(No Model.)

N. S. ANDREWS & H. F. BURNAP.

CHURN.

No. 345,097. Patented July 6, 1886.

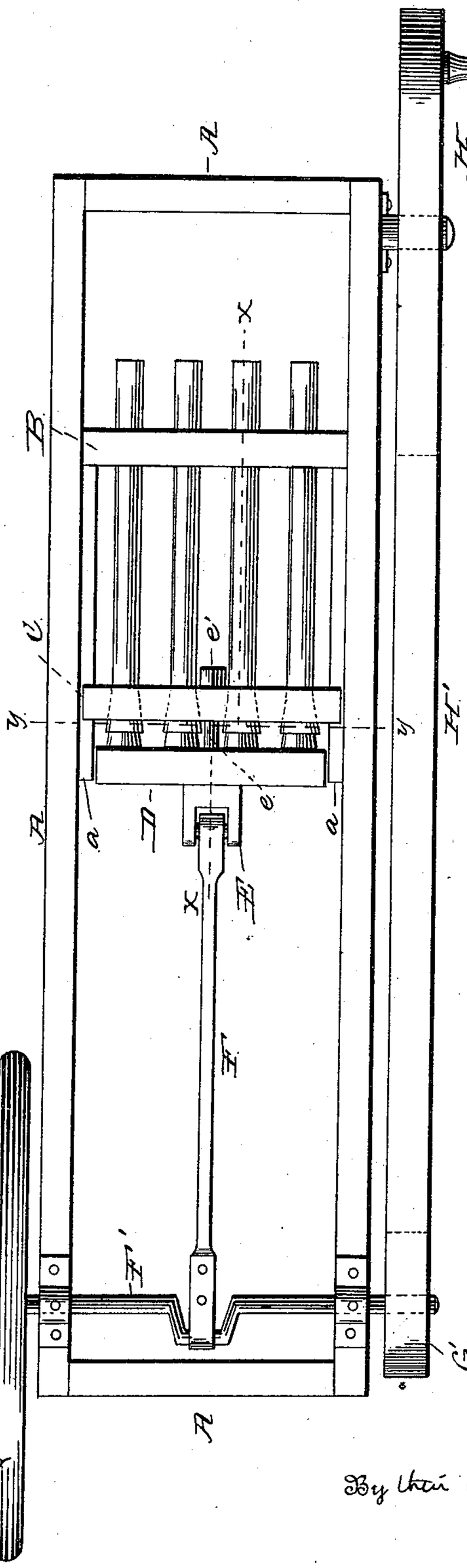

FIG. 1.

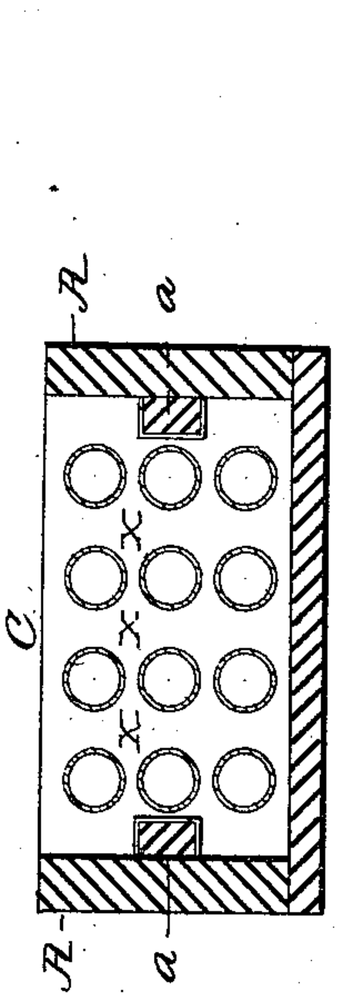

FIG. 3.

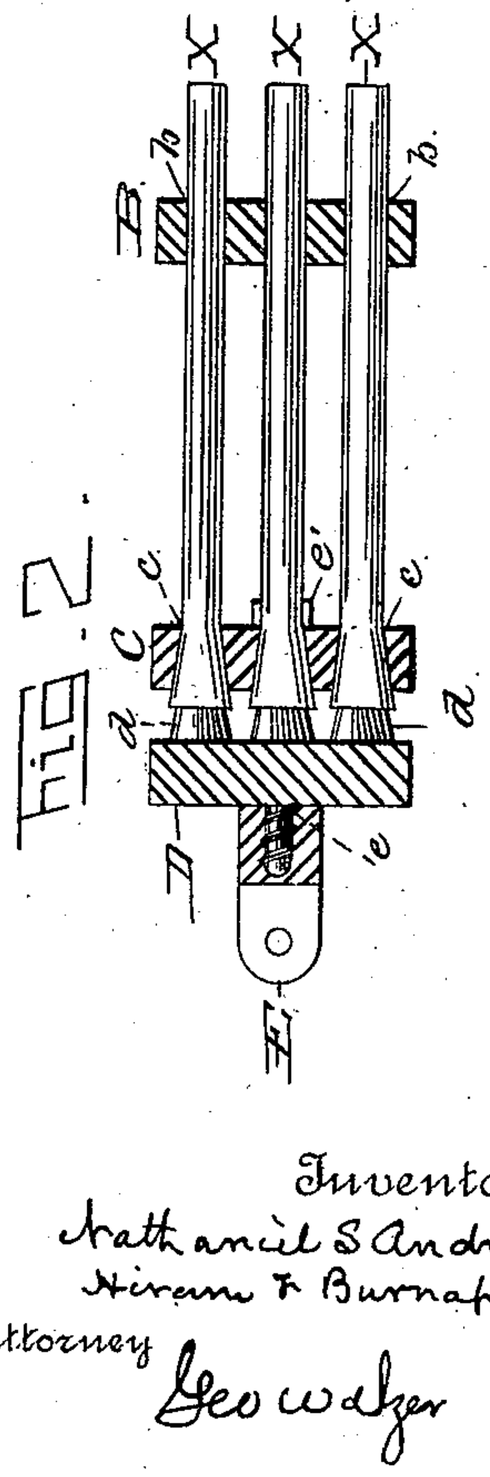

FIG. 2.

Witnesses
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NATHANIEL S. ANDREWS AND HIRAM F. BURNAP, OF DUBUQUE, IOWA.

CHURN.

SPECIFICATION forming part of Letters Patent No. 345,097, dated July 6, 1886.

Application filed April 26, 1886. Serial No. 200,166. (No model.)

To all whom it may concern:

Be it known that we, NATHANIEL S. ANDREWS and HIRAM F. BURNAP, citizens of the United States, residing at Dubuque, in the county of Dubuque and State of Iowa, have invented certain new and useful Improvements in Churns; and we do hereby 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.

Our invention relates particularly to that class of churns which are used in butter-factories for testing numerous samples of cream or milk simultaneously, and our object, mainly, is to produce a churn combining unusual simplicity, cheapness, and efficiency; to which ends the invention consists in the construction and arrangement of parts, all as more fully hereinafter described and claimed.

For the better understanding of the details of construction and arrangement attention is invited to the accompanying drawings, in which—

Figure 1 represents a plan view of the churn complete; Fig. 2, a vertical longitudinal section on the line *x x* of Fig. 1, and Fig. 3 a vertical transverse section on the line *y y* of said figure.

Like letters of reference denote corresponding parts.

A represents the supporting-frame, which is preferably rectangular, and is entirely open, except at its ends. On the inside of this frame, at opposite points upon the sides and near the center, are secured two guide-bars, *a a*, at the rear ends of which is secured a rigid guide-board, B, extending across from side to side of the frame A, and provided with a series of perforations, *b*, to receive the tubes X for holding the samples to be churned.

C is the transverse movable head, which is slotted at each end to fit the guide-bars *a a*, and, like the guide-board B, is provided with a series of perforations, *c*, except that they are made tapering to receive and hold the tapering necks of the sample-tubes X. These tubes are arranged horizontally, as shown, and after the corks *d* are inserted they are tightened in the head C by a nut, *e'*, on the threaded end of a bolt, *e*, which passes through said head and through a follower-board, D, and screws into the cross-head E. This follower-board D is arranged transversely, so as to press against the corks *d*, and it will be seen that by turning the nut *e'* in the proper direction both the head C and board D will be drawn together, the former tightening itself around the necks of the tubes and the latter forcing in the corks. The driving-power consists of the pitman F, which is attached to the cross-head E and to a crank-axle, F', having a fly-wheel, G, on one end, and a driving-pulley, G', on the other end, which connects by belting H' with the large driving-wheel H, mounted on the opposite end of the frame A. By turning the wheel H movement is transmitted to the pitman F, which reciprocates the board D and head C, together with the tubes, they being guided by the board B.

With a construction like that herein described we effect a saving of at least fifty per cent. of the cost to manufacture other churns of this class, while it is as efficient in all respects and as easy to handle.

What we claim, and desire to secure by Letters Patent, is—

1. In a churn of the character described, the combination of the frame A, provided with the guide-bars *a a*, and the rigid perforated guide B, the perforated head C, the sample-tubes, means for securing said tubes in head C, and means for operating the said head, substantially as described.

2. In a churn of the character described, the combination, with the frame A, provided with the guide-bars *a a*, of the rigid guide-board B, the movable head C, provided with tapering perforations *c*, the tapering neck, sample-tubes, means for securing said tubes in head C, and means for operating said head, substantially as described.

3. In a churn of the character described, the combination of the tapering neck, sample-tubes, the movable head C, provided with tapering perforations *c*, the follower-board D, and the cross-head E, provided with the screw-bolt *e*, having a nut, *e'*, on its outer end, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

NATHANIEL S. ANDREWS.
HIRAM F. BURNAP.

Witnesses:
MONROE M. CADY,
EZEKIEL FRENCH.