

C. S. SHALLENBERGER.
BRAKE SHOE.
APPLICATION FILED JUNE 5, 1908.

900,600.

Patented Oct. 6, 1908.

3 SHEETS—SHEET 1.

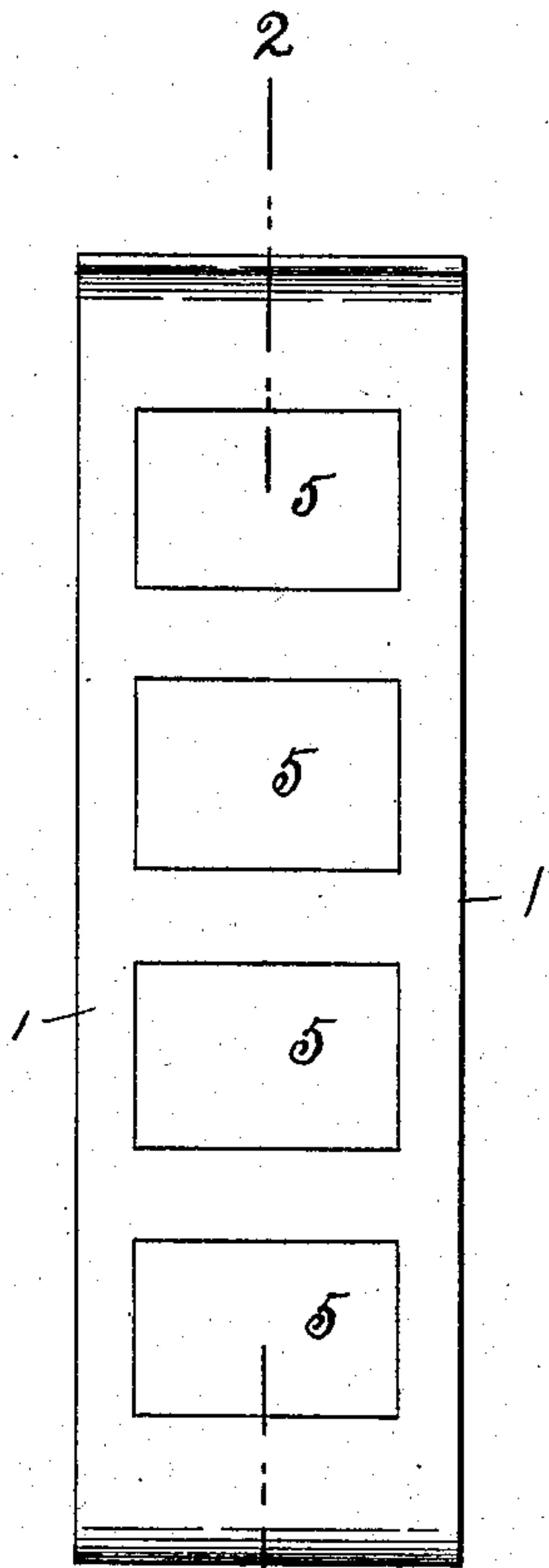


FIG. 1

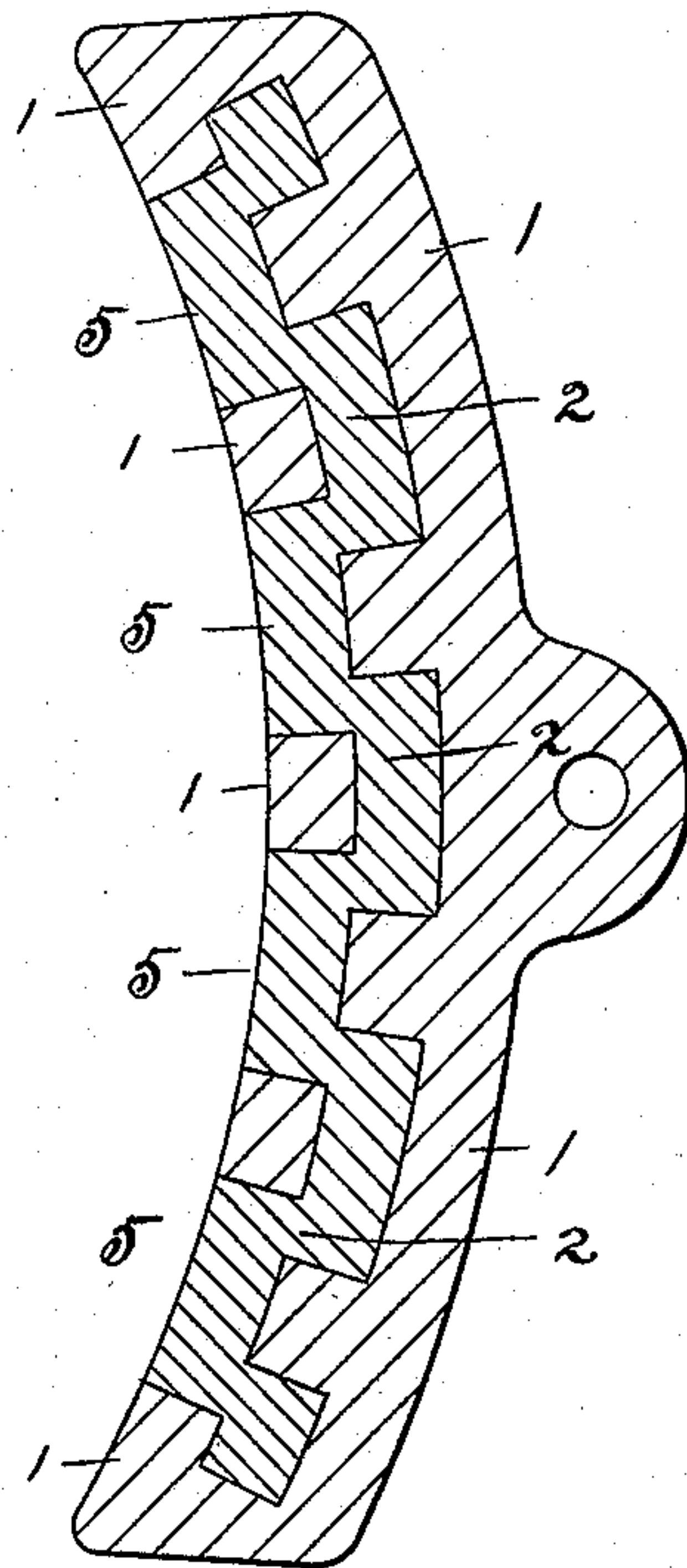


FIG. 2

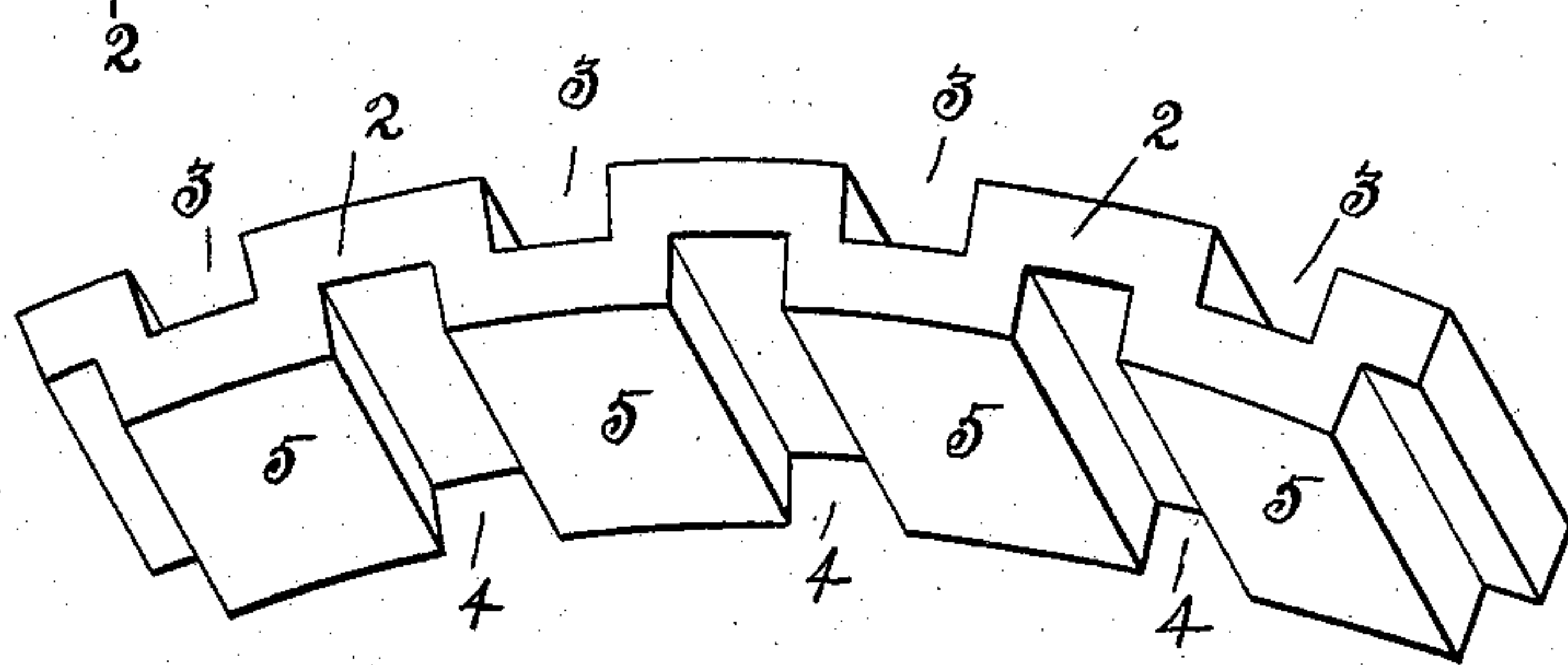


FIG. 3

WITNESSES

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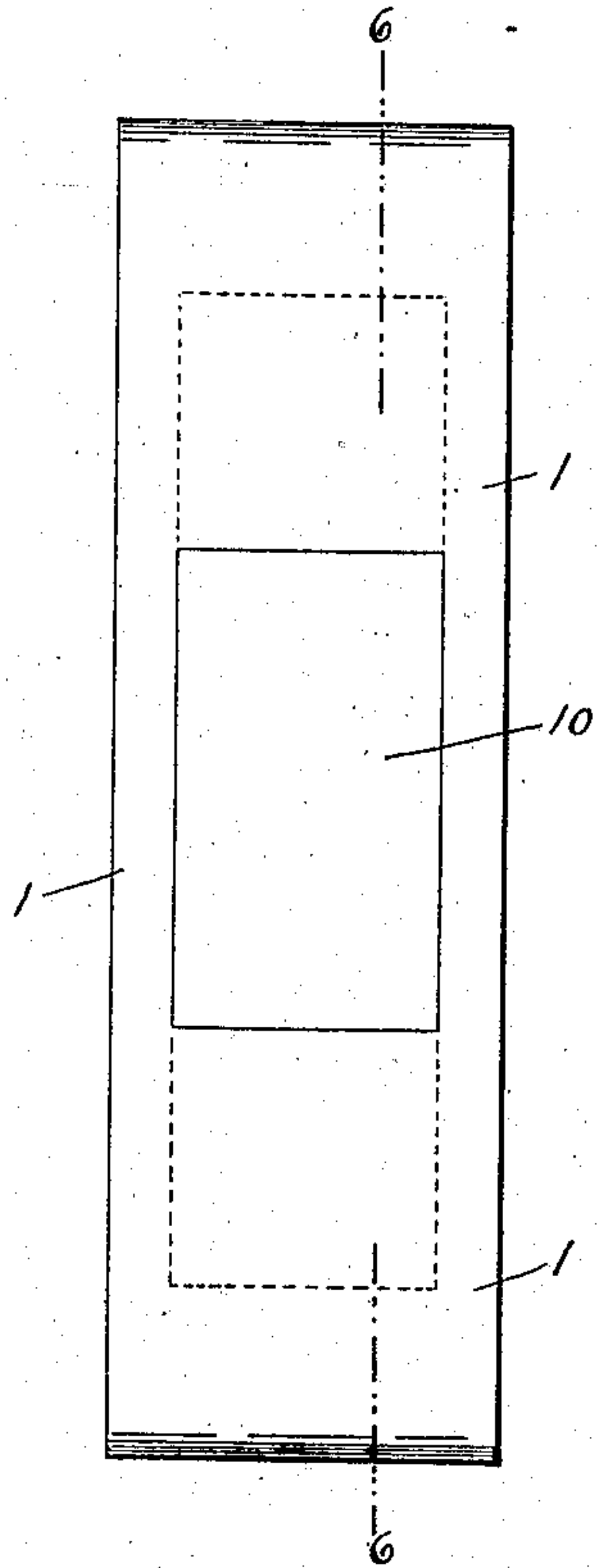


Fig. 5

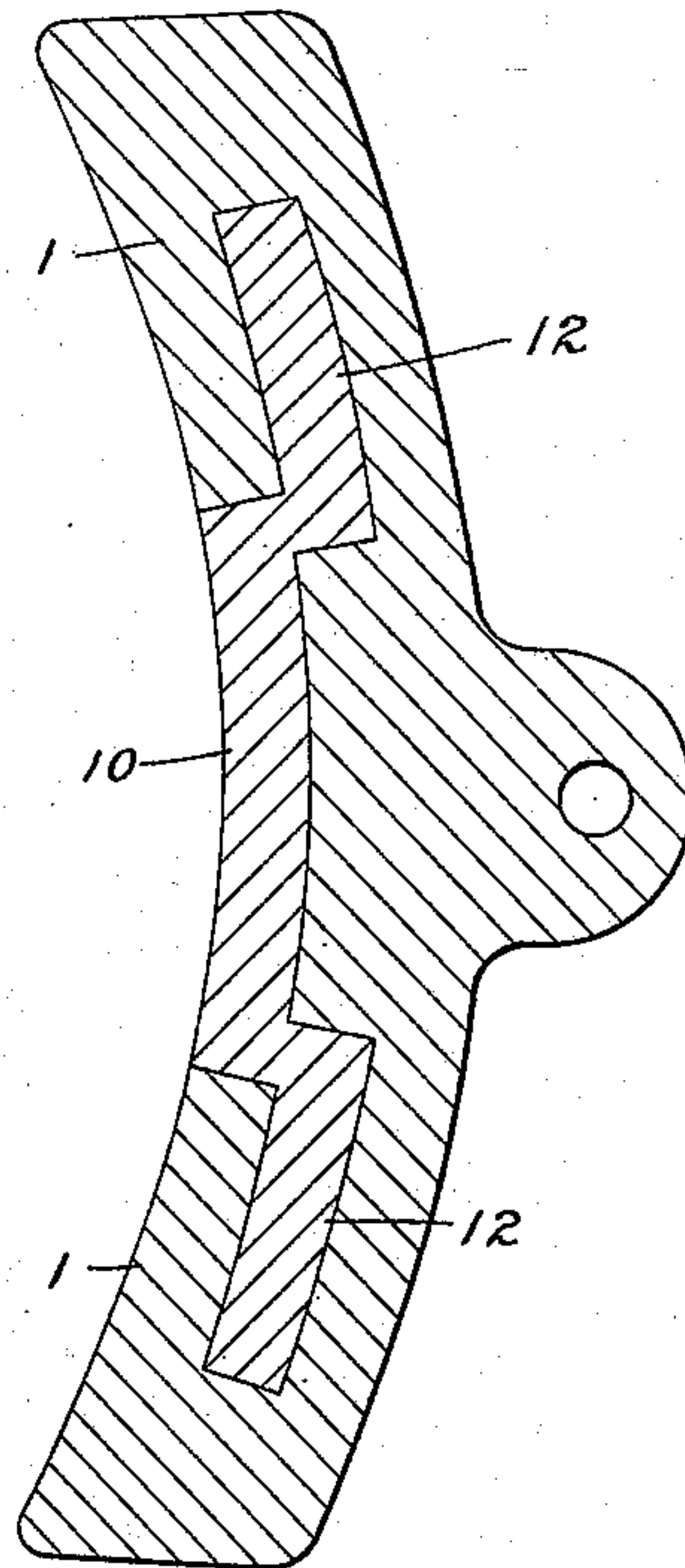


Fig. 6

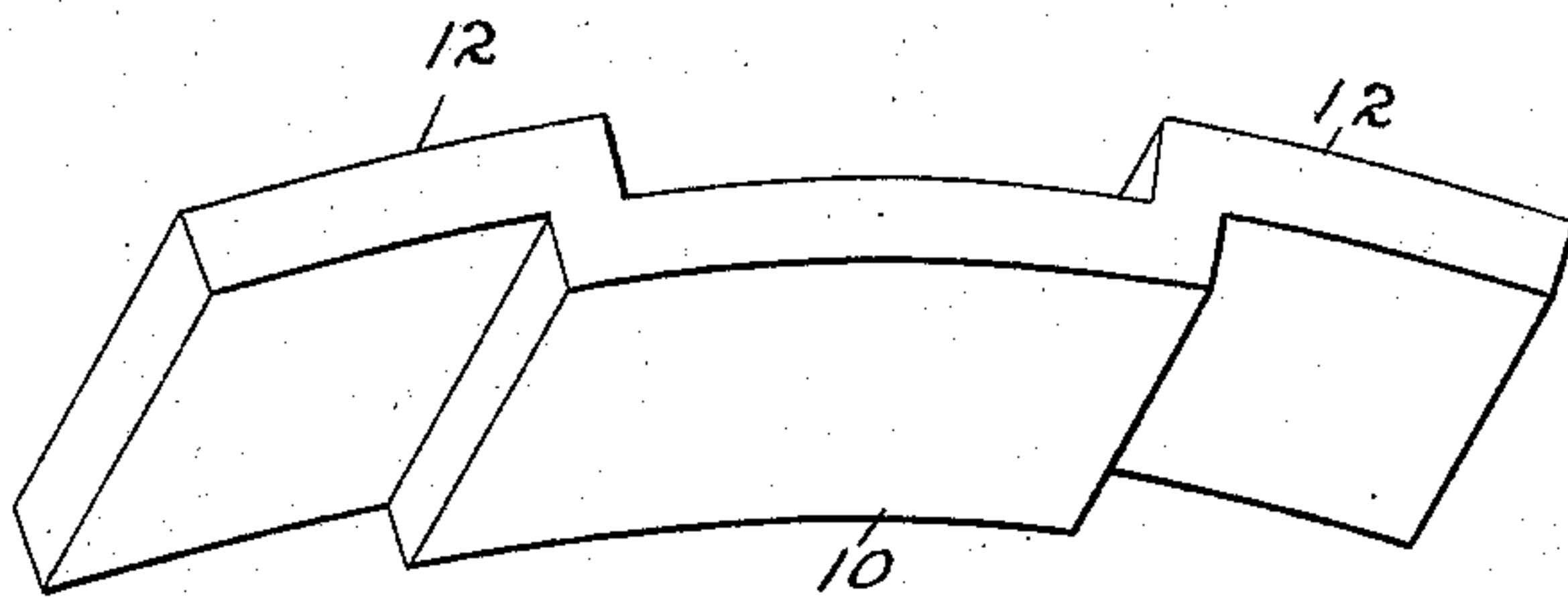


Fig. 4

WITNESSES

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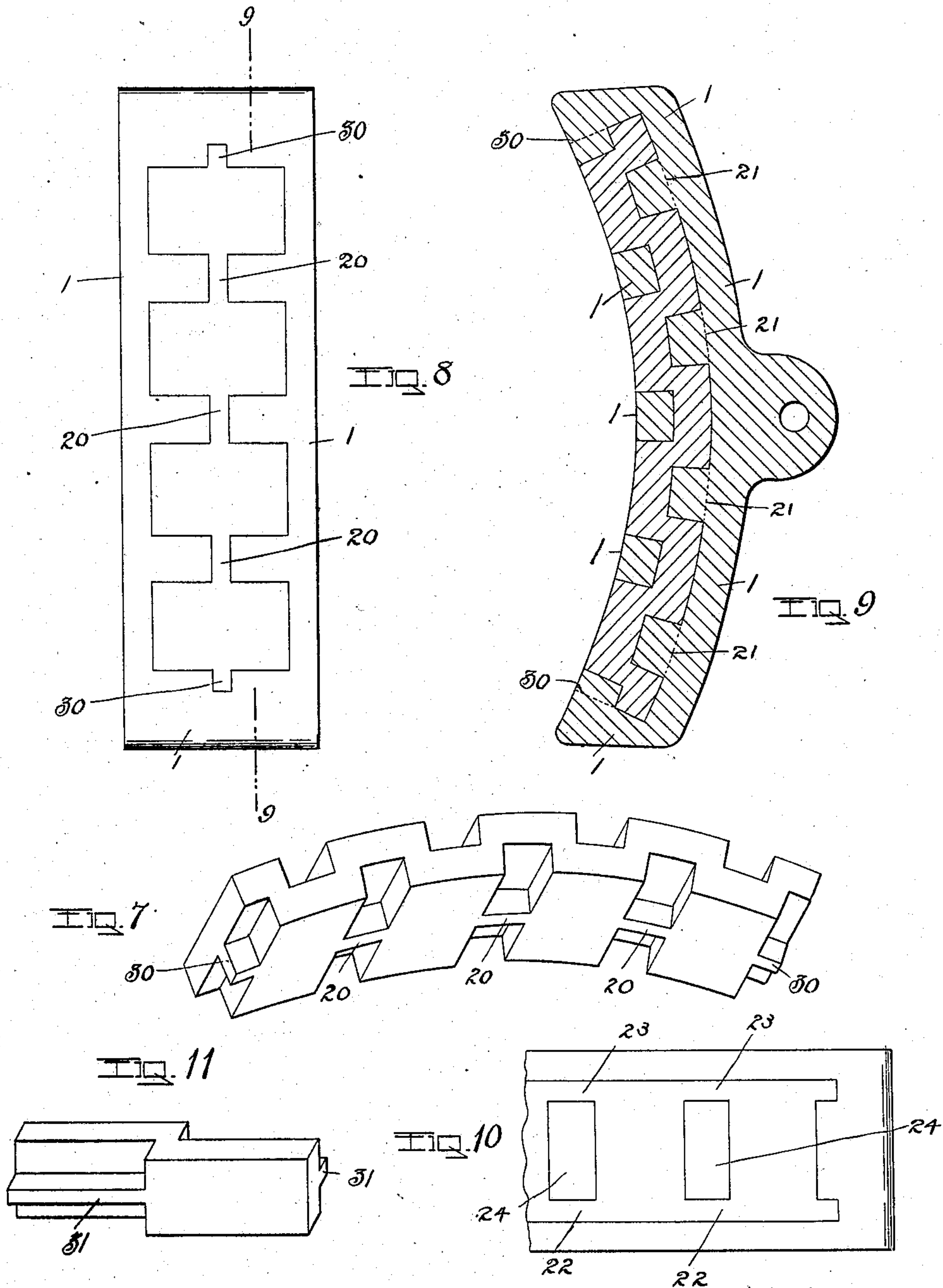
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UNITED STATES PATENT OFFICE.

CHARLES S. SHALLENBERGER, OF ST. LOUIS, MISSOURI.

BRAKE-SHOE.

No. 900,600.

Specification of Letters Patent.

Patented Oct. 6, 1908.

Application filed June 5, 1908. Serial No. 436,777.

To all whom it may concern:

Be it known that I, CHARLES S. SHALLENBERGER, a citizen of the United States, residing at St. Louis, county of St. Louis City, and State of Missouri, have invented certain new and useful Improvements in Brake-Shoes, of which the following is a specification.

The invention relates to such improvements and consists of the novel construction and combination of parts hereinafter described and subsequently claimed.

Reference may be had to the accompanying drawings, and the reference characters marked thereon, which form a part of this specification. Similar characters refer to similar parts in the several figures therein.

This invention relates to that class of brake-shoes wherein metal plates differing in density from the cast-metal body of the shoe have been embedded in the casting forming such body for the purpose of providing metal surfaces of differing density adapted to engage a wheel surface.

The object of the invention is to provide brake-shoes with an insert-plate of any desired density which will prolong the life of the shoe and increase its wearing limit without changing in any degree the proportion of hard and soft surfaces in using the shoe.

The invention consists in providing an insert-plate of the curvature desired with one or more offsets or projections on the face and back of the plate, so spaced that an offset on one side of the plate will be located opposite the groove or space between neighboring offsets on the opposite side of the plate, all of the offsets being of approximately the same thickness.

The offsets are also so formed and disposed relatively to each other that the face and back surfaces of all the offsets are parallel with and equidistant from each other, and the back-surface of a face-offset would, if extended, intersect the face-surface of a back-offset, as will be hereinafter described and subsequently pointed out in the claims.

Referring to the drawings: Figure 1 is a plan view of the face of the completed brake-shoe. Fig. 2 is a longitudinal, vertical section taken on the broken line 2—2 in Fig. 1. Fig. 3 is a view in isometrical perspective of the insert-plate detached. Fig. 4 is a view in isometrical perspective, showing a modified form of insert-plate detached. Fig. 5 is a plan view of the face of a completed brake-

shoe provided with the insert-plate shown in Fig. 4. Fig. 6 is a longitudinal, vertical section taken on the broken line 6—6 in Fig. 5. Fig. 7 is a view in isometrical perspective, showing another modified form of insert-plate. Fig. 8 is a plan view of the face of a completed brake-shoe provided with the insert-plate shown in Fig. 7. Fig. 9 is a longitudinal, vertical section taken on the broken line 9—9 in Fig. 8. Fig. 10 is a plan view of the face of a completed brake-shoe, with one end part broken away, showing a modified arrangement of strengthening ribs. Fig. 11 is an isometrical perspective, showing an insert-plate composed of a single face-offset and a single back-offset provided with connecting strengthening ribs.

The cast-metal body, 1, is cast about the insert-plate, 2, in the usual well known manner, so that the metal enters the grooves, 3, in the back of the plate, and the grooves, 4, in the face of the plate, and incloses the whole of the insert-plate except the surface of the face-offsets, 5, which are located contiguous to the face-grooves, 4, as will be seen from inspection of Figs. 1 and 2.

The face of the completed shoe will therefore present the comparatively hard surface of offsets, 5, and the comparatively soft surface of the cast-metal body, 1, which entirely surrounds the harder surfaces, as will be seen in Fig. 1.

When the brake-shoe is so worn that the insert-plate is reduced to one-half its original thickness, it will be apparent from an inspection of Fig. 2 that the comparatively soft casting which fills the grooves in the back of the insert-plate will be brought to the face-surface of the shoe, and the face-offsets, 5, of the insert-plate will be wholly worn away.

While the remaining half of the insert-plate, consisting of the back-offsets, 6, is being worn away, the same proportion of hard and soft surfaces will be maintained that prevailed during the wearing away of the first half of the insert-plate, consisting of offsets 5.

The softer cast-metal in the grooves of the back will be brought to the face-surface of the shoe, and occupy positions severally opposite the spaces formerly occupied by the face-offsets, and the face-surfaces of the insert-plate will then have their middle portions located opposite the spaces or grooves between the former wearing surfaces of such plate, which latter surfaces were on the face-offsets, 5, but the ratio of hard and soft surfaces will

remain the same until the insert-plate is wholly worn away.

It is not desired to limit the invention to the use of a plurality of offsets, either on the face or back of the plate, and in Fig. 4 is shown a form of insert-plate having one offset-projection, 10, on the face of the plate, and two offset-projections, 12, on the back of the plate.

When the insert-plate is provided with a series or plurality of offsets, the plate may be strengthened by connecting the neighboring offsets by means of a narrow flange, as shown in Figs. 7, 8 and 9, wherein the several face-offsets are shown connected by a strengthening rib, 20, and the back-offsets by a strengthening rib, 21. These strengthening ribs are shown in Figs. 7, 8 and 9, located in the longitudinal middle part of the plate, but it is obvious that such ribs may be located at the side edges of such plate, as shown in Fig. 10. In this figure I have shown two ribs, 22 and 23, connecting the neighboring offsets at the side edges of the plate, thus forming pockets, 24, instead of open grooves between the neighboring offsets.

Each end-offset of the insert-plate is connected with its neighboring offset by a rib projecting from one side, preferably a distance equal to the thickness of the offsets, so that such rib forms a narrow projection of the neighboring offset, as shown by the ribs, 30, in Fig. 7, and ribs, 31, in Fig. 11.

When the insert-plate comprises only two offsets, one a face-offset and the other a back-offset, as shown in Fig. 11, two or more such insert-plates may be employed, and so arranged as to distribute the wearing surfaces equally on the opposite end-portions of the brake-shoe, approximately at equal distances from the middle transverse line of the brake-shoe.

What I claim as new and desire to secure by Letters Patent is—

1. An insert-plate for brake-shoes comprising face and back-offsets, so formed and disposed relatively to each other that the face and back-surfaces of such offsets are parallel with and equidistant from each other, and the back-surface of a face-offset would if extended intersect the face-surface of a back-offset.

2. An insert-plate for brake-shoes having a series of offsets along the face and back of such plate, the offsets in the back of the plate

alternating with the offsets in the face of the plate.

3. An insert-plate for brake-shoes having in its face a series of transverse grooves, and in its back a series of corresponding transverse grooves, the grooves in the face being located opposite the spaces between the grooves in the back respectively.

4. An insert-plate for brake-shoes having a series of grooves in the face and back of such plate, the grooves in the back of the plate alternating with the grooves in the face of the plate, all the grooves being approximately of the same depth, and of a depth equal to one-half the thickness of the insert-plate.

5. In a brake-shoe, the combination with an insert-plate having a series of offsets in the face and back of such plate, the offsets in the back of the plate alternating with the offsets in the face of the plate; of a cast-metal body wholly inclosing the insert-plate except the face surfaces of the face-offsets.

6. In a brake-shoe, the combination with an insert-plate having a series of grooves in the face and back of such plate, the grooves in the back of the plate alternating with the grooves in the face of the plate, all the grooves being approximately of the same depth, and of a depth equal to one-half the thickness of the insert-plate; of a cast-metal body filling such grooves, and inclosing the whole of such plate except the face-surfaces contiguous to the grooves.

7. An insert-plate for brake-shoes having on one of its sides a series of alternating offsets and grooves, the neighboring offsets being connected by a strengthening rib.

8. An insert-plate for brake-shoes comprising face and back-offsets, so formed and disposed relatively to each other that the face and back-surfaces of such offsets are parallel with and equidistant from each other, and the back-surface of a face-offset would if extended intersect the face-surface of a back-offset, such offset being provided with strengthening ribs, each rib connecting a face-offset with a back-offset.

In testimony whereof, I have hereunto set my hand this 23rd day of May, 1908.

CHARLES S. SHALLENBERGER.

Witnesses:

L. DAVIDSON,
OTTO H. GIBBS.