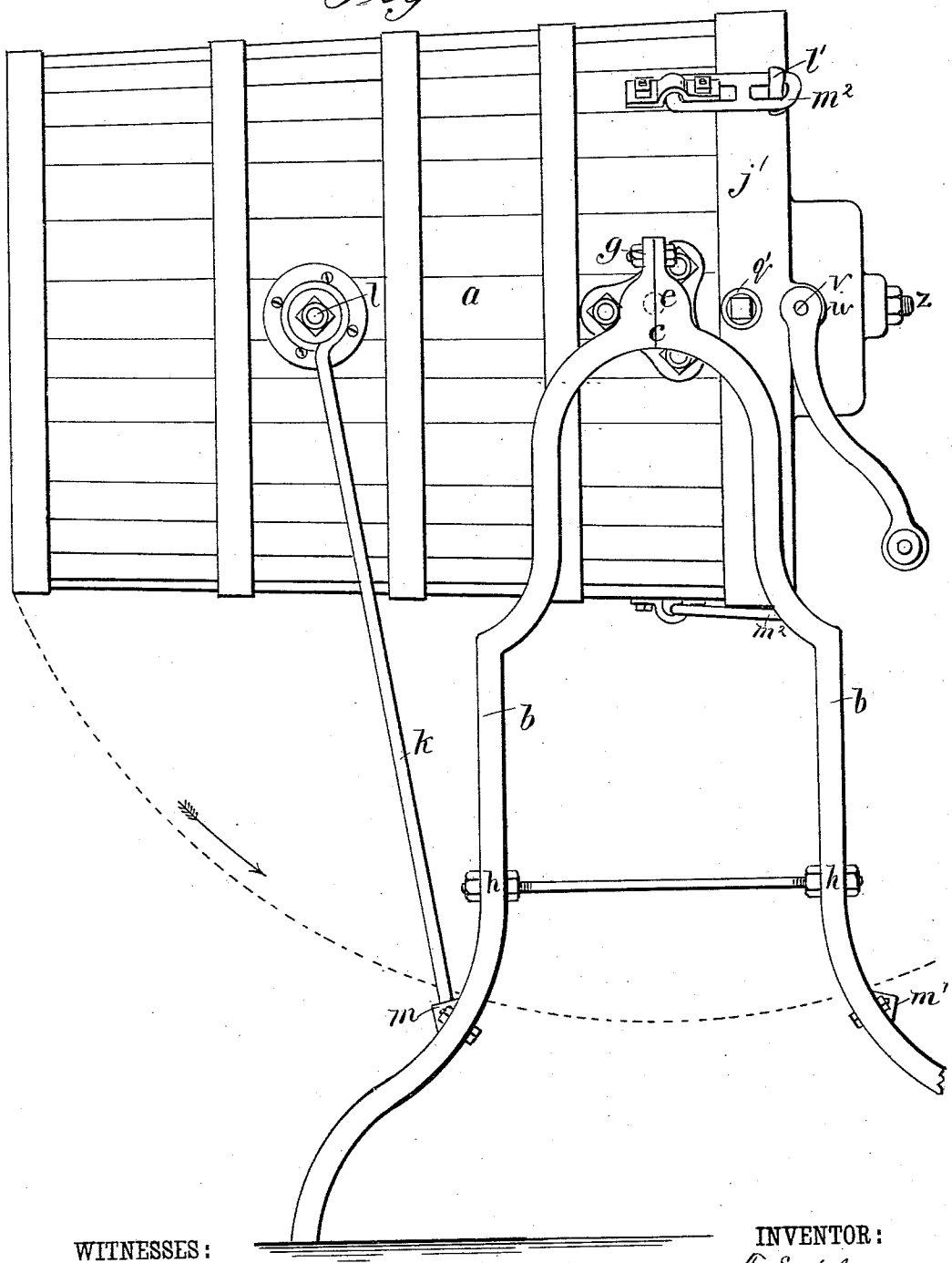
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F. ESPEL.

ICE CREAM FREEZER.

No. 277,250. Patented May 8, 1883.

Fig 1



WITNESSES:

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C. Sedgwick

INVENTOR:

F. Espel

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N. PETERS, Photo-Lithographer, Washington, D. C.

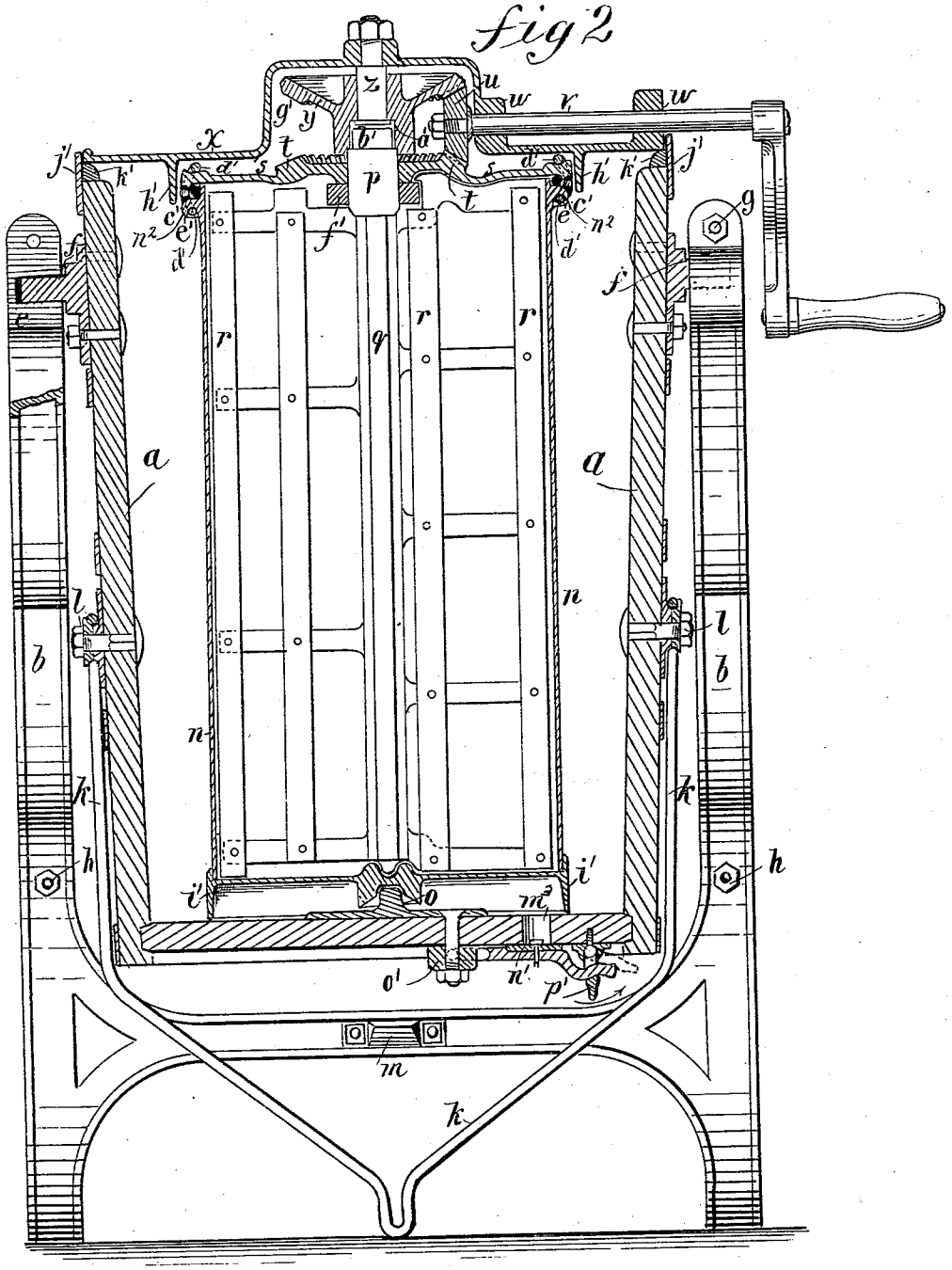
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F. ESPEL.

ICE CREAM FREEZER.

No. 277,250. Patented May 8, 1883.

Fig 2



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F. ESPEL.

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Fig. 3.

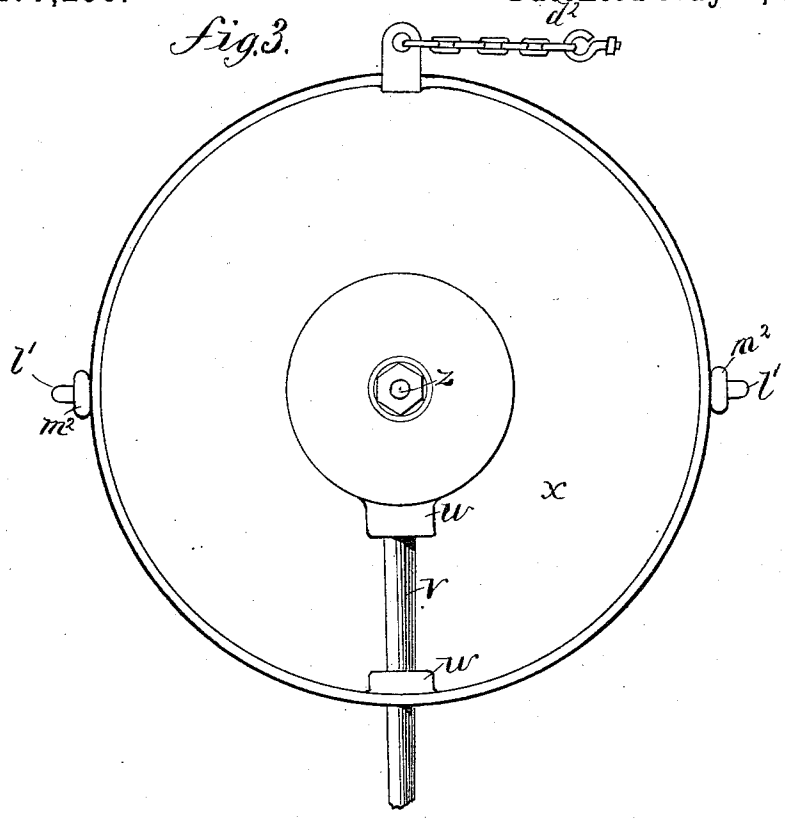


Fig 4

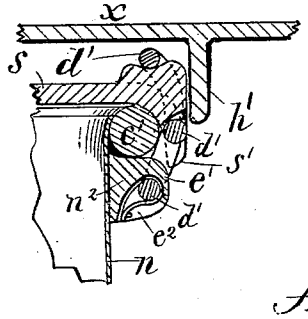


Fig 5

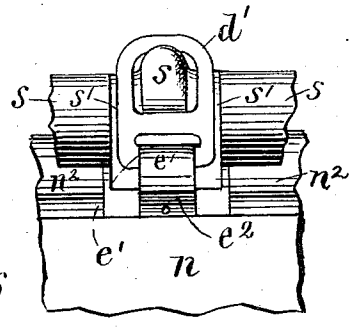
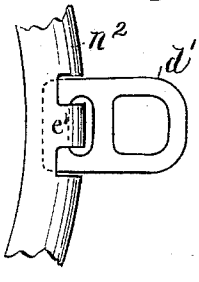


Fig 6



WITNESSES:

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UNITED STATES PATENT OFFICE.

FERDINAND ESPEL, OF SAN FRANCISCO, CALIFORNIA.

ICE-CREAM FREEZER.

SPECIFICATION forming part of Letters Patent No. 277,250, dated May 8, 1883.

Application filed October 21, 1882. (No model.)

To all whom it may concern:

Be it known that I, FERDINAND ESPEL, of San Francisco, in the county of San Francisco and State of California, have invented a new and Improved Ice-Cream Freezer, of which the following is a full, clear, and exact description.

My invention consists, essentially, of a contrivance of the freezer for being set in upright position for charging and discharging and shifting into horizontal position for working, and also changing the horizontal position from time to time to alternately set the opposite sides uppermost for the better circulation of the salt in the ice, which tends continually to settle to the bottom; and it also consists of certain improvements in the details of the construction of the freezer, all as hereinafter fully described.

Reference is to be had to the accompanying drawings, forming part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a side elevation of my improved ice-cream freezer set in the horizontal position for being operated. Fig. 2 is a vertical sectional elevation of the freezer in the upright position as for charging and discharging. Fig. 3 is a top view of the barrel-cover. Fig. 4 is a detail of the can and barrel-cover in section. Fig. 5 is a detail of the can in side elevation, and Fig. 6 is a detail of the cream-can in plan view.

In the first place, I make a supporting-frame for the ice-barrel *a*, consisting of two uprights, *b*, each cast in one piece, which fit together at the line *c*, dividing the sockets *e* for the trunnions *f* of barrel *a*, and bolted together at *g* over the trunnion-sockets and at *h*. The trunnions of the barrel *a* are located near the top of it, so that the barrel will rest in the upright position on them when desired.

A little below the center of the barrel the yoke-shaped brace *k* is pivoted to it at *l*, so as to swing to and act alike on either side of the barrel, whereby the barrel may be set in the horizontal position, as in Fig. 1, or the reverse—that is to say, with the end in the opposite direction and with the other side up, the foot of the brace being set in the foot-rest *m* or *m'*. Thus the barrel may be upright for charging or discharging and horizontal for working, and may be shifted from time to time as the salt settles down through the ice to the lowermost side to place it uppermost, and thus cause continual circulation of the salt. The horizontal position of the freezer is well known to be more favorable to the freezing operation than the vertical position, which is the object of such arrangement by me.

The cream-can *n* is supported at its lower end in the barrel by the step *o*. At the upper end it is supported by the part *p* of the beater-shaft *q*, which is a journal whereon the cover *s* of the can revolves, said cover having a toothed rim, *t*, gearing with the bevel-pinion *u* of the crank-shaft *v*, mounted on the bearings *w* of the barrel-cover *x*, and also gearing with the bevel-wheel *y*, mounted on the stud *z* of barrel-cover *x*, and supporting the beater-shaft *q* in its socket *a'* by the square extension *b'*, which is also the means of imparting rotary motion to said beaters, the direction being the reverse of the way the can revolves.

The cover *s* is packed tightly on the can *n* by the rubber packing-ring *c'*, and secured by the clasps *d'*, pivoted to ears *e'* of the ring n^2. The rubber packing-ring *c'* rests on this malleable-iron ring n^2, attached to the cream-can, near the top, for a support to said packing and for providing the ears *e'*, which are formed in the ring by notching it, as shown in Figs. 4 and 6. By thus forming the ears *e'* in the ring they do not project, so as to clog against the ice and obstruct the turning of the can.

A slip of brass or copper, e^2, is attached under the ears to afford pivot-fastenings to the clasps *d'*, whereby when the clasps are adjusted to lock the cover *s* upon the can *n* said clasps will be held within the notches of the ring n^2 and in the notches *s'* of cover *s*, the clasps being thus held within the ring and lid of the can and out of contact with the ice. The packing-washer *f'*, of rubber or other suitable material, packs the joint around the shaft.

The cover *x* for the barrel has a chamber, *g'*, for the space in which to locate the wheel *y*, and it has a flange, *h'*, extending downward from the inside below the edge of the cream-can cover *s*, and in close proximity to it, for preventing the ice and salt from collecting in the space containing the gears. The lower end of the cream-can has a flange, *i'*, extending to the bottom of the barrel to exclude the

ice and salt from the step *o* and to rest on the barrel-bottom when the freezer is in the upright position. The barrel-cover fits tightly down in the hoop *j'* on the packing-ring *k'*, and is confined by the studs *l'* and clasps m^2, the studs being radial projections from the top of the cover through notches made in the upper edge of the hoop.

In Fig. 1 of the drawings the top stud and clasp-fastening, *l'* m^2, are lowered to afford a perspective view thereof. The cover *x* is to be provided with a chain, d^2, to be fastened by head d^3 to the frame for safe-keeping when detached from the barrel.

At the bottom of the ice-barrel I have provided an escape-passage, m^3, for the discharge of the water, with a valve, *n'*, to close it, said valve being pivoted to a block, *o'*, secured to the bottom of the barrel by one of the bolts that fasten step *o*, and being fastened by a clasp, *p'*. A rubber stop-cushion, *q'*, prevents the barrel from being turned over too far by contact with the frame.

It will be seen that the driving-gears are wholly inclosed within the head of the barrel, so as to be concealed, and also protected from injury, and also that attendants and others will not be injured by them.

Having thus fully described my invention, I claim as new and desire to secure by Letters Patent—

1. A cream-freezer frame formed of two castings, *b b*, fitting together on a line, *c*, containing the divided trunnion-sockets *e*, and bolted together over said sockets, as shown and described.

2. The combination of the yoke *k*, pivots *l*, and rests *m* or *m'* to form a changeable connection between the barrel and frame, as shown and described.

3. The can *n*, supported on step *o*, and the beater *q*, having a journal, *p*, square extension *b'*, and stud *z*, in combination with a cover, *s*, having the toothed rim *t*, the crank-shaft *v*, carrying pinion *u*, the barrel-cover *x*, having the bearings *w*, and the bevel-wheel *y*, having socket *a'*, as and for the purpose specified.

4. The combination, with the notched ring n^2, the notched cover *s*, and the clasps *d'*, of the soft-metal slip e^2, arranged under the ears *e'*, as and for the purpose described.

5. The combination of the brace *k* with the barrel *a* and supporting-frame, said barrel being pivoted to the frame and the brace pivoted to the barrel, substantially as described.

6. The combination, with the barrel *a*, having trunnions *f*, of the supporting-frames constructed in two parts, *b*, divided through the trunnion-sockets *e*, and bolted together on said trunnions, substantially as described.

7. The combination of flange *h* of cover *x* with the cream-can cover *s*, substantially as described.

8. The combination, with cream-can *n* and its cover *s*, of the notched ring n^2 and clasps *d'*, pivoted within the ring for protection of the joint and clasp from the ice, substantially as shown and described.

9. The combination, with the can *n*, notched ring n^2, and clasp *d'*, pivoted in the notches, of the cover *s*, having notches *s'* to partially receive and protect the clasps *d'*, substantially as shown and described.

10. The combination of the valve *n'* with the ice-barrel bottom, said valve being secured by a step-bolt and by the clasp *p'*, substantially as described.

FERDINAND ESPEL.

Witnesses:
JOHN E. HAMILL,
JAMES SMILEY.