

No. 685,309.

Patented Oct. 29, 1901.

H. D. TREFRY.
WINDOW TIGHTENER AND HOLDER.

(Application filed Oct. 5, 1900.)

(No Model.)

Fig. 1.

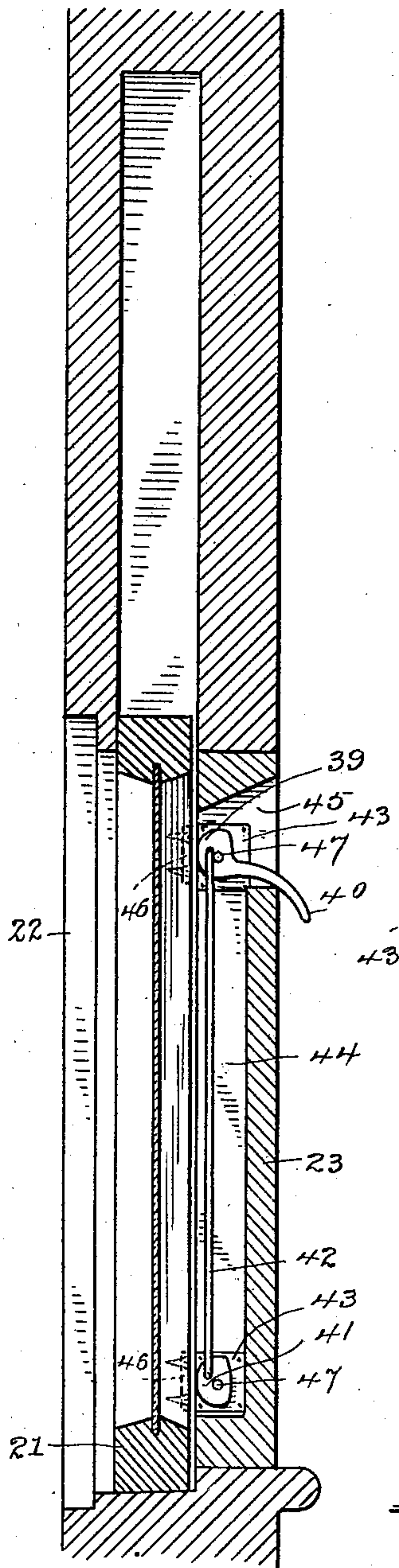
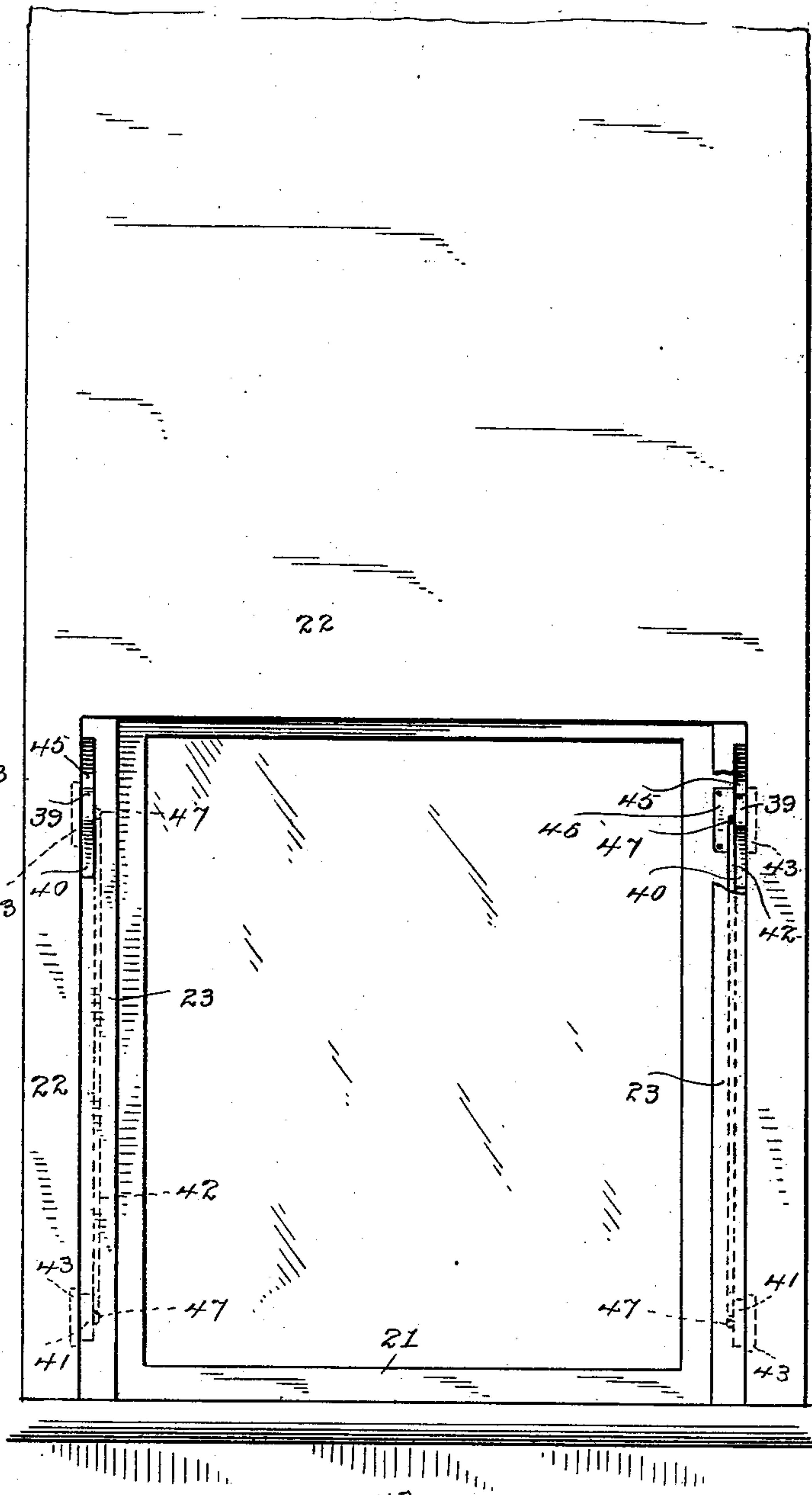


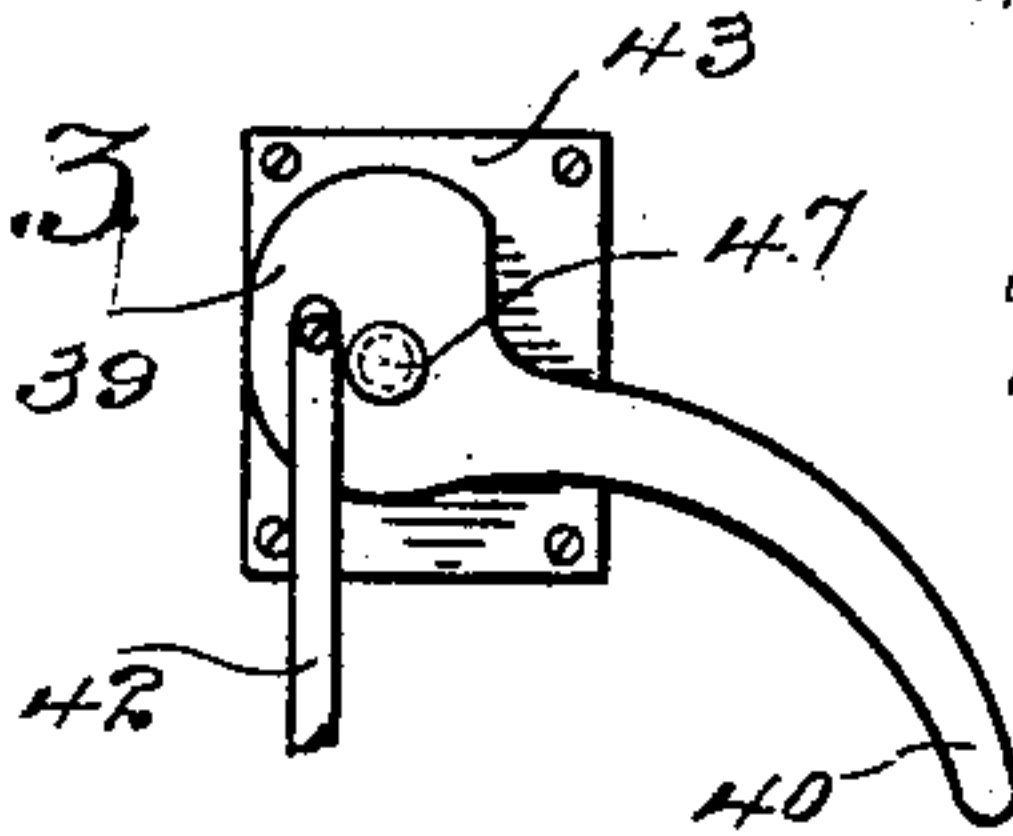
Fig. 2.



WITNESSES.

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Fig. 3.



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WINDOW TIGHTENER AND HOLDER.

SPECIFICATION forming part of Letters Patent No. 685,309, dated October 29, 1901.

Application filed October 5, 1900. Serial No. 32,173. (No model.)

To all whom it may concern:

Be it known that I, HARRY D. TREFRY, a citizen of the United States, residing at Bridgeport, county of Fairfield, State of Connecticut, have invented a new and useful Window Tightener and Holder, of which the following is a specification.

My invention has for its object to provide means equally applicable to old or new windows and which will be wholly concealed from view on both sides of the window, with the exception of two finger-pieces, whereby the upper sash may be pressed against the parting-bead, thereby making said sash practically air-tight and effectually excluding dust and moisture without the use of weather-strips or packing of any kind, without interfering to the slightest extent with either inside or outside screens or blinds, and without adjustment of either inner or outer beads, so that the sash will be left perfectly free and may be raised or lowered without difficulty, the mechanism, moreover, being adapted for use upon single unbalanced sashes—for example, in railway-cars—to lock the sash in any desired position. It will of course be understood that it is required in devices of this character that the parts be simple and inexpensive to make, that the device as a whole be adapted for convenient attachment and without the use of special tools or the requirement of special skill in the operator, that the device require no change whatever in the construction of the sashes or the casings therefor, and, furthermore, that but little cutting away of wood be required and what there is such as may be done with the simplest tools.

In order to accomplish the desired results, I have devised the simple and novel window-tightener which I will now describe, referring to the accompanying drawings, forming part of this specification, and using reference characters to designate the several parts.

Figure 1 is a vertical section of the casing of a window, showing the application of my invention to a single sash, which may be unbalanced, the cams being in the non-tightening position; Fig. 2, a front elevation corresponding therewith; and Fig. 3 is a view of one of the tightening-cams, its plate, and the connecting-rod detached.

I wish it distinctly understood that the special structure of the sashes and the casings is wholly unimportant so far as the principle of my invention is concerned, my invention being applicable to sashes and casings of any ordinary or preferred construction. Without going into the details of construction, I will indicate the sash by 21 and the casing by 22. As the beads are involved in the application of my invention, I will indicate them by specific reference characters, although it should be understood that the shape, size, or design of these beads is of no importance whatever so far as the principle is concerned.

23 denotes the inner bead, and 24 the outer bead.

The tightening devices consist, essentially, of cams 39, which are pivoted to the casings and are provided with finger-pieces 40 for convenience in operation, and cams 41, also pivoted to the casings and connected to cams 39 by means of rods 42. These cams in practice are preferably pivoted to plates 43, which may or may not be recessed into the casings.

In order to avoid cutting away the wood of the casings, plates 43 may be secured to the face of the casings without recessing, and the inner beads may be cut away on their inner faces (not shown) to receive the cams and the connecting-rods, a slot 45 being provided, through which the finger-piece extends. This finger-piece upon each side rail of the lower sash and the slot in the inner bead through which it extends are the only indications of my novel tightening device that are visible upon the inner side of the window.

46 denotes plates which may or may not be let into the faces of the side rails of the lower sash for engagement by the cams. It will be noted that the engaging surfaces of the cams are so located relatively to the pivotal points thereof, which are specifically indicated by 47, as not to hold the sash against upward movement—that is to say, the cams are so shaped that when the finger-pieces are raised the four cams will be pressed evenly against the side rails of the sash and will press it against the parting-bead with any force that may be desired, and if the sash is raised will hold it in a raised position. Any upward movement of the sash, however, will act to release the cams without manipulation of

the finger-piece. This result I accomplish by so shaping the cams that the long radii thereof will be in engagement with the side rails when the finger-pieces are raised, the under
5 sides of the cams curving inward—that is to say, the radii of the cams decrease from the pivotal points downward, so that when the engaging points are raised either by movement of the cams or by raising the sash the
10 cams will release their hold upon the sash and permit it to slide up freely, locking the sash in position again, however, the moment the upward pressure is released, downward movement of the sash or upward movement
15 of the finger-pieces acting to throw the engaging points of the cams downward and to press the sash against the parting-bead or to hold it in place if left in a raised position. It is required, of course, that the connecting-
20 rods be pivoted to the corresponding cams 39 and 41 in such a manner that when a cam 39 is moved by its finger-piece the corresponding cam 41 will move in unison therewith, so that the pressure of the two cams on each
25 side of the sash will be uniform. It will be noted that my novel construction calls for no

marring of either sash or removal of wood therefrom. Plates 46 are merely bearing-plates for the cams and may be omitted, if preferred. The essential feature of the in-
30 vention as a whole is that the sash is pressed outward against the parting-beads at two points in each side rail of each sash.

Having thus described my invention, I claim—
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In a window, the combination with the casing, the lower sash, the parting-beads and inner beads, of cams 39 and 41 pivoted to the casing and a connecting-rod pivoted to the cams upon each side of the casing so that they will
40 move in unison, said cams 39 having finger-pieces for convenience in operation, and the inner beads having cut-away portions which receive the cams and the connecting-rods and slots through which the finger-pieces pass.
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In testimony whereof I affix my signature in presence of two witnesses.

HARRY D. TREFRY.

Witnesses:

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S. W. ATHERTON.