No. 834,281. PATENTED OCT. 30, 1906.

G. M. ERVIN.

TONGUE SWITCH.

APPLICATION FILED JUNE 6, 1905.

2 SHEETS—SHEET 1.

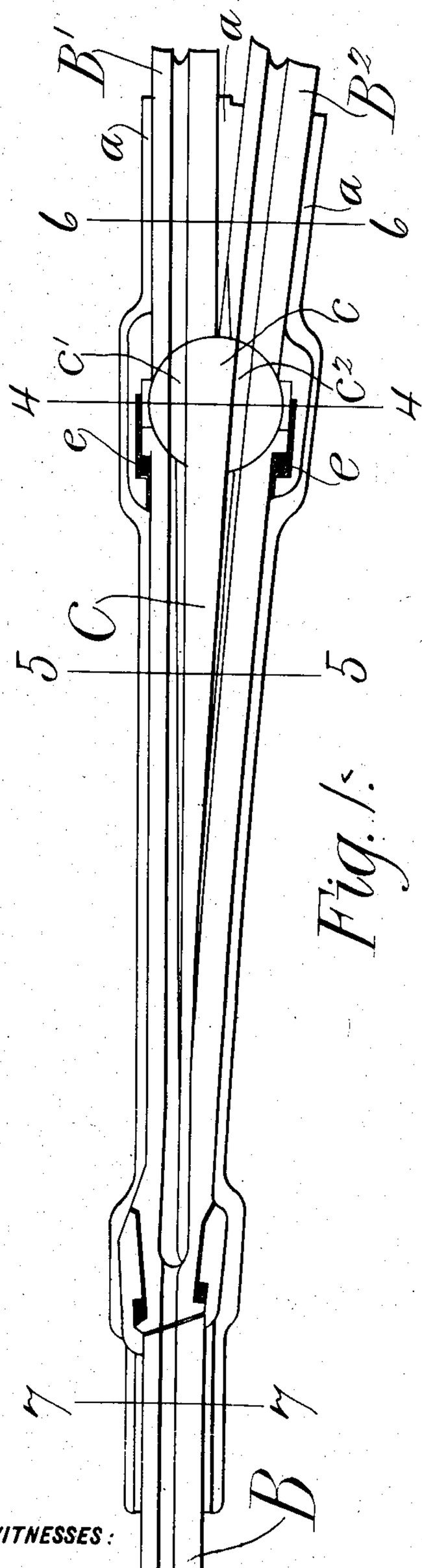

Fig. 1.

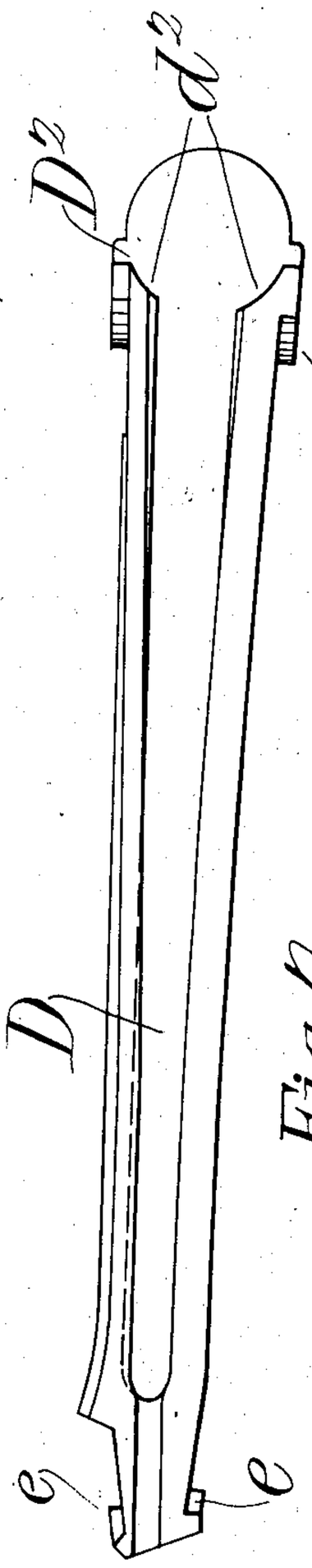

Fig. 2.

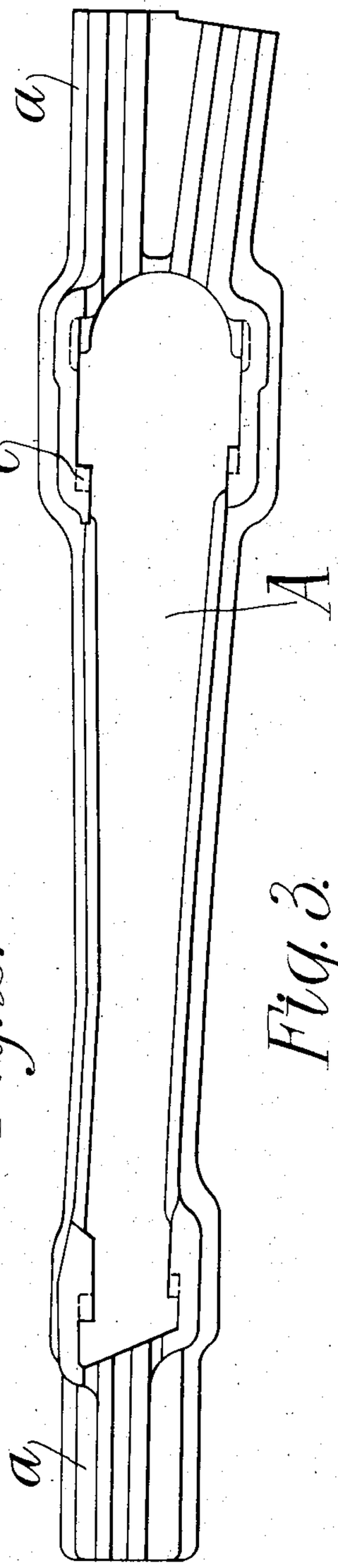

Fig. 3.

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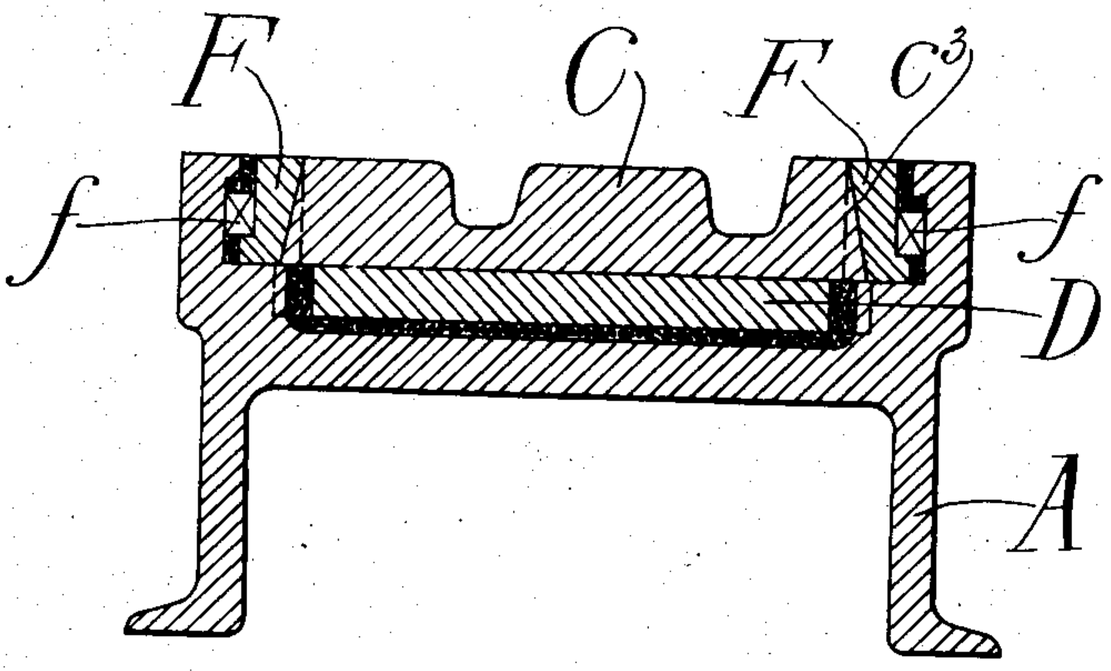

Fig. 4.

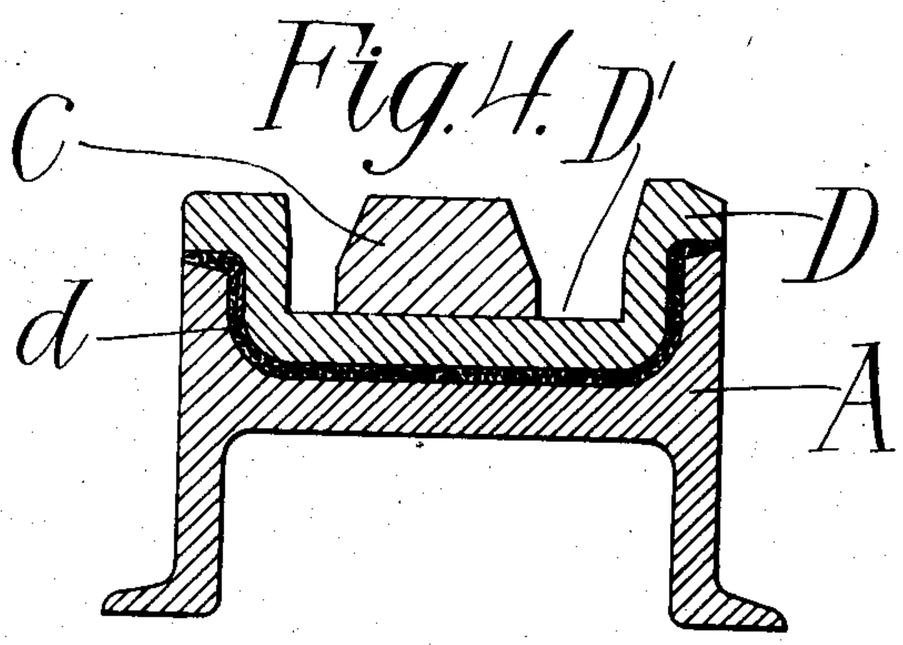

Fig. 5.

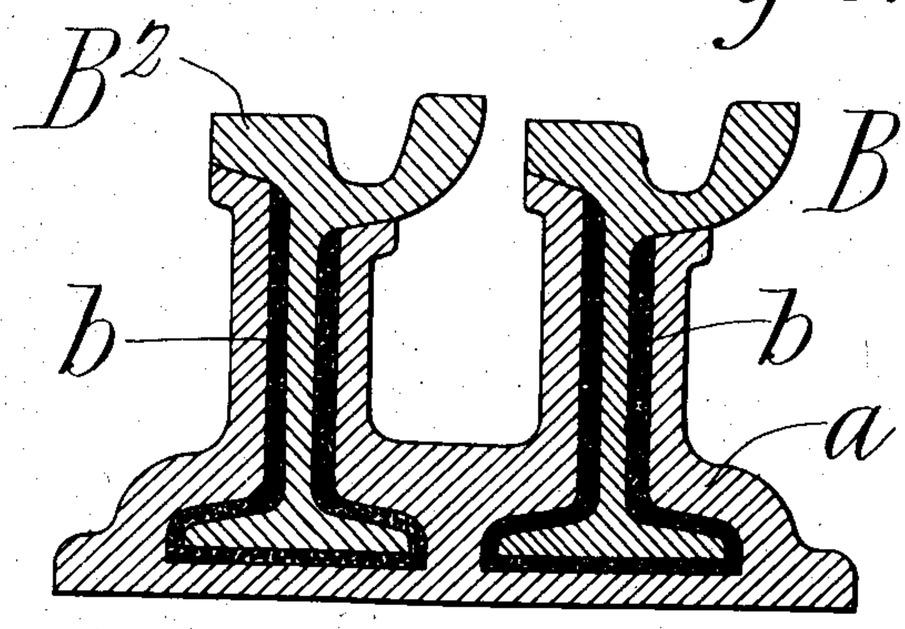

Fig. 6.

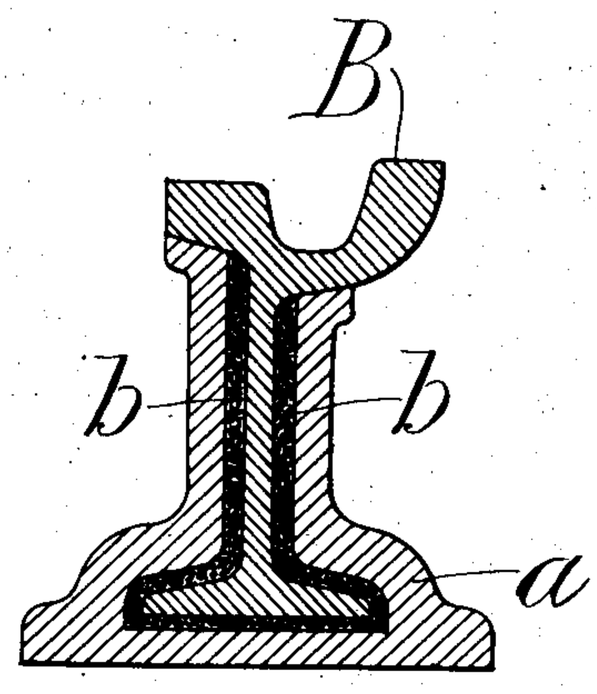

Fig. 7.

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UNITED STATES PATENT OFFICE

GEORGE M. ERVIN, OF JOHNSTOWN, PENNSYLVANIA, ASSIGNOR TO THE LORAIN STEEL COMPANY, A CORPORATION OF PENNSYLVANIA.

TONGUE-SWITCH.

No. 834,281. Specification of Letters Patent. Patented Oct. 30, 1906.

Application filed June 6, 1905. Serial No. 264,025.

To all whom it may concern:

Be it known that I, GEORGE M. ERVIN, of Johnstown, in the county of Cambria and State of Pennsylvania, have invented a new and useful Improvement in Tongue-Switches, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention has relation to certain new and useful improvements in tongue-switches, and is designed to provide a switch in which the usual tongue pin or pintle is dispensed with, in which the tongue has an enlarged bearing at its heel end and is prevented from kicking or throwing under the action of passing car-wheels, and which is constructed throughout in a manner to withstand the conditions of modern traffic.

With these objects in view my invention consists in the novel construction, arrangement, and combination of parts, all substantially as hereinafter described, and pointed out in the appended claims, reference being had to the accompanying drawings, in which—

Figure 1 is a plan view of a tongue-switch embodying my invention; Fig. 2, a plan view of the hard-metal surface or bed-plate removed; Fig. 3, a plan view of the body portion of the structure; and Figs. 4, 5, 6, and 7, sections taken, respectively, on the lines 4 4, 5 5, 6 6, and 7 7 of Fig. 1.

The letter A designates the body portion of the structure, preferably an integral casting of iron or steel, and B B′ B² the connecting rail members. I have shown these members as seated in pocketed arms *a* of the casting A, with fillings *b* of spelter, as described and claimed in my Patent No. 784,735, dated March 14, 1905. While I prefer such construction, it is, however, independent of my present invention, and the said rail members may be secured to said casting in any suitable manner or they may be cast integral therewith.

C designates the movable tongue, which is in general of the form shown in the patent to Kress, No. 661,540, of November 13, 1900, in that it is circularly enlarged at its heel end *c*, such enlargement having the flange-grooves *c′ c²* for both tracks formed in its surface. I have, however, dispensed with the pin or pintle employed in the Kress construction and have provided novel means whereby the tongue is bedded and held to its seat. To this end I provide the casting A with a bed or surface plate D of hard metal, which extends the entire length of the tongue. This plate D fits in a pocket of the casting A, substantially as shown in Figs. 4 and 5, in which it is secured in any suitable manner, with a bedding *d* of spelter or similar material. I have shown it and the casting A provided with coacting key-seats *e* to receive suitable securing-keys. In this plate D is the pocket D′ for the tongue C, terminating at the heel end in a flat circular portion D², which forms the bearing-surface for the enlarged heel portion *c* of the tongue. The opposite sides of said portion *c* are beveled, as shown at *c*³ in Fig. 4, and seated against these beveled portions are retaining-keys F, which are secured in place by wedges *f*, Fig. 4, or in any other suitable manner. This fastening, while tight enough to securely hold the tongue to its seat, does not prevent the slight pivotal movement which occurs when the tongue is thrown from one of its positions to the other. Owing to the provision of the beveled portions *c*³ and the corresponding form of the keys F the tongue cannot lift, and the customary holding-down attachments for the tongue are dispensed with. By cutting out the filling *g* of soft metal the wedges *f* can be driven out, and the tongue can then be readily removed.

As will be noted, all this can be done from the surface of the switch and without disturbing the adjacent pavement.

An important feature of my invention is that it entirely dispenses with the use of the usual tongue pin or pintle. It is difficult to provide a satisfactory bearing for these pins or pintles, especially when the tongue, the pin, or any portion of the bed are of hard metal, such as manganese steel, which cannot be machined, and any inaccuracy in fitting these parts increases the wear due to the severe grinding and pounding which they receive in service, so that looseness and difficulty develops. In the present switch the tongue has broad flat bearing portions which can be accurately surfaced and fitted. Furthermore, lateral thrusts, instead of being taken by a pin and its bearing, are received by the adjacent lateral portions of the structure. The weight of the car-wheel being upon the tongue in passing the heel on both

tracks, the tongue is prevented from throwing or kicking under the wheels. The tongue may also be made shorter and stiffer than is possible in the ordinary switch, especially in long-radius switches, where it is usually necessary to elongate the tongue in order to get sufficient width at its heel end to carry the pin.

The walls of the seat for the enlargement *c*, formed in part by the curved walls d^2 of the surface-plate D and in part by the ends of the rail members B′ B^2, can be readily milled or ground to form a good fit with the edges of said enlargement, whereby its bearing-surface is increased.

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

1. In a pinless tongue-switch, the combination with a tongue having a circularly-enlarged heel portion formed with flangeways for both tracks, of retaining devices engaging said enlarged portion to hold it to its seat, said devices being releasable from the surface of the switch.

2. In a pinless tongue-switch, the combination with a tongue having a circular enlarged heel portion provided with an unbroken bottom bearing-surface, and with flangeways for both tracks in its upper surface, of holding-down means for said tongue, engaging the enlarged heel portion only.

3. In a pinless tongue-switch, the combination with a tongue having an enlarged circular bearing portion at its heel end, said portion being formed with beveled sides, of retaining-keys fitting the said beveled sides and having a holding-down action thereon, and means for securing the said keys.

4. In a pinless tongue-switch, the combination of a body portion having curved bearing-walls for the rear portion of the heel end of the tongue-switch, of a surface or bed plate removably secured to the body portion and formed with a pocket for the tongue which terminates in a broad flat bearing-surface at the heel end and is formed with curved bearing-walls for the front portion of the heel of the tongue.

5. In a pinless tongue-switch of the character described, the combination with the removable bed or surface plate having the approximately circular flat bearing-surface at the heel end, and the curved bearing-walls at the front side of said bearing-surface, of the tongue having a circular bearing portion at its heel end adapted to said bearing-surface and curved walls.

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

GEO. M. ERVIN.

Witnesses:

LORETTO M. O'CONNELL,

H. W. SMITH.