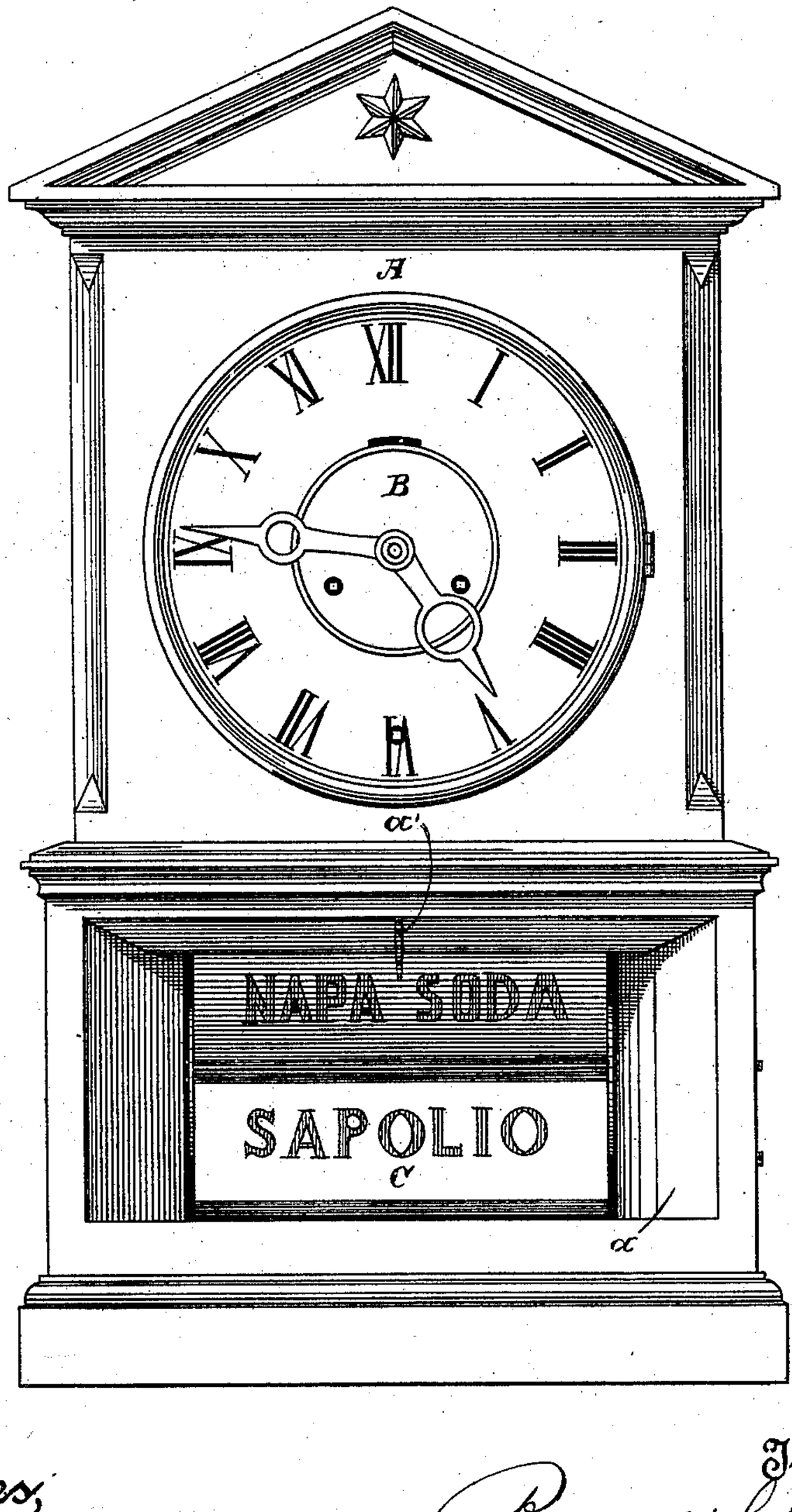
(No Model.) 2 Sheets—Sheet 1.

R. G. WENZEL.

ADVERTISING CLOCK.

No. 558,625. Patented Apr. 21, 1896.

Fig. 1.



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(No Model.) 2 Sheets—Sheet 2.

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No. 558,625. Patented Apr. 21, 1896.

Fig. 2.

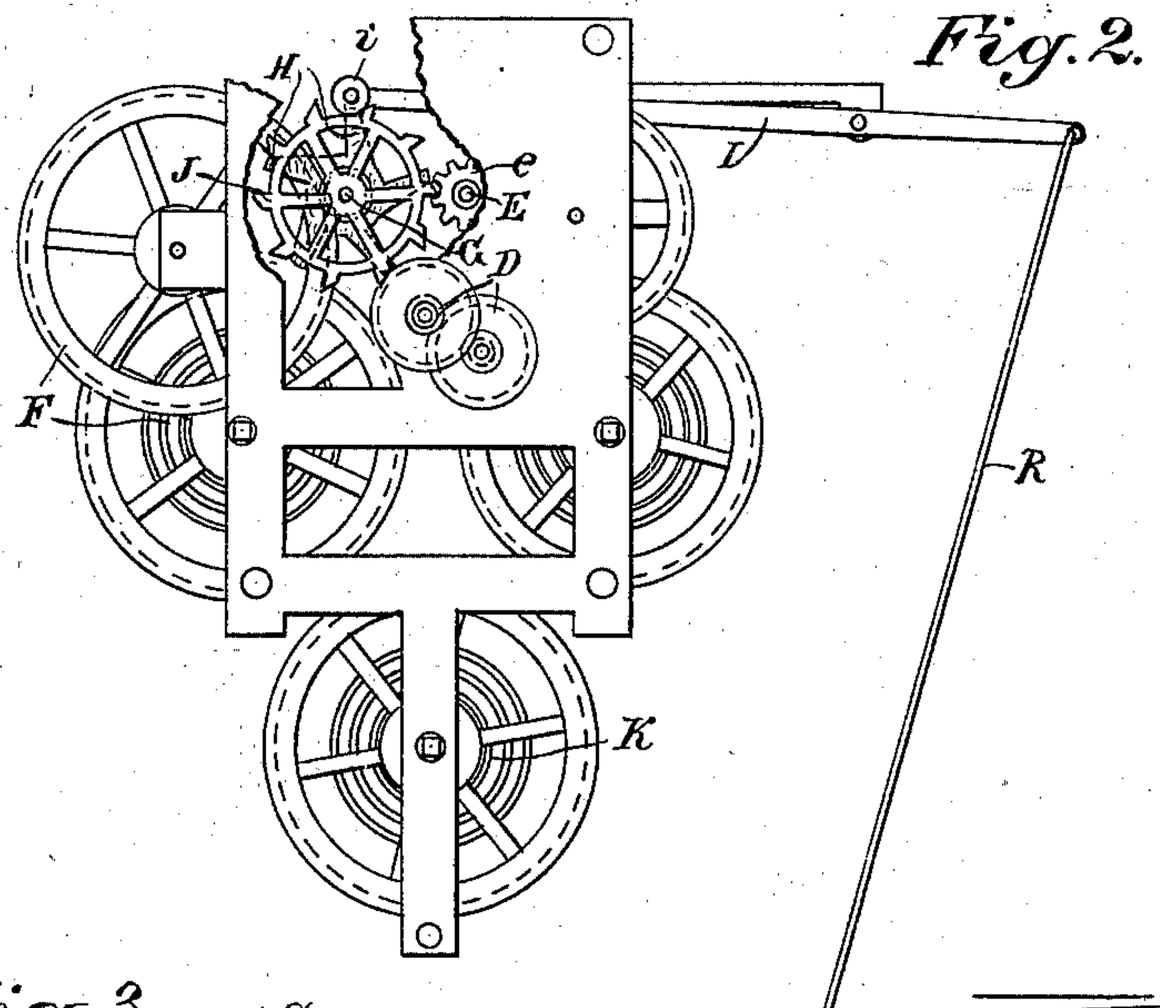
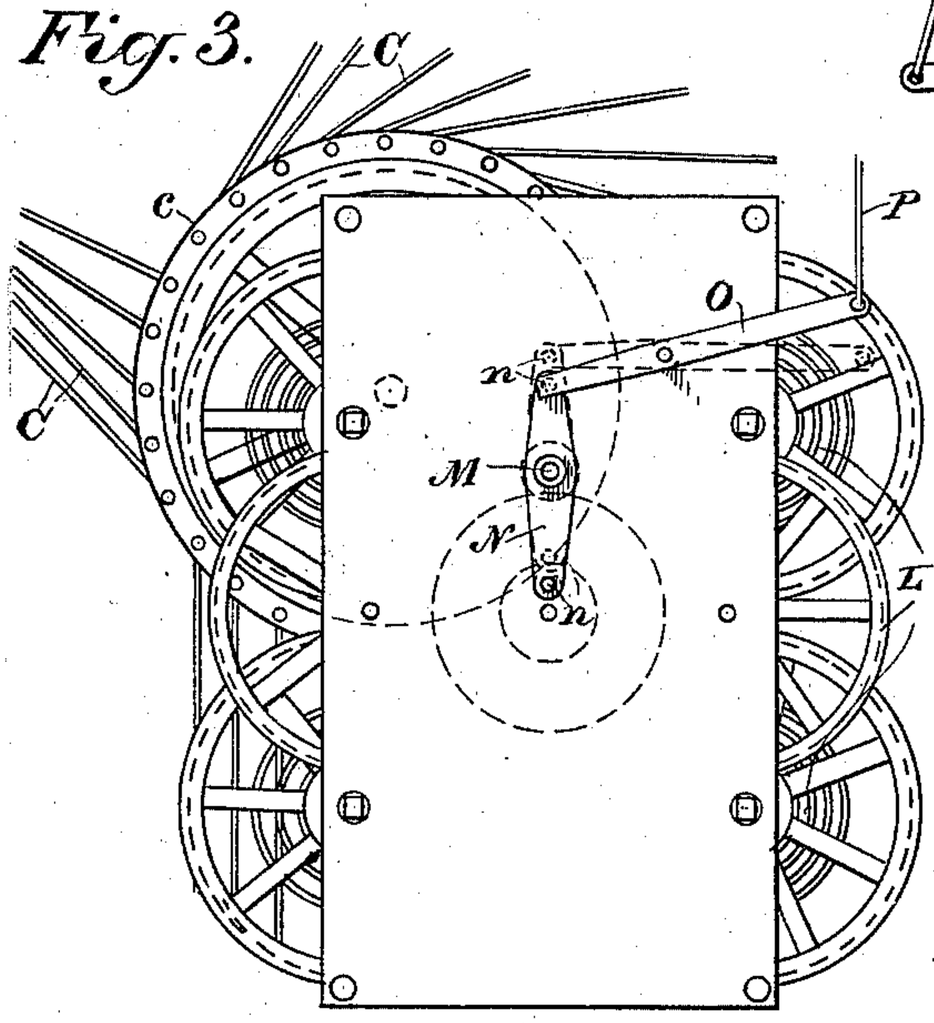
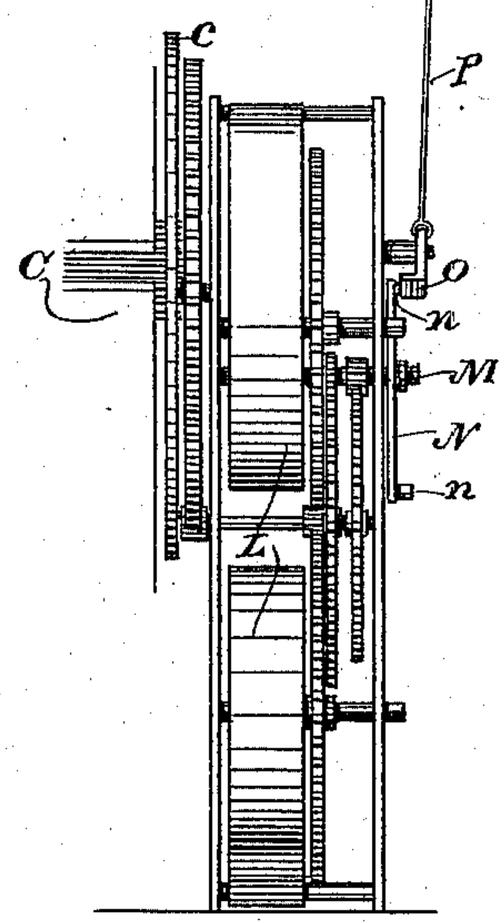


Fig. 3.





Witnesses,
J. A. Lowe
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Inventor:
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By Dewey & Co.
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UNITED STATES PATENT OFFICE.

RUDOLPH G. WENZEL, OF SAN FRANCISCO, CALIFORNIA, ASSIGNOR TO LOUIS A. ROBERTSON AND WARREN F. MILLS, OF SAME PLACE.

ADVERTISING-CLOCK.

SPECIFICATION forming part of Letters Patent No. 558,625, dated April 21, 1896.

Application filed January 2, 1896. Serial No. 574,077. (No model.)

To all whom it may concern:

Be it known that I, RUDOLPH G. WENZEL, a citizen of the United States, residing in the city and county of San Francisco, State of California, have invented an Improvement in Advertising-Clocks; and I hereby declare the following to be a full, clear, and exact description of the same.

My invention relates to that class of advertising devices in which a series of cards bearing advertising or display inscriptions is operated by means of and in connection with a clock, so that said cards are successively exhibited.

My invention consists in the novel power-transmitting and escapement mechanism between the clock and the series of exhibition-cards, as I shall hereinafter fully describe and specifically claim.

The object of my invention is to provide a simple and effective advertising-clock which is accurate in its operation and is not likely to get out of order.

Referring to the accompanying drawings, Figure 1 is a front view of my clock. Fig. 2 is an elevation of the operative mechanism. Fig. 3 is a side elevation of the drum-driving mechanism, showing the unequal armed bar N.

A is a frame, which in its upper portion carries the dial B of the clock, which has playing over it the usual hands, and its lower portion is constructed as a chamber to receive the series of advertising or display cards C, which are exhibited through the glazed front *a* of said chamber.

D represents the mechanism for driving the hands of the clock, said mechanism needing no detailed description. E is a shaft which is driven by this clockwork mechanism, and said shaft carries a pinion-pawl *e*, which serves the purpose of a retaining and tripping pawl.

F represents a spring-driven mechanism, the tendency of which is to drive a shaft G, which has upon it a cam H, of a character adapted to move or vibrate a lever I, and for this purpose said cam is here shown as consisting of a series of elevations or points with intervening depressions, in and upon which plays the end of the lever I, through the intervention of a small antifriction-roller *i*. Upon this shaft is a toothed wheel J, which is engaged by the retaining and tripping pinion-pawl *e*, and as said pinion-pawl rotates under the power of the clockwork mechanism it will, at such stated intervals as may be previously determined in its construction and adaptation to periods of movement, let slip the toothed wheel, so that the latter will be permitted to move the distance of a tooth and will be caught again by the pinion-pawl, thereby permitting the stated movement of the shaft G, and with it the cam H, which thus raises the lever I upon one of its points or elevations, or allows it to drop down again into one of its depressions, as the case may be.

A second spring K, with suitable intermediate gearing, may, if desired, be employed to assist the force of the first spring which drives the mechanism F.

The series of advertising or display cards C are carried in the ends of a rotating drum *c*, being axially mounted therein in such a manner that as the drum periodically partially rotates each card will fall, successively, from a position above where it is temporarily restrained by a small finger *a'* in the casing A to a position below, so that each card exhibits in its upper position the inscription upon one side and in its lower position the inscription upon its other side. This card-carrying drum *c* is driven by means of spring-actuated mechanism, (represented generally by L,) which does not need a detailed description, as it consists simply of trains of gears, with a suitable spring-power, arranged in manners that are well known to those skilled in the art. In this spring-actuated mechanism L, and as part thereof and driven thereby, is a shaft M, on the outer end of which is a stop-bar N, having a retaining-point *n* at each end. One arm of this stop-bar is longer than the other—that is to say, that said bar from its center of movement is longer to one of its ends or retaining-points than to the other end or point.

O is a pivoted lever, one end of which is adapted to engage and successively retain the points of the stop-bar N. The other end is connected by a rod or link P with one end of a pivoted lever Q, the other end of which is connected by a rod or link R with the end of the lever I.

The operation of the device is as follows:

The series of display or advertising cards is under the tension of its spring-driven mechanism L, which is held inactive by the engagement of the end of the lever O with one of the retaining-points of the stop-bar N. As the clockwork mechanism D operates, as heretofore described, it successively releases and catches, by means of the pinion-pawl *e*, the shaft G, which is under constant tension from its spring-driven mechanism F, so that the cam H alternately raises and lowers the inner end of the lever I. At one movement it raises it, thereby depressing its outer end, which movement, through the intervening mechanism, depresses the engaging end of the lever O, thereby releasing the retaining-point *n* of the stop-bar N and permitting the spring-driven mechanism L to rotate the drum *c*, and thereby advance it to a position in which the outermost upright card will be thrown out of equilibrium and will drop by gravity to a position below. The drum *c* is immediately caught by the coming around of the other point of the stop-bar N, which now in its turn engages the end of the lever O, and this engagement and position of rest continue until the shaft G above is permitted to move again, so that the inner end of the lever I will play down into the depression of the cam H, thereby elevating the outer end of said lever, which movement will lift the engaging end of the lever O and again release the stop-bar N for a repetition of the movement of the card-drum.

It will be seen that on account of the construction of the actuating-cam H, which moves the lever I alternately to different positions and holds it there rigidly until the next movement, it follows that the tripping-lever O below will likewise be moved alternately to different positions and held there. This necessitates the different lengths of the arms of the stop-bar N, so that when the lever O is in one position it will engage the longer arm of the stop-bar, and when it is in its lower position it will engage the shorter arm of said bar, thereby insuring accuracy upon each movement and effecting, by a single movement, the object desired instead of by a double or return movement reaching but a single result. Thus the card series is operated upon both movements of the mechanism.

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

1. In an advertising-clock, the combination of a series of advertising or display cards, a driving mechanism for operating said series, a tripping and releasing device comprising a rotatable stop-bar and a pivoted lever to detachably engage the same, for permitting the periodic operation of said driving mechanism, a clock mechanism, a cam in the clock mechanism and driving mechanism therefor, a retaining and tripping device operated by the clock mechanism for periodically permitting the operation of the cam, and power-transmitting connections between said cam and the tripping and releasing device of the card-driving mechanism, whereby the latter is operated.

2. In an advertising-clock, the combination of a series of advertising or display cards, a driving mechanism for operating said series, a tripping and releasing device comprising a rotatable stop-bar and a pivoted lever to detachably engage the same, for permitting the periodic operation of said driving mechanism, a clock mechanism, a rotatable shaft and driving mechanism therefor, a toothed wheel on the shaft, and a pinion-pawl operated by the clock mechanism for engaging and releasing the toothed wheel to permit the periodic operation of the shaft, a cam on said shaft, a lever adapted to be vibrated by said cam, and connections from said lever to the tripping and releasing device of the card-driving mechanism, whereby the latter is operated.

3. In an advertising-clock, the combination of a series of advertising or diplay cards, a driving mechanism for operating said series, said mechanism including a rotatable shaft provided with a stop-bar having arms of different lengths, a tripping-lever adapted to successively engage and release the ends of said stop-bar, a clock mechanism, a cam with successive elevations and depressions, and a driving mechanism for rotating the cam, a retaining and tripping device operated by the clock mechanism, for periodically permitting the operation of the cam, a lever adapted to be vibrated and held at the limits of vibration by said cam, and connections between said vibrating lever and the tripping-lever whereby the stop-bar of the card-driving mechanism is engaged and released at each end successively.

4. In an advertising-clock, the combination of a series of advertising or display cards, a driving mechanism for operating said series, said mechanism including a rotatable shaft provided with a stop-bar having arms of different lengths, a tripping-lever adapted to successively engage and release the ends of said bar, a clock mechanism, a rotatable shaft and driving mechanism therefor, a toothed wheel on the shaft and a pinion-pawl operated by the clock mechanism for engaging and releasing the toothed wheel to permit the periodic operation of the shaft, a cam on the shaft formed with successive elevations and depressions, a lever adapted to be vibrated and held at the limits of vibration by said cam and connections between said vibrating lever and the tripping-lever whereby the stop-bar of the card-driving mechanism is engaged and released at each end successively.

In witness whereof I have hereunto set my hand.

RUDOLPH G. WENZEL.

Witnesses:
S. H. NOURSE,
WM. F. BOOTH.