W. H. INGLE.

ATTACHMENT FOR ELEVATORS.

APPLICATION FILED SEPT. 14, 1909.

970,925.

Patented Sept. 20, 1910.

2 SHEETS—SHEET 1.

Fig. 1.

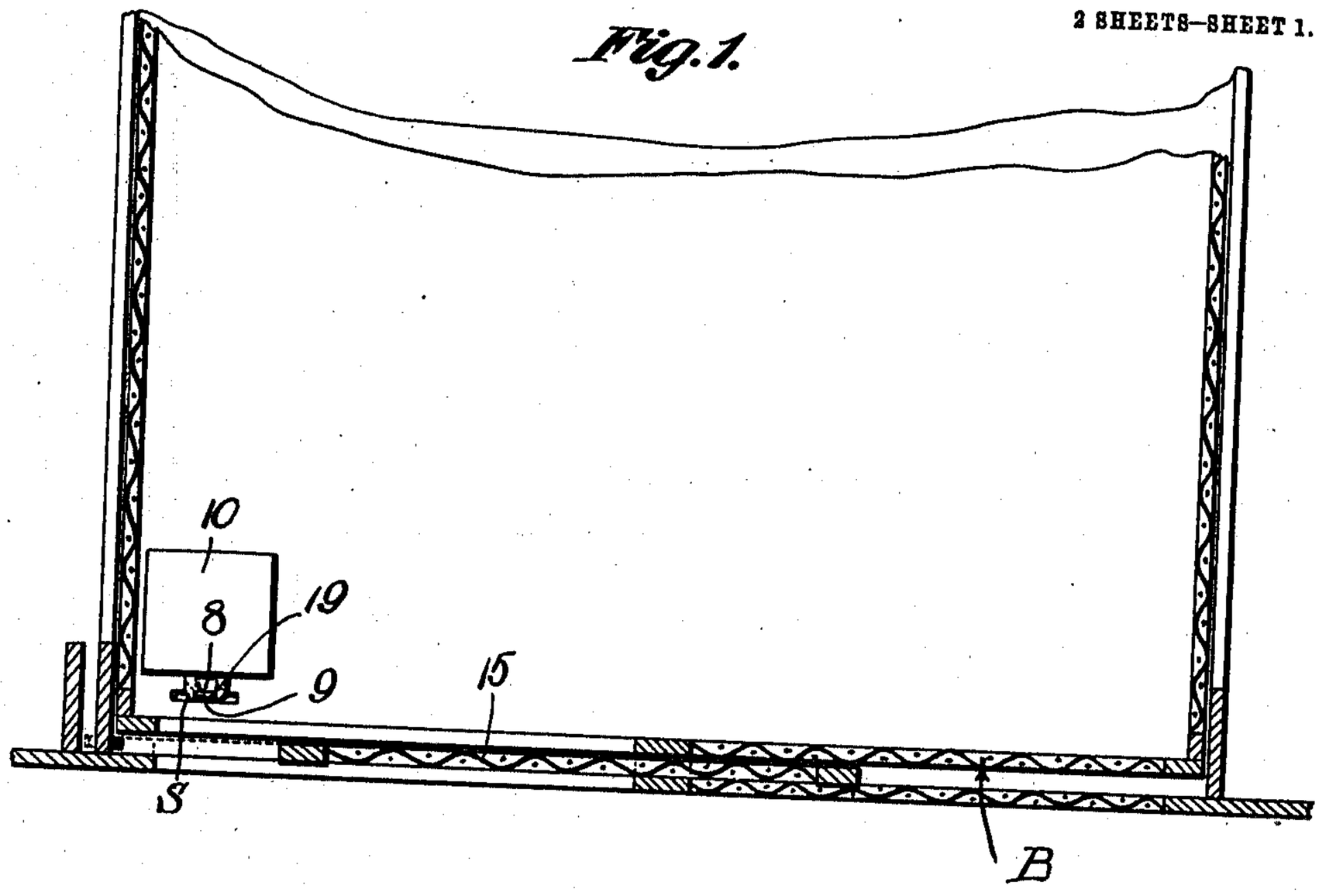
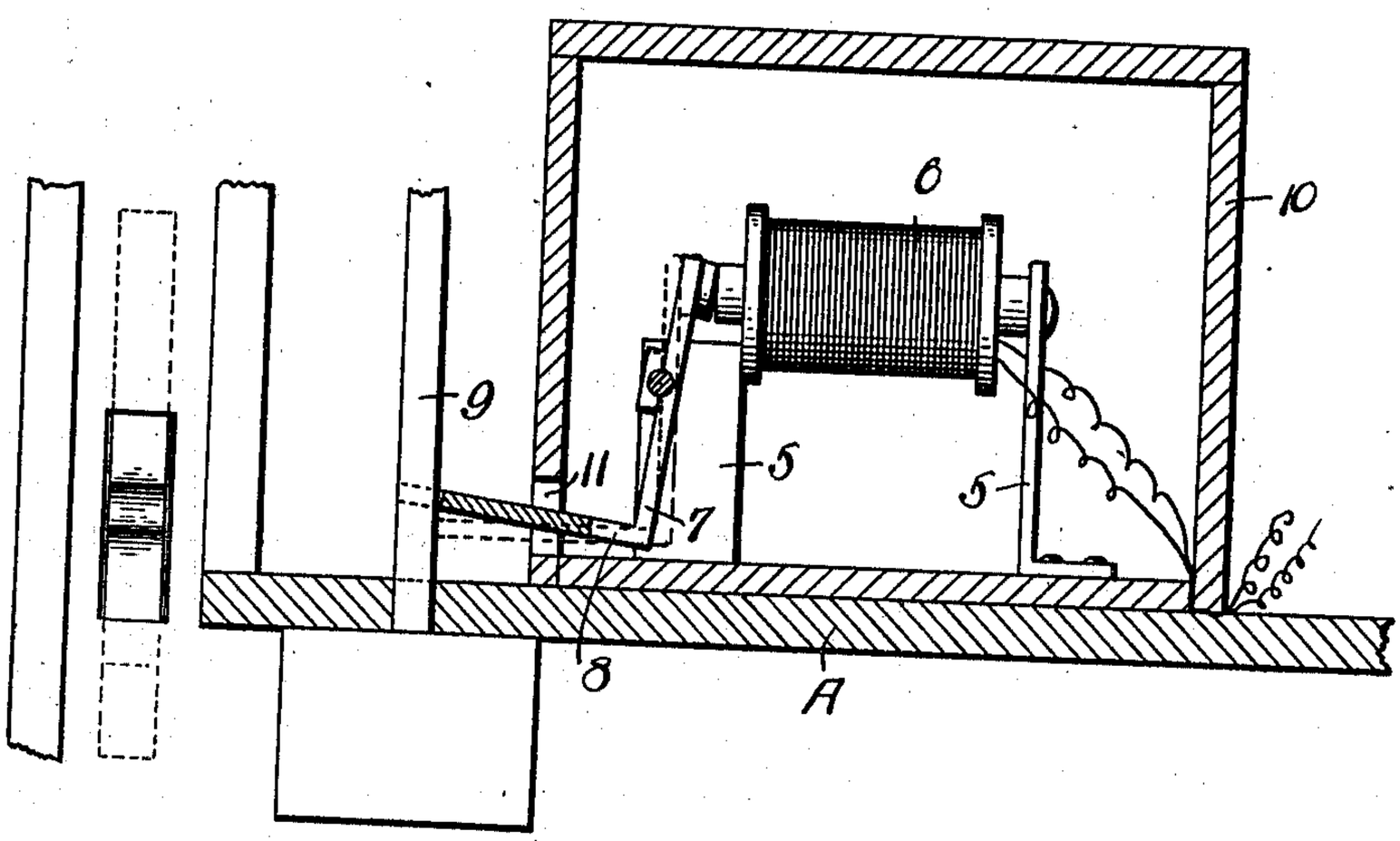


Fig. 2.



Witnesses

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2 SHEETS—SHEET 2.

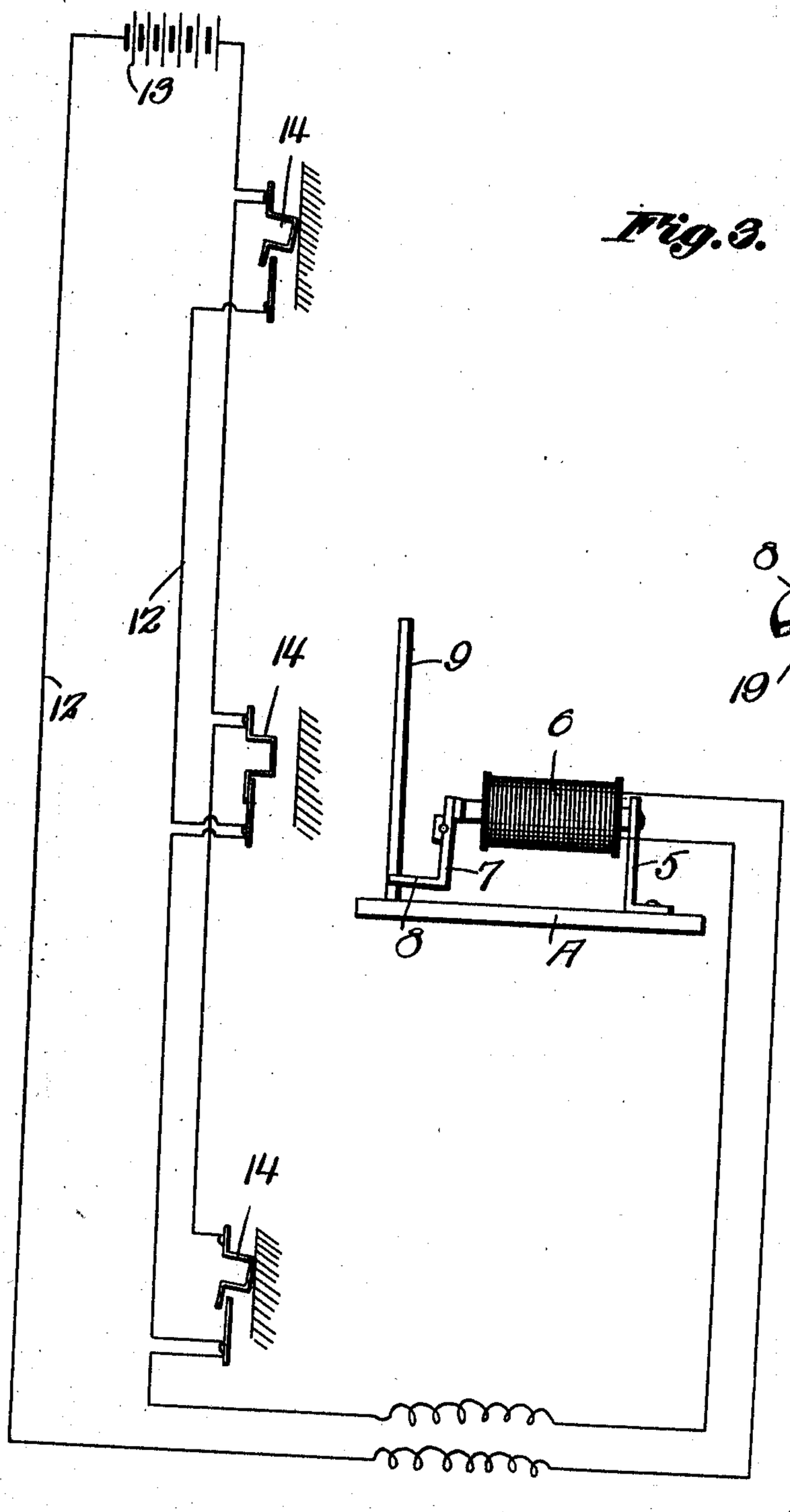

Fig. 3.

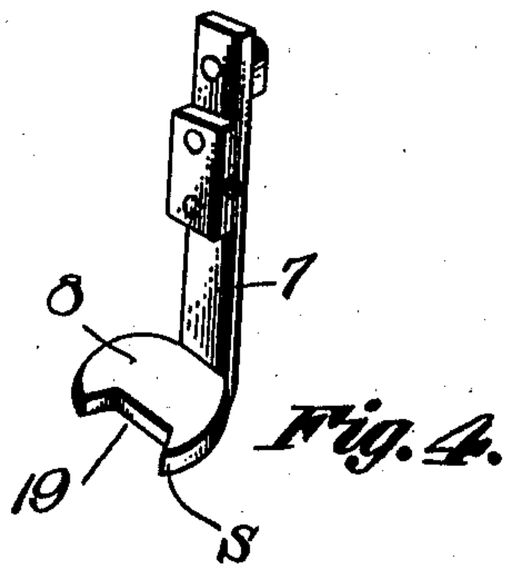

Fig. 4.

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UNITED STATES PATENT OFFICE.

WILLIAM H. INGLE, OF TACOMA, WASHINGTON.

ATTACHMENT FOR ELEVATORS.

970,925. Specification of Letters Patent. Patented Sept. 20, 1910.

Application filed September 14, 1909. Serial No. 517,643.

To all whom it may concern:

Be it known that I, WILLIAM H. INGLE, a citizen of the United States, residing at Tacoma, in the county of Pierce and State of Washington, have invented new and useful Improvements in and Relating to Attachments for Elevators, of which the following is a specification.

This invention relates to an improved attachment for elevators whereby the operation of the starting lever to start the car will be rendered impossible while the door of the cage at the landing where the car is stationed is still open, thus positively preventing such accidents as frequently happen by passengers attempting to enter or leave the car after the latter has started in motion.

Further objects of the invention are to simplify and improve the construction and operation of this class of devices.

With these and other ends in view which will readily appear as the nature of the invention is better understood the same consists in the improved construction and novel arrangement and combination of parts which will be hereinafter fully described and particularly pointed out in the claim.

In the accompanying drawings has been illustrated a simple and preferred form of the invention; it being however understood that no limitation is necessarily made to the precise structural details therein exhibited, but that changes, alterations and modifications within the scope of the invention may be resorted to when desired.

In the drawings: Figure 1 is a horizontal sectional view taken through part of the car and cage of an elevator equipped with the invention. Fig. 2 is a sectional elevation illustrating the locking device for the controlling lever. Fig. 3 is a diagrammatic view of the electrical circuit whereby the lever locking device is actuated. Fig. 4 is a perspective view of the armature which constitutes the locking device for the starting lever.

Corresponding parts in the several figures are denoted by like characters of reference.

Upon the floor A of a suitably constructed elevator car B is placed a frame including uprights 5—5 supporting an electro-magnet 6. The armature of said magnet consists of a suitably supported lever 7 having at its lower end a laterally extending flange 8 of approximately circular shape and provided with a notch or recess 19 in the outer edge thereof; said recess being adapted for engagement with the controlling lever 9 of the elevator car. A suitable casing or housing 10 serves to cover the electro-magnet, said housing being provided with a slot 11 through which the flange 8 of the armature lever 7 may project.

The circuit of the electro-magnet includes the conductors 12—12 which are terminally connected with the source of electrical energy, represented as consisting of a battery 13. One of the conductors includes a plurality of spring-actuated contact buttons or loops 14, one of said contacts being located at each landing in the path of the elevator cage door 15; said contacts are normally closed, but are adapted to be broken by engagement with the sliding door 15 as will be readily understood, thus making an open circuit when all the cage doors are shut, but the circuit being automatically closed by the opening, or partial opening of any one of the cage-doors.

The electro-magnet 6 when energized attracts the armature, thus projecting the flange 8 of the latter in the direction of the lever 9, which, while the car is in motion, lies in the path of one or the other of the teeth or spurs S of the said flange adjacent to the recess 19. When the lever 9 is actuated to stop the car and the cage door at the landing is slid open, the armature under the impulse of the magnet will be tilted so as to receive the lever 9 in the recess 19 where it will be securely held while the car is stationary. The starting lever moreover, may not be again actuated for the purpose of starting the car until the door 15 has been closed, thereby engaging one of the contact members 14 and breaking the circuit whereupon the armature will gravitate to a non-engaging position with reference to the lever 9 which latter may be actuated to start the car.

By this invention, which is very simple in construction and which may be installed at a very moderate expense, premature starting of the car will be positively prevented, and accidents arising from this cause will be averted.

Having thus described the invention, what is claimed is—

A safety attachment for elevators comprising in connection with an elevator car, a supporting frame upon the floor of said car, an electro-magnet supported by said

frame, an armature lever mounted pivotally upon the frame, said lever being provided with a notched flange, a housing for the electro-magnet having a slot through which the notched flange of the armature lever projects, a controlling lever arranged in the path of the notched flange of the armature lever, and an electrical circuit including the electro-magnet and including also a plurality of spring actuated contact devices, one of said contact devices being disposed at each of the elevator landings in the path of the door whereby admission to the elevator car is obstructed, said contacts being held normally open when the doors are closed, whereby the opening of one door will close the circuit and energize the electro-magnet to attract the armature.

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

WILLIAM H. INGLE.

Witnesses:

MINNIE KRAMER,

JOSEPH BLOOM.