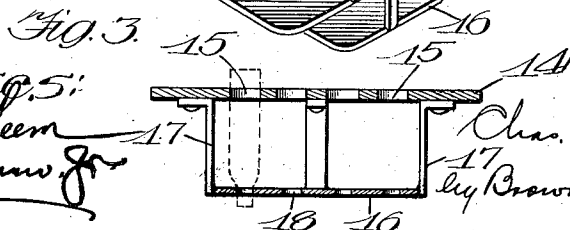
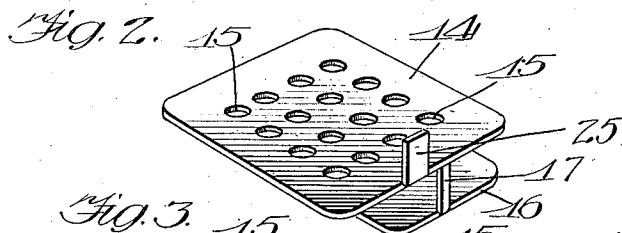
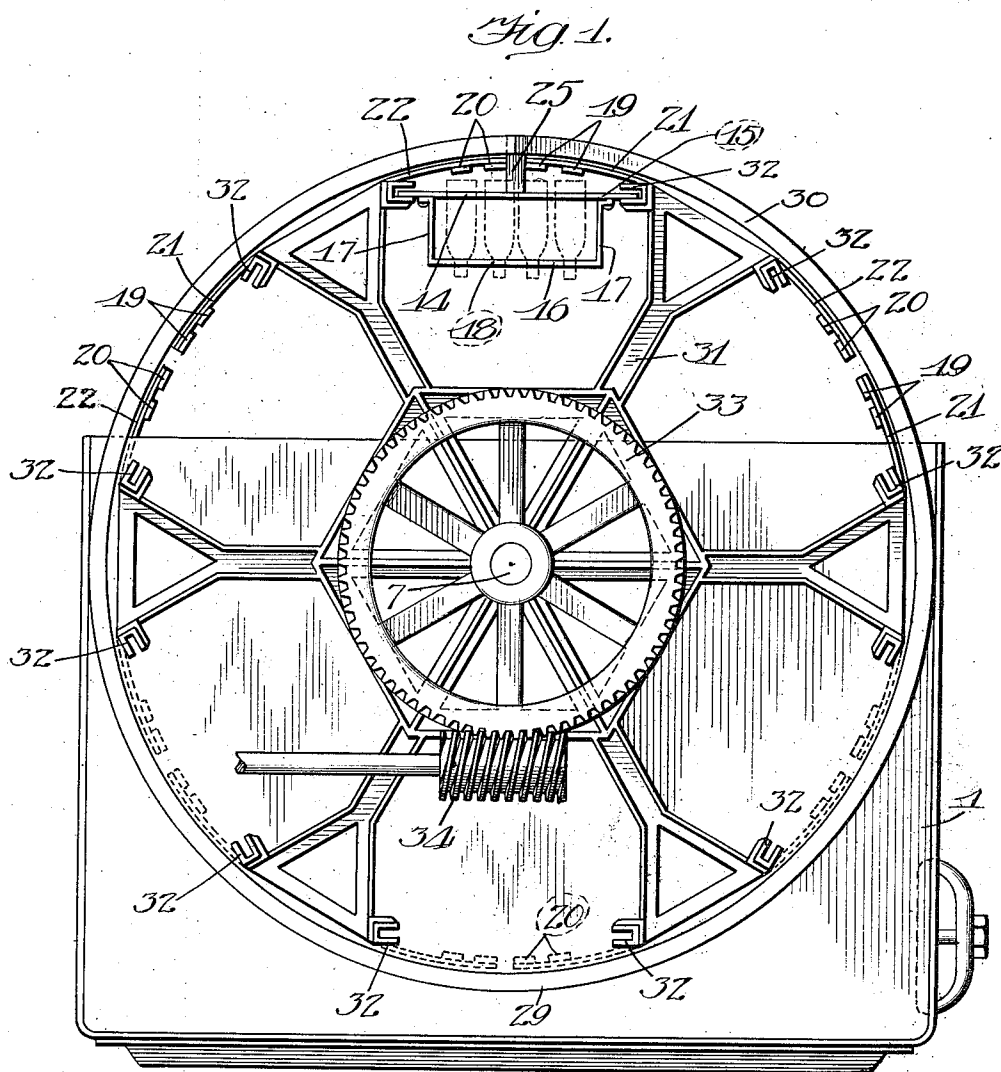


1,046,062.

C. E. FELT.
BOTTLE WASHING MACHINE.
APPLICATION FILED DEC. 11, 1908.

Patented Dec. 3, 1912.

4 SHEETS-SHEET 1.



Witnesses:
Chas. H. Seem
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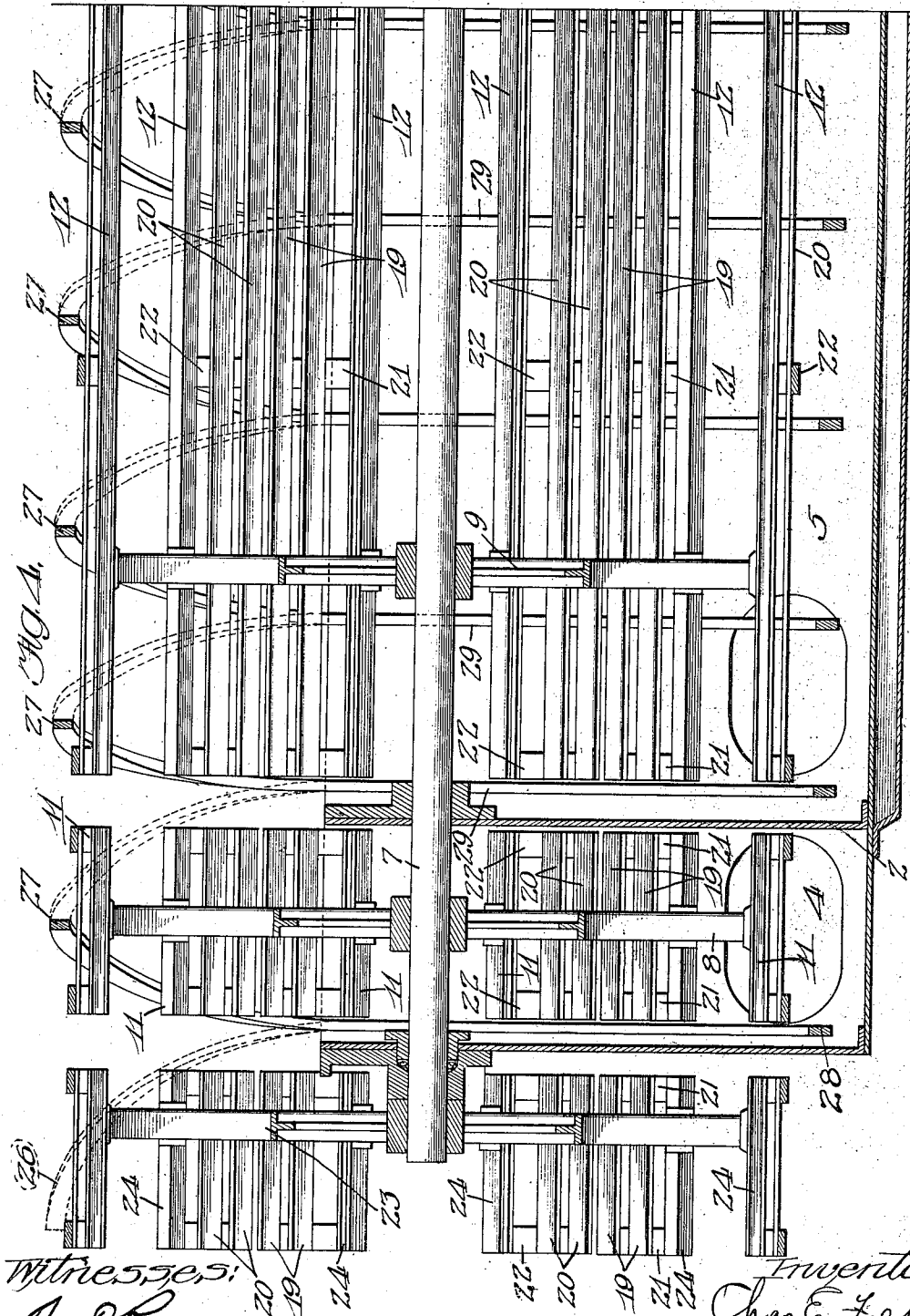
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4 SHEETS—SHEET 2.



Witnesses:
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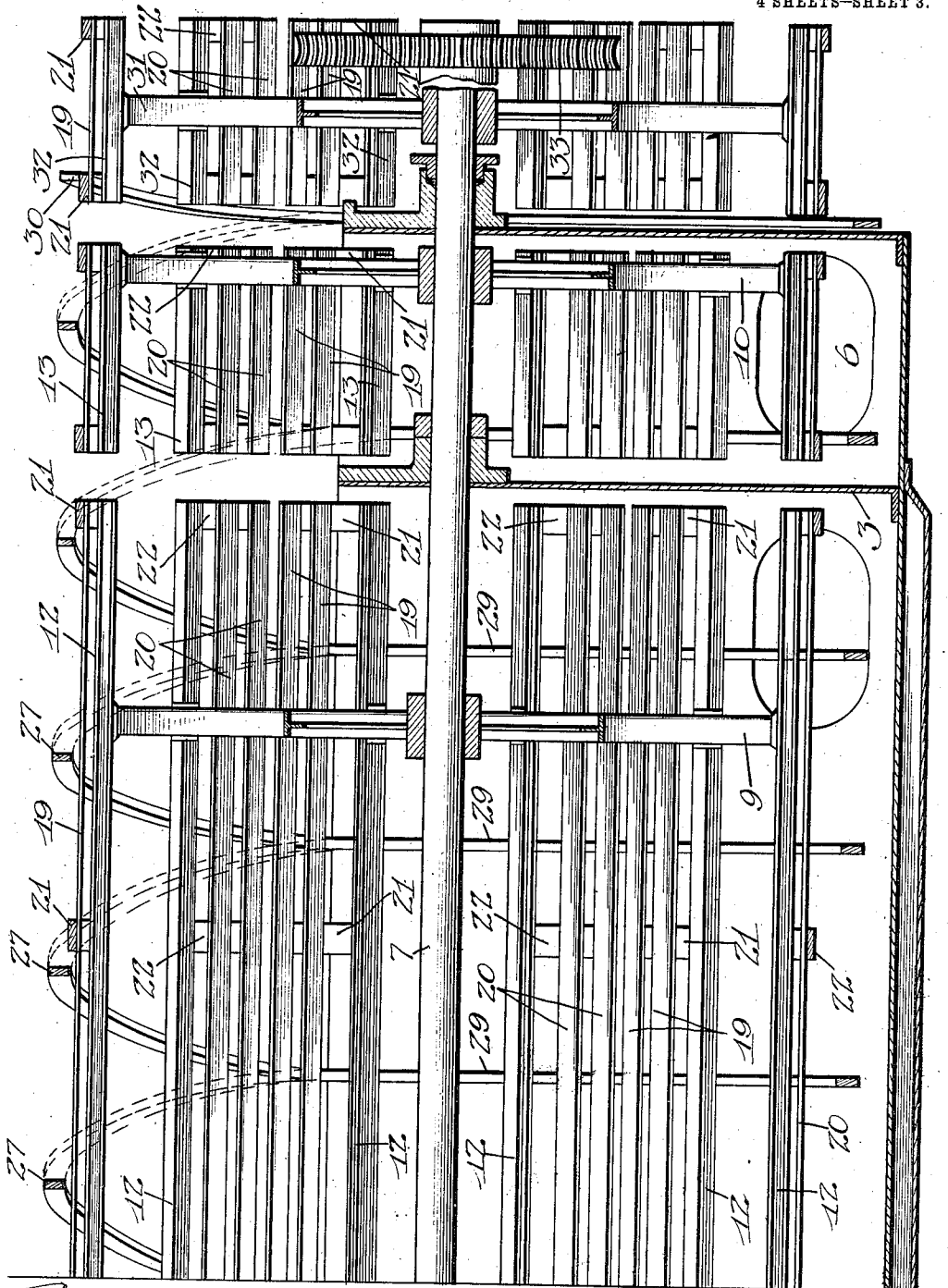
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4 SHEETS-SHEET 3.



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Fig. 5.

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4 SHEETS—SHEET 4.

Fig. 6.

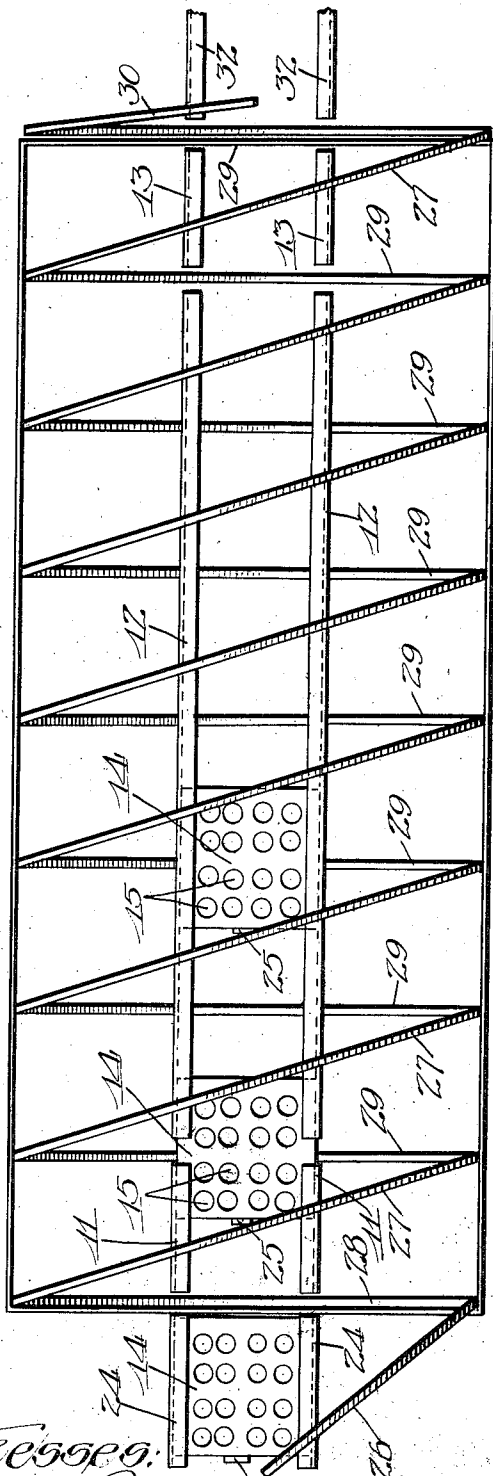


Fig. 8.

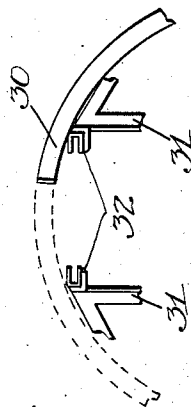
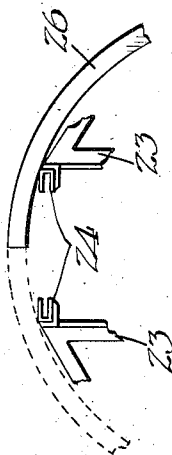


Fig. 7.



Witnesses:
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Chas. H. Seem

Inventor:
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UNITED STATES PATENT OFFICE.

CHARLES E. FELT, OF CHICAGO, ILLINOIS.

BOTTLE-WASHING MACHINE.

1,046,062.

Specification of Letters Patent.

Patented Dec. 3, 1912.

Application filed December 11, 1906. Serial No. 347,237.

To all whom it may concern:

Be it known that I, CHARLES E. FELT, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Bottle-Washing Machines, of which the following is a full, clear, and exact specification.

This invention relates to bottle washers, and more particularly to the part thereof especially intended for soaking the bottles, which has means for prolonging the travel of the bottles through one or more compartments of soaking or soaking and rinsing water while being held in crates or baskets.

The primary object of the invention is to provide improved and simple means for effectually advancing the bottles through the soaking solution; another object of the invention being to have improved means of such a character that the operation of the machine for thus advancing the bottles may be continuous, as contradistinguished from an intermittent movement.

With a view to the attainment of these ends and the accomplishment of certain other objects which will hereinafter appear, the invention consists in certain features of novelty in the construction, combination and arrangement of parts which will first be described with reference to the accompanying drawings, and then more particularly pointed out in the claims.

In the drawings,—Figure 1 is an end elevation of a machine embodying this invention. Fig. 2 is a detail perspective view of one of the bottle crates or baskets. Fig. 3 is a vertical transverse section thereof. Fig. 4 is a vertical longitudinal section of the machine showing the inlet end. Fig. 5 is a similar section showing the outlet end. Fig. 6 is a diagrammatic plan view of the conveyor and a crate-way with some crates thereon, as hereinafter described. Fig. 7 is a diagrammatic end view thereof showing the inlet end. And Fig. 8 is a similar view showing the outlet end.

1 is a tank which contains the water or solution in which the bottles are soaked. Ordinarily this tank is divided into a number of compartments containing different soaking or soaking and rinsing solutions; the first usually being warm water to temper the bottles; the second, strong suds or some cleansing solution; and the third, rinsing water or solution; and so on, for as

many compartments and different solutions as may be desired. In the present example, the tank is divided by partitions 2, 3, into three chambers or compartments 4, 5, 6. Mounted in the tank 1 is a shaft 7, which preferably extends throughout its entire length, and in fact projects a little beyond each of the ends, and secured to this shaft and revolving in the compartments 4, 5, 6, are spiders 8, 9, 10, each having a plurality of spokes, as indicated in Fig. 1, between which are mounted the tracks or ways on which the baskets or crates before mentioned slide with the bottles.

Owing to the presence of the partitions 2 and 3 in the tank 1, it is necessary that the tracks or ways for the crates be made sectional or divided at the points where the partitions occur, in order that the spiders may revolve in their respective compartments without interference from the partitions. These sectional ways or tracks for the spider 8 are indicated at 11; those for the spider 9, at 12; and those for the spider 10, at 13; and all of these tracks or ways are preferably in the form of channel-bars, with their hollow sides turned toward each other as shown in Fig. 1, so as to receive and support the projecting edges of a plate 14 which constitutes the upper member of the bottle crate or basket having apertures 15 for the reception of the body-portions of the bottles, the lower member of the basket or crate being in the form of a plate 16 suspended from the plate 14 by hangers 17, and provided with apertures 18 for the necks of the bottles.

With the bottles thus arranged in their crates or baskets and the baskets supported in the channel-bar ways, the spiders may be revolved and the bottles thereby submerged and carried through the solution in the various compartments, each spider carrying as many of the crates as may be accommodated on the crate ways, whose number is of course limited only by the size or diameter of the spider. In order that the bottles may not fall out of their crates when they reach an inverted position, each of the ways is provided with a bottle-retaining means consisting of longitudinal slats 19, 20, secured to arms 21, 22, which are attached to the spiders or to the ways thereon and hold the slats 19 over the bottoms of the bottles as illustrated in Fig. 1, one of the slats 19, 20, being employed for each row of bottles in

the crate, and they are arranged longitudinally of the line of movement of the crate on the ways.

At one end of the shaft 7, where it projects through the tank 1, is secured a spider 23, which is similar to the others, and which is provided with tracks or ways 24, similar to the other ways already described, for the purpose of receiving the crates or baskets from the hand of the operator, who places the crates between each pair of tracks as the same come to him in a convenient position. As the shaft 7 rotates, causing the spider 23 to revolve, a projection or lug 25, one of which is formed on each of the crates and stands upwardly therefrom as indicated in Fig. 1, comes into engagement with the end flight 26 of a conveyer which extends throughout the length of the machine, as will be presently described, and this end flight causes the crate whose lug 25 is in engagement therewith to move inwardly as the spider 23 revolves, and thus pushes the crate from the track or way on the spider 23 across the end wall of the tank 1 and onto the track or way 11 of the next spider. This conveyer just referred to consists of a series of additional flights 27, all of which are arranged in a diagonal or inclined position with relation to the tracks or ways on the spiders, as clearly indicated in Fig. 6, such flights 27 being, in other words, like one half of an Archimedean screw. At the sides of the tank 1, all of the flights 26, 27, of the conveyer continue downward into the tank, but here they lose their spiral formation and are simply semi-circular guides 28, 29, which are arranged in planes at right-angles to the tracks or ways, so that when the lug 25 strikes the same the crate will no longer travel longitudinally of the tank, but will simply revolve through the cleansing or soaking solution with the spider. The purpose of this is to prolong the immersion of the crate in the soaking solution, and to prevent it from coming into collision with the partitions in the tank, where the compartments are too narrow to permit of any forward travel after the crate has entered them. It will thus be seen that the flight 26 guides the lug 25 to the right-hand side of the guide 28, and this in turn keeps possession of it until it arrives at the right-hand side of the next flight 27, which carries it to

the next guide 29, and so on throughout the length of the main tank until the final guide 29 is reached, which directs the lug to a discharge flight 30, arranged outside of the tank, and adapted to push the crate onto any suitable receiving means. For this purpose a spider 31, similar to the spider 23, is employed, and is provided with the tracks or ways 32, similar to the tracks or ways on the other spiders, and which are of course arranged in lines coinciding with the tracks or ways on the other spiders, so that the crates as they slide from the ways 13 will readily enter the outside ways, whence they may be removed by an attendant.

The requisite rotary motion of the shaft 7 for revolving all of the spiders and their ways may be imparted to the shaft by a worm-wheel 33, from any suitable source of power connected to a worm 34.

In order that the invention may be understood by those skilled in the art, the details of this embodiment thereof have been thus specifically described, but

What I claim as new therein and desire to secure by Letters Patent is:

1. In a machine for the purpose described, the combination of a tank in which to soak the bottles, a series of guides arranged at an angle to the longitudinal axis of the tank, means for supporting the bottles to be soaked, having means for engagement with said guides, and means for revolving the bottle-supporting means around the longitudinal axis of the tank.

2. In a machine for washing bottles and the like, the combination of a tank; a shaft extending throughout the length thereof; means carried by said shaft for supporting a series of bottle-holding racks; and a continuous member extending throughout the length of the tank, the upper portions of the member having a spiral relation, whereby as the shaft is rotated the bottles will be advanced from one end of the tank to the other.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, on this 5th day of December, A. D. 1906.

CHARLES E. FELT.

Witnesses:

FRANCIS A. HOPKINS,
CHARLES H. SEEM.