

J. A. FIELD.
RADIATOR NIPPLE.
APPLICATION FILED NOV. 7, 1907.

908,985.

Patented Jan. 5, 1909.

Fig. 1.

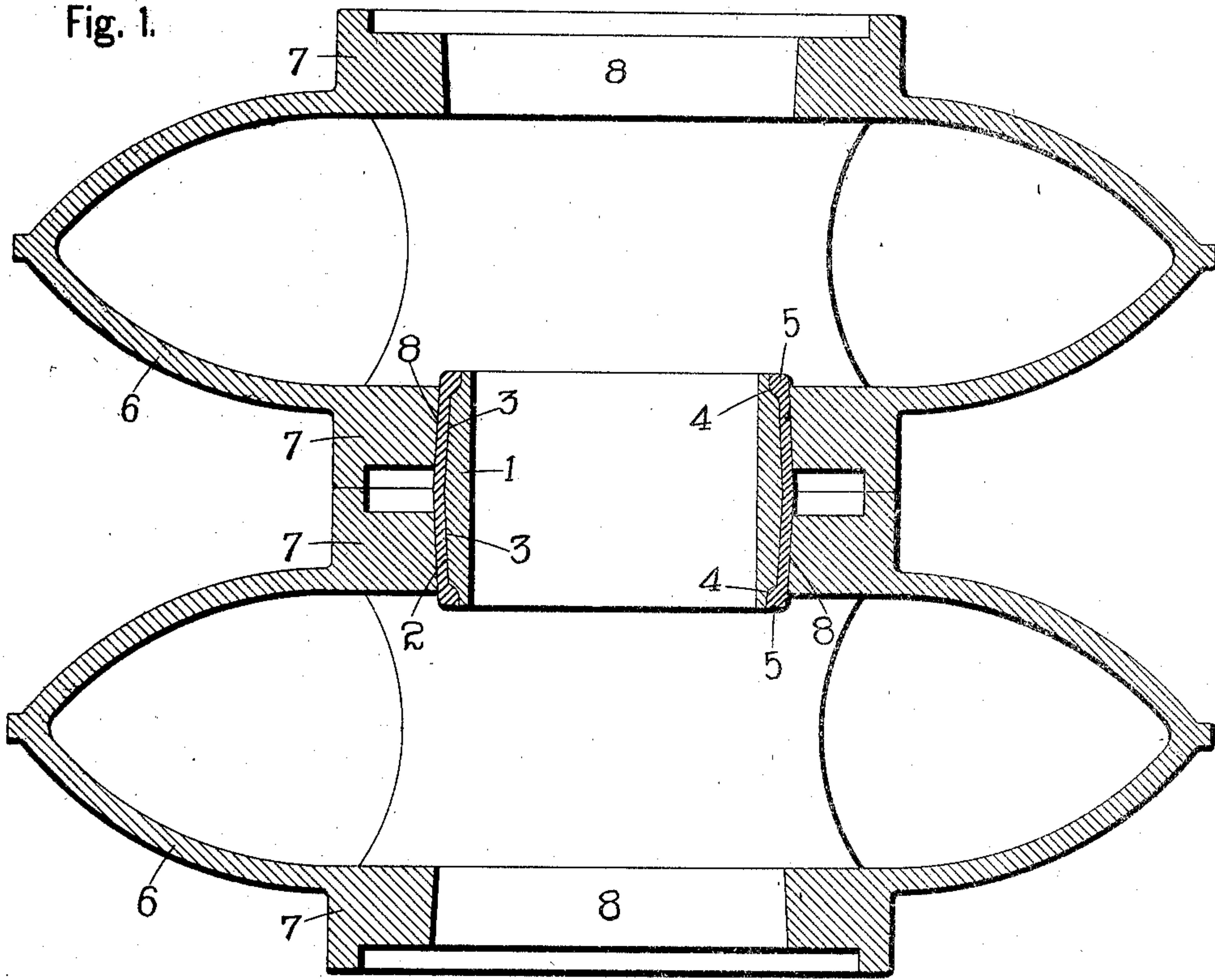


Fig. 2.

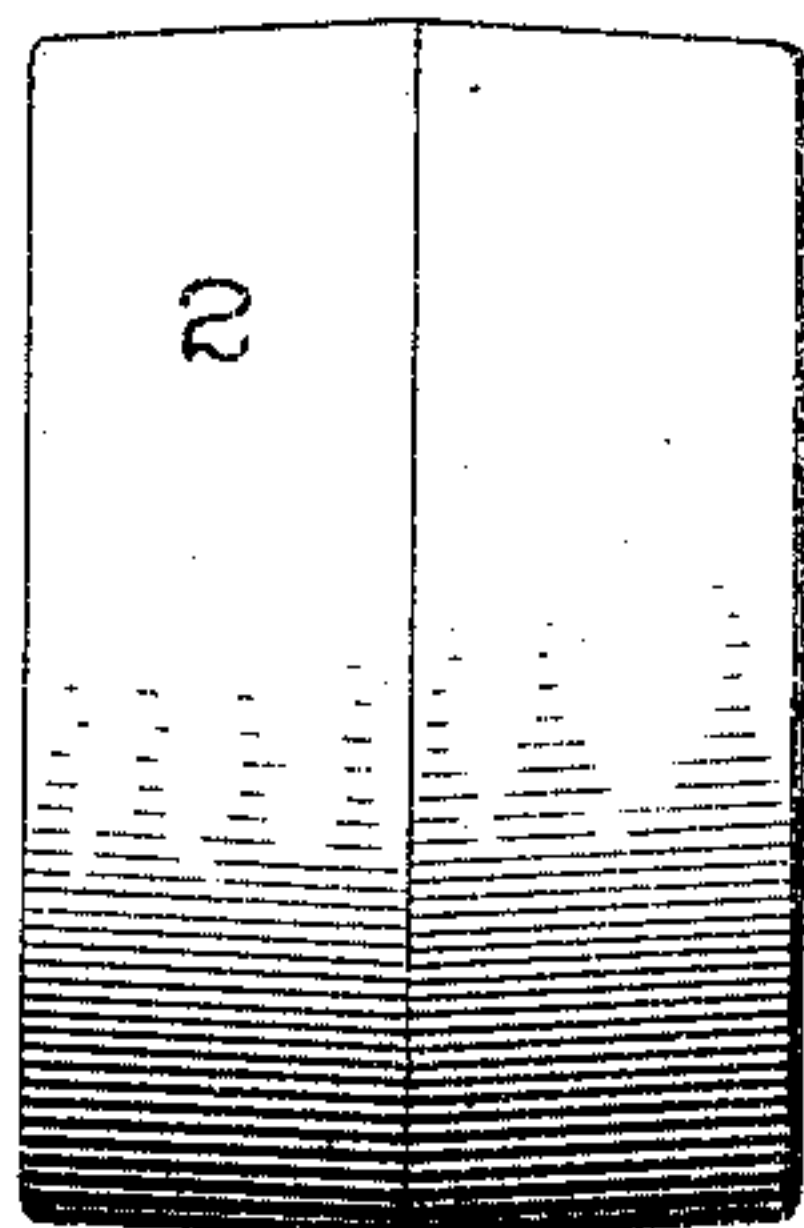


Fig. 3.

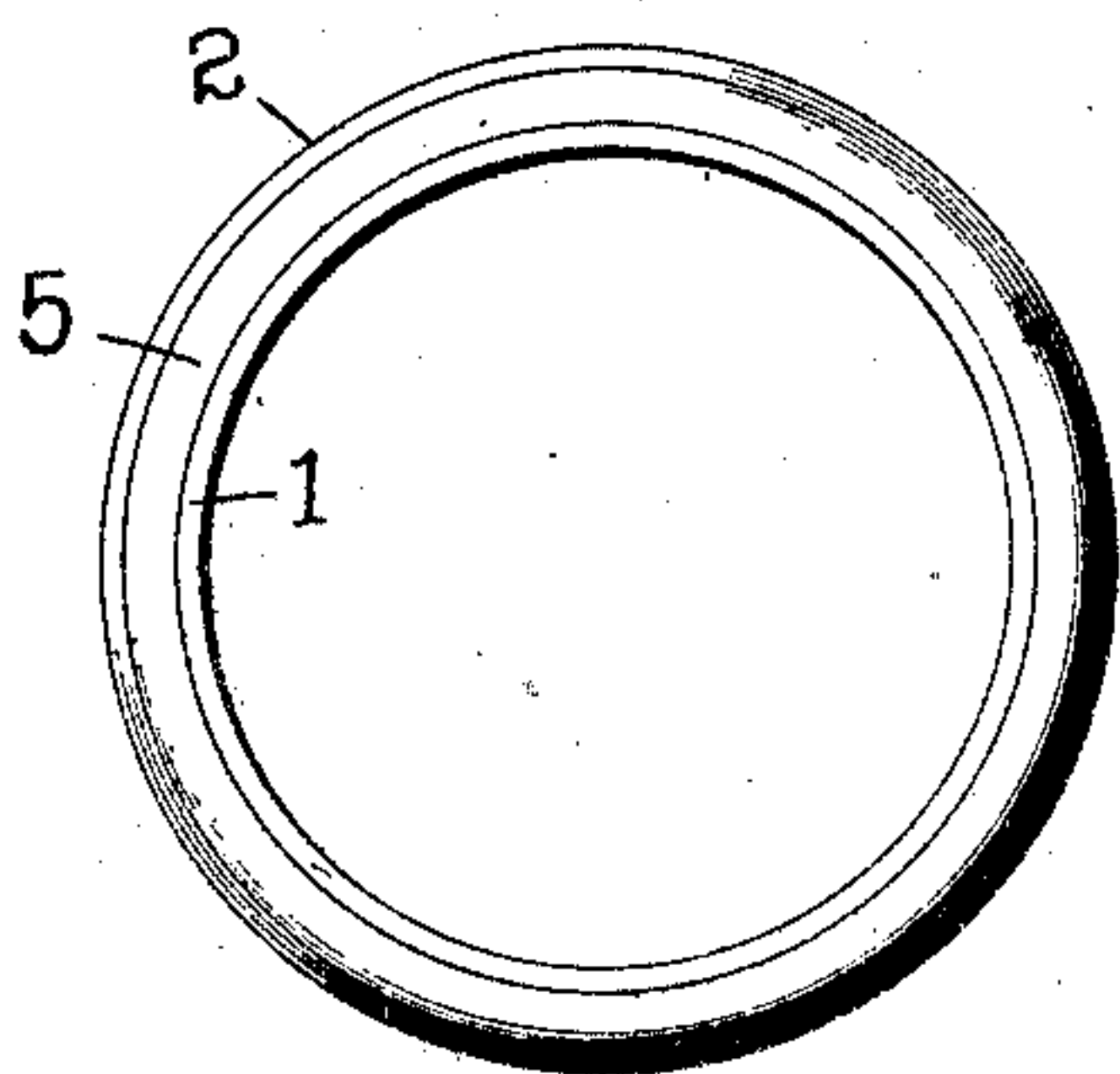


Fig. 5.

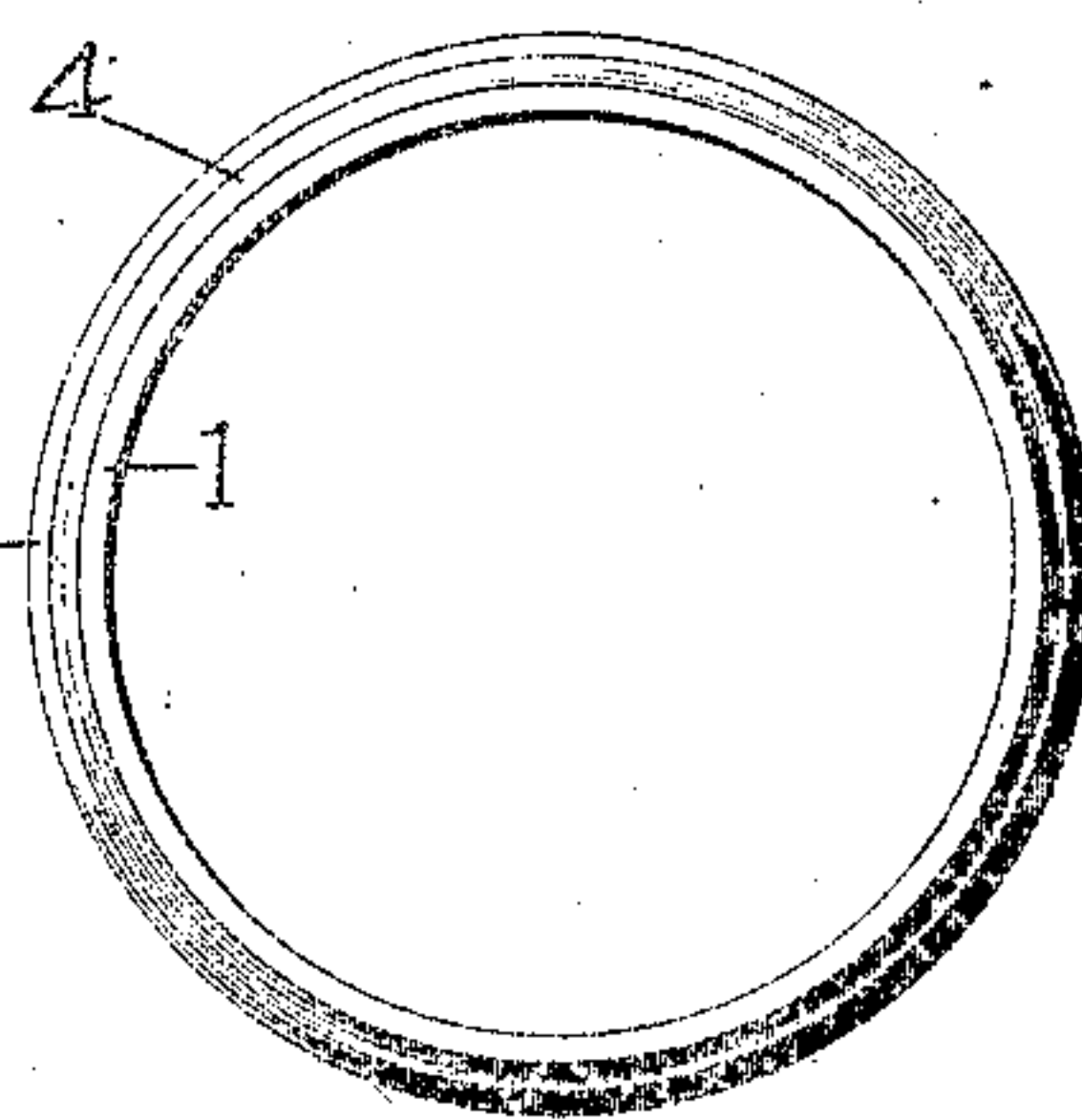
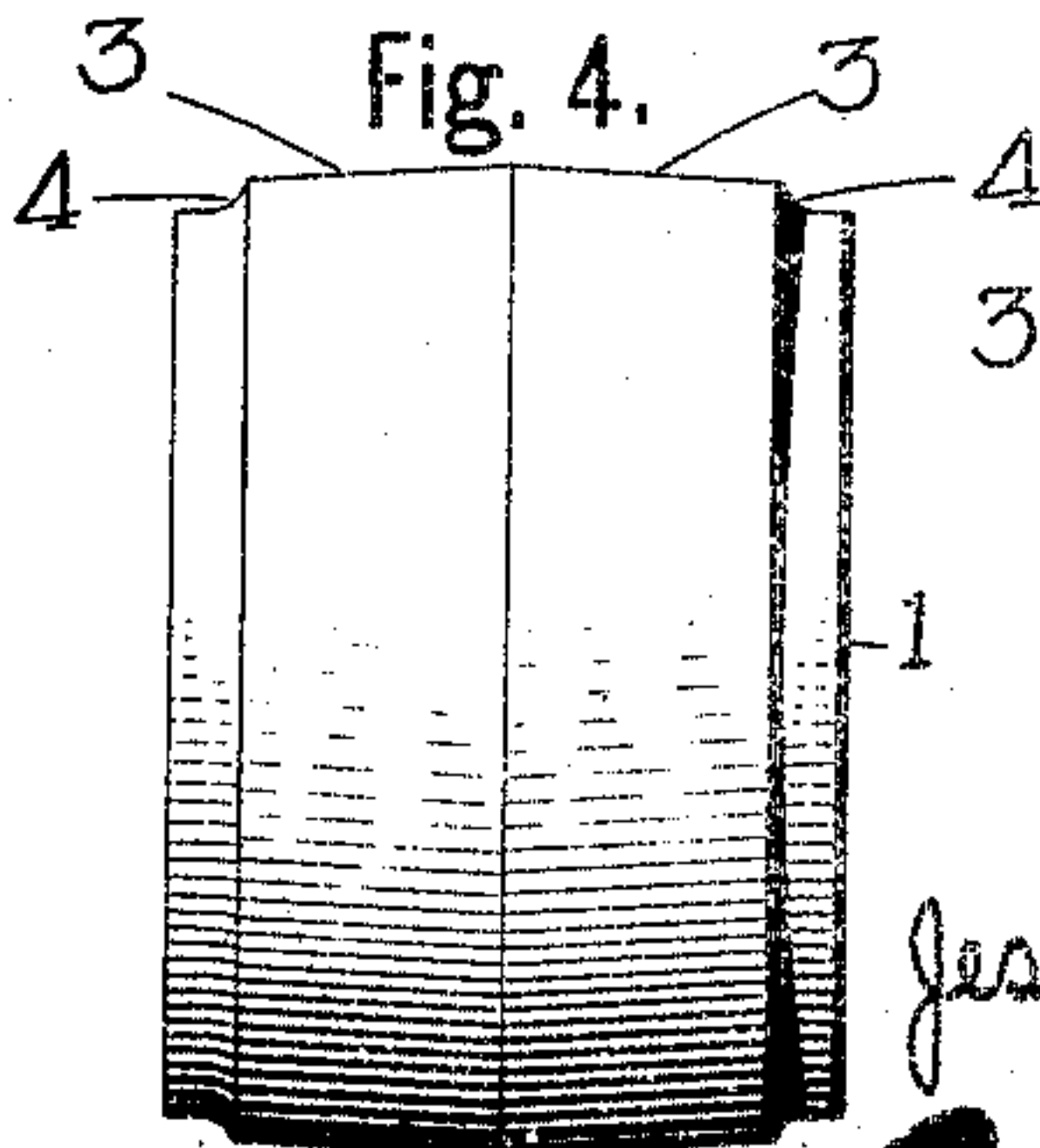


Fig. 4.



Witnesses.

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RADIATOR-NIPPLE.

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To all whom it may concern:

Be it known that I, JESSE A. FIELD, a citizen of the United States, residing at Dunkirk, in the county of Chautauqua and State of New York, have invented a certain new and useful Improved Radiator-Nipple, of which the following is a specification.

This invention relates to an improved nipple or coupling for joining the sections or loops of radiators, or the like, and the object of the invention is to produce a nipple having a comparatively soft non-corrodible outer surface which when fitted into place will form a permanent non-leakable joint between radiator sections or loops, coupled with means for preventing movement of the soft outer portion relative to the inner portion of the nipple as it is forced into the sections.

The invention also relates to certain details in the construction of the improved nipple or coupling which will be fully and clearly hereinafter described and claimed reference being had to the accompanying drawings in which,—

Figure 1 is a central transverse section through two radiator loops connected by my improved nipple. Fig. 2 is a detached side view of the improved nipple. Fig. 3 is a detached end view of the improved nipple. Fig. 4 is a detached side view of the inner annulus of the improved nipple. Fig. 5 is a detached end view of the inner annulus of the improved nipple.

In referring to the drawings in detail, like numerals designate like parts.

The preferred structure of my improved nipple as shown in the accompanying drawings consists of an inner annulus 1, of hard metal such as cast iron and commonly known in the trade as gray iron and an outer annulus 2 of soft material such as lead, surrounding and fitted rigidly around the inner annulus. The inner annulus has its outer peripheral surface oppositely tapered slightly from its center toward both ends as shown at 3 in Fig. 4, and its end edges are tapered more abruptly to form shoulders 4. The outer annulus 2 is preferably lead which is cast around the inner annulus so as to fit tightly around the same, being held rigidly in place thereon by its thicker end portions 5 which seat against the shoulders 4. This provides means for preventing any movement of the outer portion on the inner portion under the pressure or strain of fitting the nipple in

place in radiator sections. These end portions 5, not only prevent any movement of the outer annulus upon the inner annulus while the nipple is being forced into place in a radiator section or loop but also provide thick portions of comparatively soft metal which are capable of being shaped to fit snugly in the openings in the radiator when centered therein and thus form a tight non-leakable joint.

The outer surface of the inner annulus 1, is preferably roughened to provide a multiplicity of minute depressions and raised portions and the outer annulus when cast upon the inner annulus shrinks thereon with its inner surface in close contact with the outer surface of the inner annulus, and formed with a similar roughened surface, thereby rigidly locking the two dissimilar portions of metal together.

So far as my knowledge extends, radiator slip nipples or couplings are now made only of steel or wrought iron. The great objection to steel nipples is that they rust or corrode very rapidly under action of the heating agent and soon leak, thereby rendering the radiator useless until repaired. To repair a radiator having a leaking joint it is necessary to disconnect and uncouple the section and replace the defective nipple with a new nipple which is rather a laborious and expensive operation. Wrought iron nipples require to be turned into shape which is quite a costly operation and makes the nipples expensive. Often when forced into the openings in the radiator sections wrought iron nipples are crushed, and have to be discarded.

My invention contemplates a composite nipple which will be strong enough to resist any crushing strain, which is non-corrosive and is capable of having its outer surface distorted to perfectly conform to the circular wall of the opening in the radiator section or loop into which the nipple is fitted and thus form an absolutely tight joint.

The radiator loops or sections 6, shown in Fig. 1 as being adapted to be united by this improved nipple or coupling are of the ordinary cast iron type and have hubs 7 provided with openings 8 into which the nipples or couplings are forced as shown in said Fig. 1.

I claim as my invention—

1. A nipple for joining radiator sections composed of a hard inner portion and a soft outer portion, said portions being secured

against movement relative to each other under fitting pressure.

2. A nipple for joining radiator sections composed of a hard inner portion and a soft outer portion, said nipple being provided with means for securing the outer portion to the inner portion whereby movement of the outer portion independent of the inner portion under fitting pressure is prevented.

3. A tubular slip nipple for connecting adjacent sections of radiators consisting of an inner annulus of hard metal having its end edges tapered abruptly to form beveled shoulders and an outer annulus of comparatively soft metal around the inner annulus having thick end portions which fit against the beveled shoulders of the inner annulus.

4. In a radiator, the combination with sections thereof having openings, of a tubular slip connection adapted to be forced into the openings in the sections for joining said sections consisting of an inner annulus of hard metal and an outer annulus of comparatively soft metal around the inner annulus, said nipple being provided with means whereby the soft outer annulus is secured to the hard inner annulus against movement relative to

said inner annulus when the nipple is forced in place in the radiator sections.

5. A tubular slip nipple for connecting adjacent sections of radiators consisting of an inner annulus of cast iron and a comparatively thin outer annulus of lead, said nipple being provided with means for securing the lead annulus at its ends to the inner annulus.

6. A tubular slip nipple for connecting adjacent sections of radiators consisting of an inner annulus of cast iron having its peripheral surface oppositely tapered from its center toward both ends, and its end edges tapered more abruptly to form beveled shoulders and an outer annulus of comparatively soft metal cast around the inner annulus and having end portions which fit against the beveled shoulders of the inner annulus whereby movement of the outer annulus relative to the inner annulus is prevented as the nipple is forced into place in the radiator sections.

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Witnesses:

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