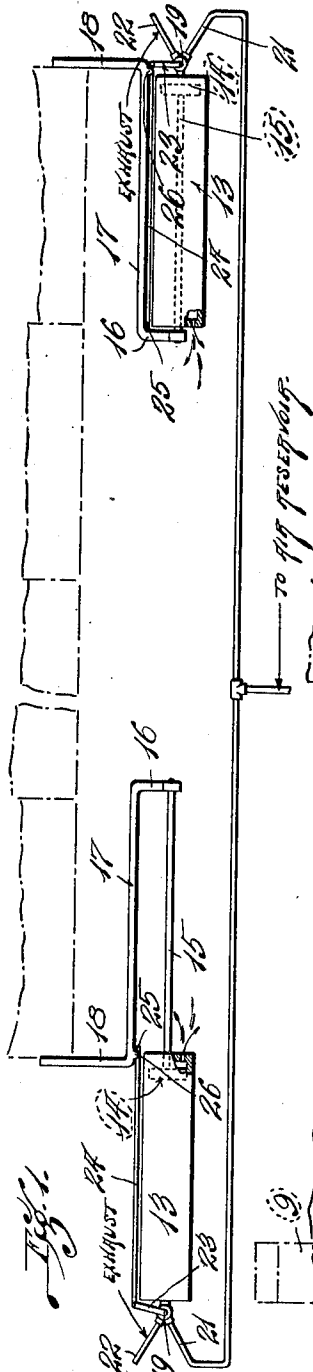


H. BOERNER.
STREET CAR ADVERTISING APPARATUS.
APPLICATION FILED NOV. 29, 1910.

1,061,260.

Patented May 13, 1913.

2 SHEETS—SHEET 1.



WITNESSES:
E. M. Harrington,
Wm. Janus.

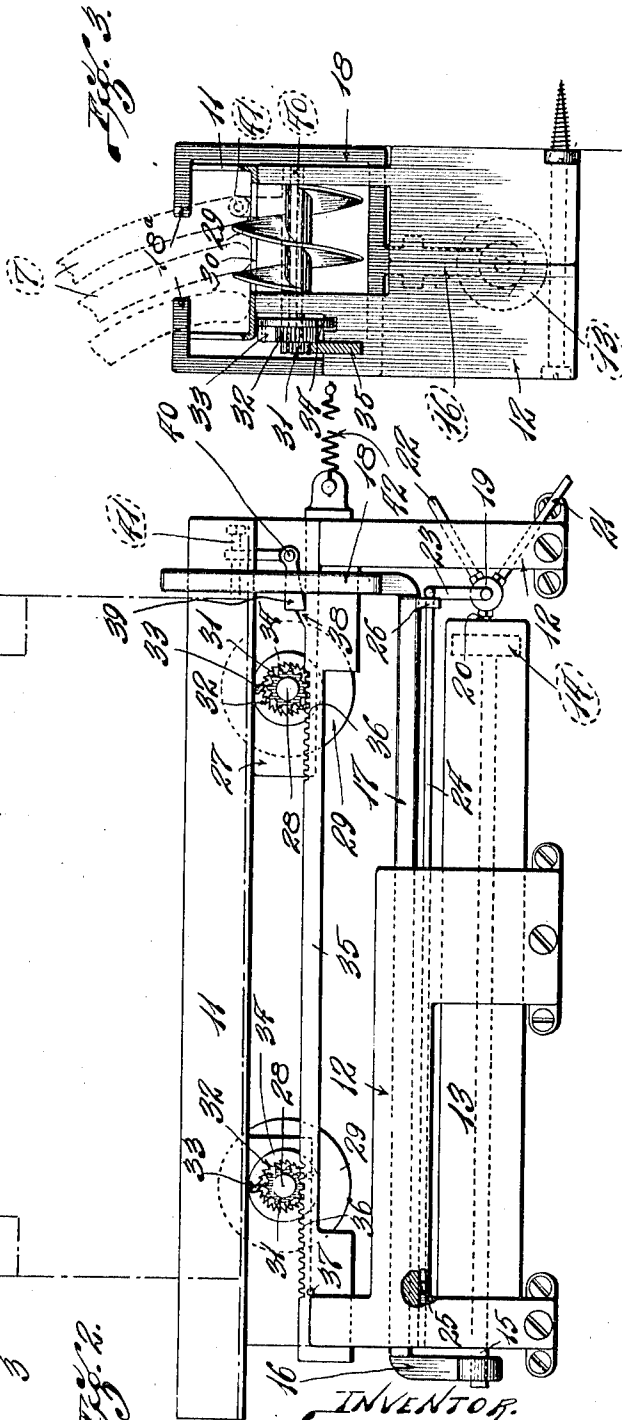


Fig. 2.

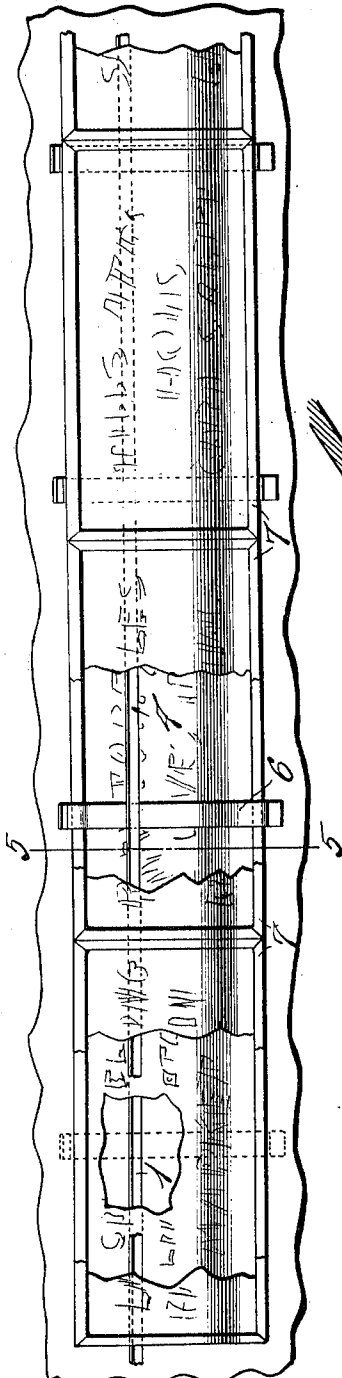
INVENTOR.
H. BOERNER.
BY F. R. Carmichael.

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2 SHEETS-SHEET 2.

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WITNESSES.

E. M. Harrington
Wm. James

Fig. 2.

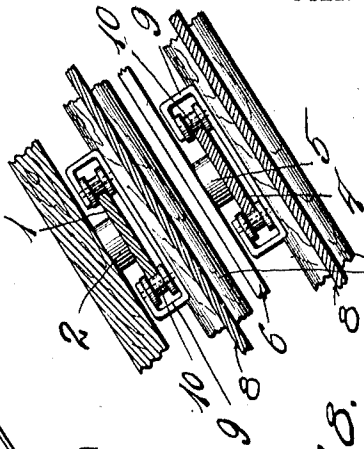


Fig. 3.

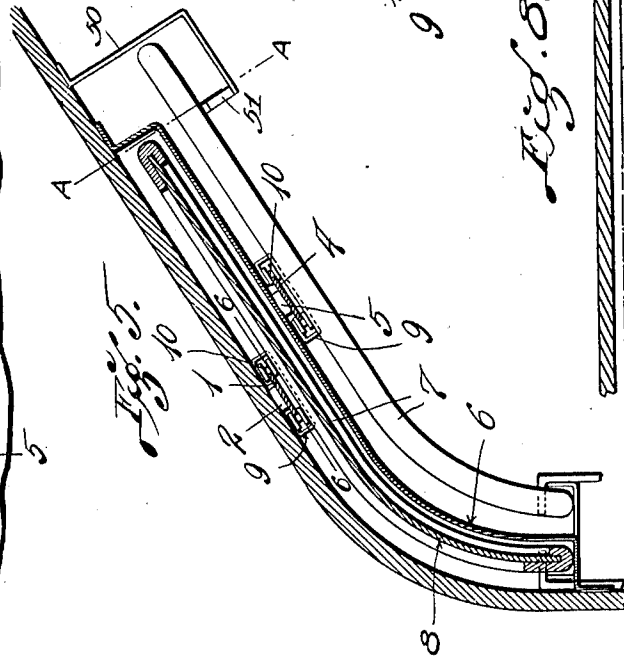


Fig. 4.

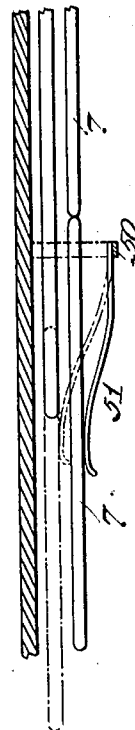
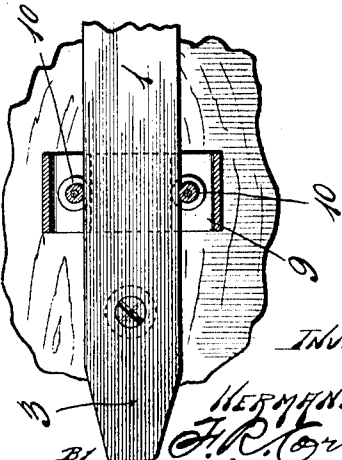


Fig. 5.



INVENTOR.

HERMANN BOERNER.
F. R. Cornwall ATT.

UNITED STATES PATENT OFFICE.

HERMANN BOERNER, OF ST. LOUIS, MISSOURI, ASSIGNOR TO FREDERICK R. CORNWALL, OF ST. LOUIS, MISSOURI.

STREET-CAR ADVERTISING APPARATUS.

1,061,260.

Specification of Letters Patent.

Patented May 13, 1913.

Application filed November 29, 1910. Serial No. 594,685.

To all whom it may concern:

Be it known that I, HERMANN BOERNER, a citizen of the United States, residing at St. Louis, Missouri, have invented a certain new and useful Improvement in Street-Car Advertising Apparatus, of which the following is a full, clear, and exact description, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a diagrammatic view illustrating the relative positions of the card carrying frames of my improved apparatus, and the pneumatic means for imparting movement to said frames. Fig. 2 is a front elevation of the means located at the ends of the apparatus for imparting movement to the rows of card carrying frames and switching the end frames from one row to the other. Fig. 3 is an end elevation of the parts seen in Fig. 2. Fig. 4 is a front elevation of a portion of my improved apparatus with parts broken away for the purpose of clear illustration. Fig. 5 is an enlarged cross sectional view taken approximately on the line 5—5 of Fig. 1. Fig. 6 is an enlarged detail section taken approximately on the line 6—6 of Fig. 5. Fig. 7 is an enlarged detail section illustrating the manner of mounting the card carrying frames upon the supporting rails or tracks.

My invention relates generally to an advertising apparatus, and more particularly to an advertising apparatus intended for use in street cars and like passenger vehicles, and which apparatus is arranged immediately above the windows in the sides of the car or vehicle, and comprises a double row of card carrying frames, which travel from one end of the car to the other.

The principal objects of my invention are, first; to provide a series of moving frames which, when in operation, readily attract attention, thereby enhancing the advertising value of the apparatus, second; to provide simple tracks or rails upon which the frames are supported and travel, third; to provide pneumatically operated means at each end of the apparatus for imparting movement to the rows of frames, and fourth; to provide simple means at the ends of the apparatus for shifting the card carrying frames from one row to the other.

To the above purposes my invention consists in certain novel features of construction and arrangement of parts hereinafter more fully described and claimed.

Referring by numerals to the accompanying drawings 1 designates a rail preferably in the form of a narrow metal bar, which forms the track rail that supports the rear row of card carrying frames, and this rail 1 is mounted on studs 2, which are seated in and project a short distance away from the face of the wall of the car immediately above the windows in the sides thereof. This rail is continuous and extends from one end of the car to the other with the exception of a space between each end of the rail, and the end walls of the car, which space is slightly greater than the length of one of the card carrying frames. The left hand end of this rail 1 is tapered as designated by 3 in order that the grooved wheels carried by the card carrying frames, and hereinafter more fully described, will readily travel onto the rail 1 as the frames are shifted from the front row to the rear row at the left hand end of the apparatus.

4 designates a metal bar identical with the bar 1, and which forms the rail or track for supporting the front row of card carrying frames. This front rail is mounted on studs 5 projecting from vertically disposed straps 6 arranged at suitable distances apart and with their ends attached to the wall of the car above the car windows. These straps 6 are spaced away from the wall of the car so that the front rail 4 occupies a position a short distance in front of the rail 1. The right hand end of the rail 4 is tapered in a manner similar to the tapering of the left hand end of the rail 1, in order that the grooved wheels on the card carrying frames will readily ride onto the right hand end of said rail 4, as the card carrying frames are transferred from the rear row to the front row at the right hand end of the apparatus.

7 designates the card carrying frames which may be constructed either of wood or metal and removably positioned in said frames are rectangular sections 8 of card board or sheet metal bearing on their faces advertising matter. Mounted on the rear side of each frame and at the ends thereof are brackets 9 and journaled in each bracket is a pair of small grooved wheels 10 adapted

ed to ride directly upon the top and bottom edges of the rails 1 and 4. Arranged at each end of the apparatus is a trough 11 supported from the wall of the car and positioned so as to receive the lower portions of the card carrying frames 7. Arranged beneath each trough is the card moving and shifting means, and it will be understood that this moving and shifting means is the same at both ends of the apparatus with the exception that one is the reverse of the other.

In Figs. 2 and 3 I have illustrated the moving and shifting means, which is located at the right hand of the apparatus, and this will now be described: Supported from the wall of the car immediately beneath the trough 11 is a bracket 12 in the lower portion of which is arranged a horizontally disposed cylinder 13. Operating in this cylinder is a piston 14 carrying a piston rod 15 which projects through the left hand end of said cylinder and carried by the projecting end of said piston rod is the downturned end 16 of a bar 17, which slides longitudinally through a suitable bearings formed in the upper portion of the bracket 12. The right hand end of this bar 17 is bifurcated as designated by 18 and the arms of the fork at this bifurcated end extend upward at the sides of the trough 11, and the upper ends of said arms are provided with inwardly projecting fingers 18^a adapted to engage against the ends of the frames 7 when the same are moved into the right hand trough 11. Located immediately adjacent the right hand end of the cylinder 13 is a three-way valve 19, and leading from the housing thereof into the right hand end of the cylinder 13, is a short tubular connection 20. Leading from a suitable source of compressed air supply into the three-way valve housing is a pipe 21 and leading from said housing is an exhaust pipe 22. 23 designates the valve operating lever, the end of which is pivotally connected to a longitudinally disposed rod 24 located between the cylinder 13 and the bar 17, and which rod slides freely through a suitable bearing formed in the upper portion of the bracket 12. The left hand end of this rod 24, is bent laterally as designated by 25, and said laterally bent end is adapted to be engaged by a lug or finger 26, depending from the right hand end of the bar 17, when the latter has traveled to its left hand limit of movement. This depending lug or finger also engages against the upper end of the valve operating lever 23, when the bar 17 moves to its right hand limit of movement.

The mechanism just described provides simple means for automatically opening and closing the valve 19 to control the admission of air to the cylinder 13, and thereby move the bar 17 toward the left hand which move-

ment is essential for moving the front row of cards from the right hand end of the apparatus toward the left hand end.

The automatic means for shifting the frames from one row to the other at the ends of the apparatus will now be described: Bearings 27 are formed on the upper portion of the bracket 12 immediately beneath the trough 11, and journaled in said bearings adjacent the ends of the trough are horizontally disposed shafts 28, carrying blades 29 in the form of spiral conveyers. The upper portions of these conveyers extend through openings 30 formed in the bottom of the trough 11. Loosely mounted on the forward ends of the shafts 28 are pinions 31, and formed integral with said pinions are small ratchet wheels 32. The teeth of these ratchet wheels are adapted to be engaged by pawls 33 carried by disks 34, which latter are fixed on the shafts 28. Arranged to slide freely through suitable bearings formed in the upper portion of the bracket 12 is a bar 35 provided on its upper edge with two sets of rack teeth 36 with which the teeth of the pinions 31 engage. Projecting from the front face of this bar 35 adjacent its left hand end is a pin 37, which is in the path of travel of the front one of the arms 18. Formed on top of the bar 35 adjacent its right hand end is a lug 38 and adapted to engage behind this lug is the weighted arm 39 of a bell crank pawl fulcrumed at 40, and the vertical arm of which pawl carries a horizontally disposed screw 41, which is directly in the path of travel of the rear row of frames. A retractile coil spring 42 is connected to the right hand end of the bar 35, and the outer end of this spring is connected to a fixed part of the car.

The operation of my improved street car advertising apparatus is as follows: The mechanism as shown and described is adapted for moving the entire rear row of cards toward the right hand and the front row of cards toward the left hand, and thus it is necessary to successively shift the cards from the right hand end of the rear row forward into the front row, and shift the left hand one of the front row of cards into the rear row at the left hand end of the apparatus. Assuming that the parts of the shifting and moving apparatus are in the positions shown in Figs. 2 and 3, and that the end of the right hand one of the rear row of cards is in engagement with the end of the screw 41, further movement toward the right hand by this card will rock the bell crank carrying the screw 41, upon the fulcrum 40, thereby disengaging the end of the arm 39 from the lug 38, thus unlocking the bar 35. The retractile spring 42 pulls the bar 35 toward the right hand and in so doing imparts rotary motion to the pinions 31 by reason of their engage-

ment with the rack teeth 36. The ratchet wheels 32 rotate with the pinions 31, and the pawls 33 engaging the teeth of said ratchet wheels are likewise rotated, and thus rotary motion is transmitted to the disks 34, and shafts 28, carrying the spiral conveyers 29. The lower edge of the right hand frame of the rear row occupies a position within the trough 11, and between the portions of the spiral conveyers 29 that project upward through the openings 30, and as said spiral conveyers are rotated as just described, the engaged frame is shifted to the front side of the trough 11 in position to be engaged by the front one of the fingers 18^a, and in position so that the grooved wheels 10 on the rear side of this frame are in alinement with the right hand end of the rail 4. Simultaneous with the engagement of the frame against the screw 41 the depending finger 26 engages the upper end of the lever 23, thereby swinging the upper end of said lever toward the right hand, thus opening the three-way valve 19 and permitting compressed air to pass from the pipe 21 through the connection 20 into the cylinder 13 in front of the piston therein. As soon as the compressed air is thus permitted to enter the cylinder, the piston 14 therein is moved through said cylinder toward the left hand end thereof, thereby moving the bar 17 toward the left hand, and consequently causing the front one of the fingers 18^a to engage against the frame, which can now be designated as the right hand frame of the front row, and this frame is moved toward the left hand with the grooved wheels 10 traveling onto the right hand end of the rail 4. The left hand end of this right hand frame bears against the end of the fixed adjacent frame, and as the piston continues to move toward the left hand of the cylinder 13, by reason of the pressure of air admitted to said cylinder the entire front row of frames are moved toward the left hand. Thus the left hand one of the front row of cards is moved into the front portion of the left hand trough 11, and the front portion of the right hand trough 11 is cleared for the succeeding card shifted forward from the right hand end of the rear row.

The moving and shifting means at the left hand end of the apparatus are similar in construction to the moving and shifting means just described, with the exception that the spiral conveyers are arranged to move a frame from the front row to the rear row, the body of the frame being pressed rearward by any obvious means or by a form as shown in Figs. 8 and 9 of the drawings in which the spring 51, which is carried by the support 50 attached to the car wall, operates to engage the upper side of the frame to be shifted and to force it into the rear row, and the turning on of the air in the left

hand cylinder engages the left hand frame of the rear row and moves the same, and the entire rear row of cards toward the right hand. Just prior to the time the bar 17 reaches its limit of movement toward the left hand the depending finger 26 engages the laterally bent end 25 of the rod 24, thereby shifting said rod toward the left hand, and consequently returning the lever 23 to an upright position, thereby closing the valve 19. Such action cuts off the supply of air to the cylinder 13, and opens the exhaust through the connection 20 into the exhaust pipe 22, thus the piston rod, bar 17, arms 18 and fingers 18^a are moved toward the left hand to their limit of movement, and all of these parts are moved toward the right hand by the engagement of the right hand one of the rear row of cards against the rear finger 18^a, during the movement of said rear row of cards toward the left hand. After the bar 35 has been pulled to the right under the influence of the retractile spring 42, as hereinbefore described, said bar is restored to its locked position by the engagement of the front one of the arms 18 against the pin 37, projecting from the front side of said bar 35, which movement takes place during the travel of said arm 18 toward the left hand, and as said bar is thus moved the pinions 31 and ratchet wheels 32 will be rotated, but such rotary movement will not be imparted to the shafts 28 carrying the spiral conveyers 29, for the reason that the pawls 33 will pass idly over the teeth of the ratchet wheels 32. When the bar 35 has been moved to full stroke toward the left the weighted arm 39 of the pawl will reengage behind the lug 38 thereby maintaining said bar 35 against movement in a reverse direction. The movements just described take place in regular sequence, and as a result the two rows of card carrying frames are intermittently moved in opposite directions.

An advertising apparatus of my improved construction is particularly intended for use on street cars and like vehicles although the apparatus can be advantageously and profitably employed in waiting rooms, show windows, hotel lobbies, or wherever persons congregate.

It will be readily understood that minor changes in the form and construction of the various parts of my improved apparatus can be readily made and substituted for those herein shown and described, without departing from the spirit of my invention, the scope of which is set forth in the appended claims.

I claim:

1. In an apparatus of the class described, a support, a series of independent and unattached card carrying frames arranged for moving upon the support, pneumatically operated means for moving the frames upon

the support, and means actuated by the frames for throwing the pneumatically operated means into operation.

2. In an apparatus of the class described, 5 a pair of rails, a series of independent and unattached card carrying frames arranged for movement on said rails, pneumatically operated means at the ends of the rails for imparting intermittent movement to the 10 frames upon the rails, and means actuated by the frames for throwing the pneumatically operated means into operation.

3. In a device of the class described, including frames mounted upon a rail, a fluid 15 actuated motor for shifting said frames longitudinally on said rail, comprising a pressure cylinder, a piston in said pressure cylinder, a rod mounted on said piston, and a bifurcated member attached to said rod and 20 positioned to engage one of said frames.

4. In a device of the class described, including frames adapted to traverse adjacently disposed rails, a fluid actuated motor 25 having a reciprocating member adapted to transmit motion to said frames, and a means actuated from said reciprocating member for shifting the frames from one rail to the other.

5. In a device of the class described, a 30 support, a rail affixed to said support, a bracket affixed to said support and extending in front of said rail, a second rail affixed to said bracket, a series of separate signs supported on said first rail, a series 35 of separate signs supported on said second rail, and means for transferring said signs from one of said rails to the other.

6. In a device of the class described, a 40 support, a rail affixed to said support, a bracket affixed to said support and extending in front of said rail, a second rail supported by said bracket, a series of separate signs, supporting devices carried on the back 45 of said signs between their top and bottom edges, and adapted to engage either of said rails.

7. In a device of the class described, a 50 support, a rail extending forwardly from said support, separate signs movably mounted on said rail, a bracket projecting forwardly from said support in front of said signs, a second rail mounted on said bracket and extending forwardly therefrom, a sec-

ond series of signs movably carried on said 55 second rail, and means for moving said signs from one of said rails to the other.

8. In a device of the class described, a support, a series of separate signs arranged for movement upon said support, operating 60 means for moving said signs upon said support, and means actuated by the signs for throwing the operating means into operation.

9. In a device of the class described, a pair of supports, signs mounted on said 65 supports, means for shifting said signs from one support to the other, and means actuated by the signs for throwing said shifting means into operation.

10. In a device of the class described, a 70 pair of supports, signs carried by said supports, means for moving said signs along said supports, a toothed rack, and a rotary member actuated by said toothed rack and adapted to shift said signs from one support 75 to the other.

11. In a device of the class described, a support, a single rail mounted on said support, separate signs mounted exclusively 80 upon said rail in front of the same, a second support in front of said signs, a second single rail mounted on said second support, a second series of separate signs mounted entirely upon said second rail and lying in 85 front of the same, and means for moving said signs from one of said rails to the other.

12. An advertising device for cars comprising the combination of a single rail supported on the car, a plurality of rigid, 90 unattached signs disposed in front of said rail and supported thereon, a support, a second single rail lying in front of said signs and attached to said support, a plurality of rigid, unattached signs disposed in front of 95 said second rail and supported thereon, means for moving said signs longitudinally on said rails, and means for moving said signs from one to the other of said rails.

In testimony whereof I hereunto affix my 100 signature in the presence of two witnesses, this 23d day of November, 1910.

HERMANN BOERNER.

Witnesses:

M. P. SMITH,

E. M. HARRINGTON.