dasher-shaft. Within this projection is centrally formed a slot, *k'*, equal to the kerf of the dasher-shaft, and is designed to receive the upper edge of the next succeeding arm at right angles thereto, the parts of the projection on either side thereof filling the space between it and the next succeeding arm. Each arm (except the top one) in its upper edge has a notch, *k''*, coinciding with the notch *k'*, to receive the lower edge of an arm, thereby providing each arm, except the top one, at its

central point with an interlocking notch at its upper and lower edge.

While I have described my invention as particularly adapted for churning, it is evident that it may be applied to other uses and purposes where a thorough agitation or mixing is desired.

I attach importance to the peculiar construction of the frame, and to the fact that the parts are adapted to be detached by simply removing the connecting - screws or bolts. When thus disconnected the parts may be closely packed for shipment, and when put together they are adapted to brace each other, so as to form a strong and durable frame.

Another important advantage of this construction is that should any of the parts be-

come broken or injured they may be readily removed and replaced by others, the parts being distinguished by numbers.

I claim—

The combination, with a dasher-shaft having kerfs formed at right angles therein, of dasher-arms alternately seated within said kerfs, each arm, except the top one, having a projection formed on one edge only and centrally notched, and a corresponding notch formed in its upper edge, as and for the purposes specified.

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

NORMAN E. COFFIN.

Witnesses:

SENECA SLY,
JOHN GLASS.