

W. J. KENT.
HOOF PAD.

(Application filed June 26, 1901.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 2.

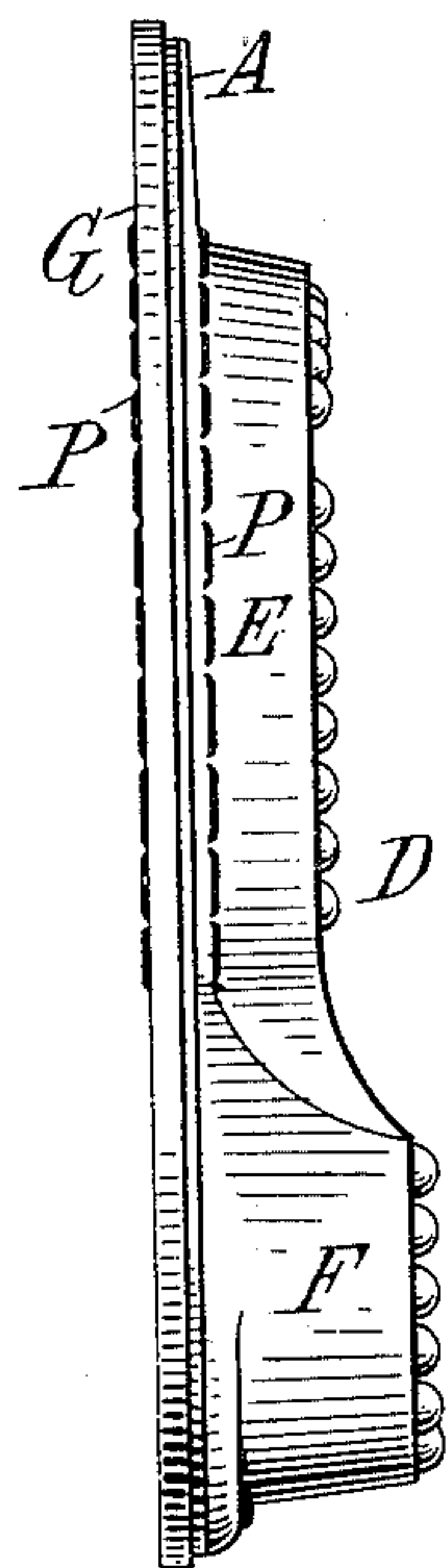


FIG. 1.

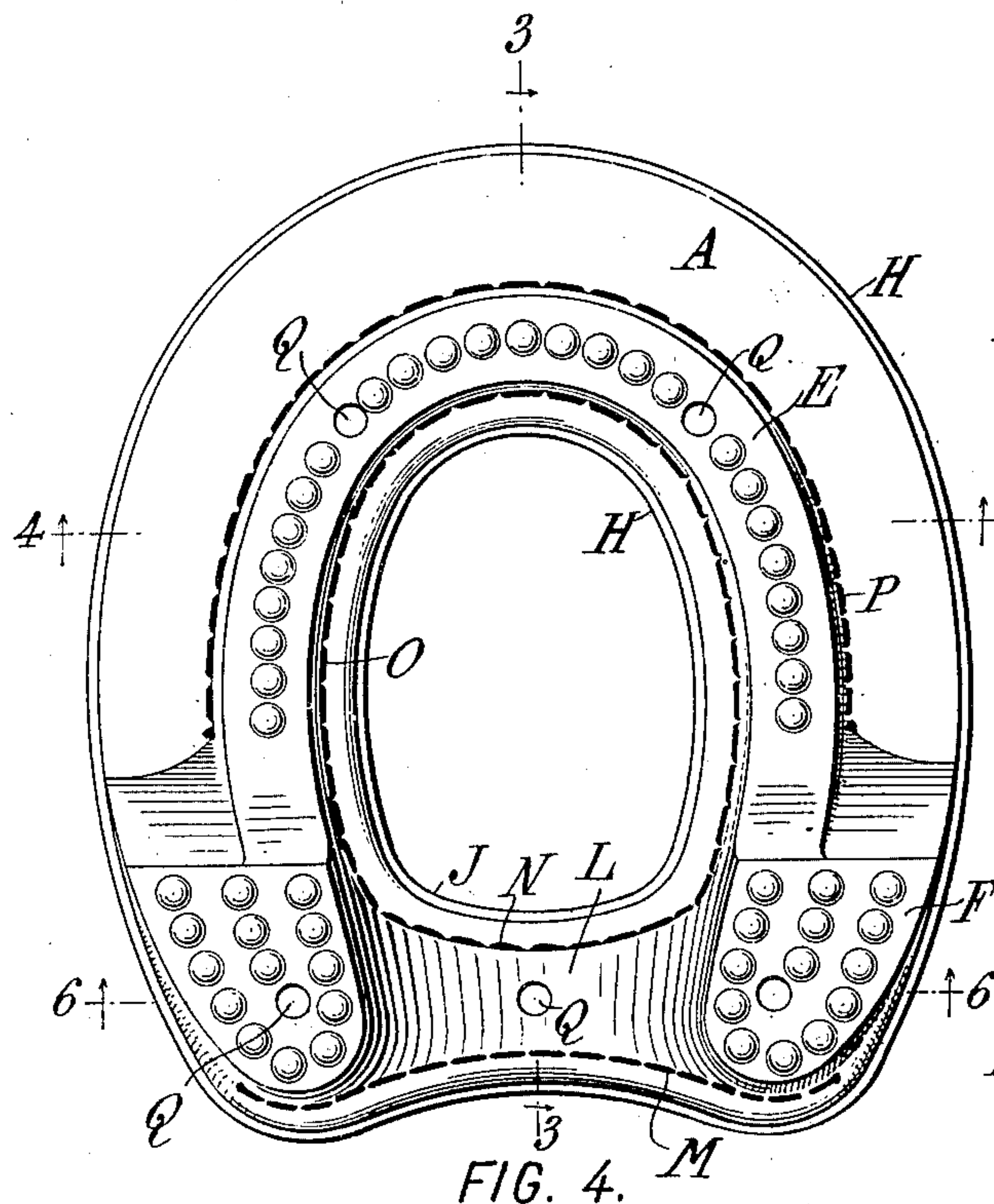


FIG. 3.

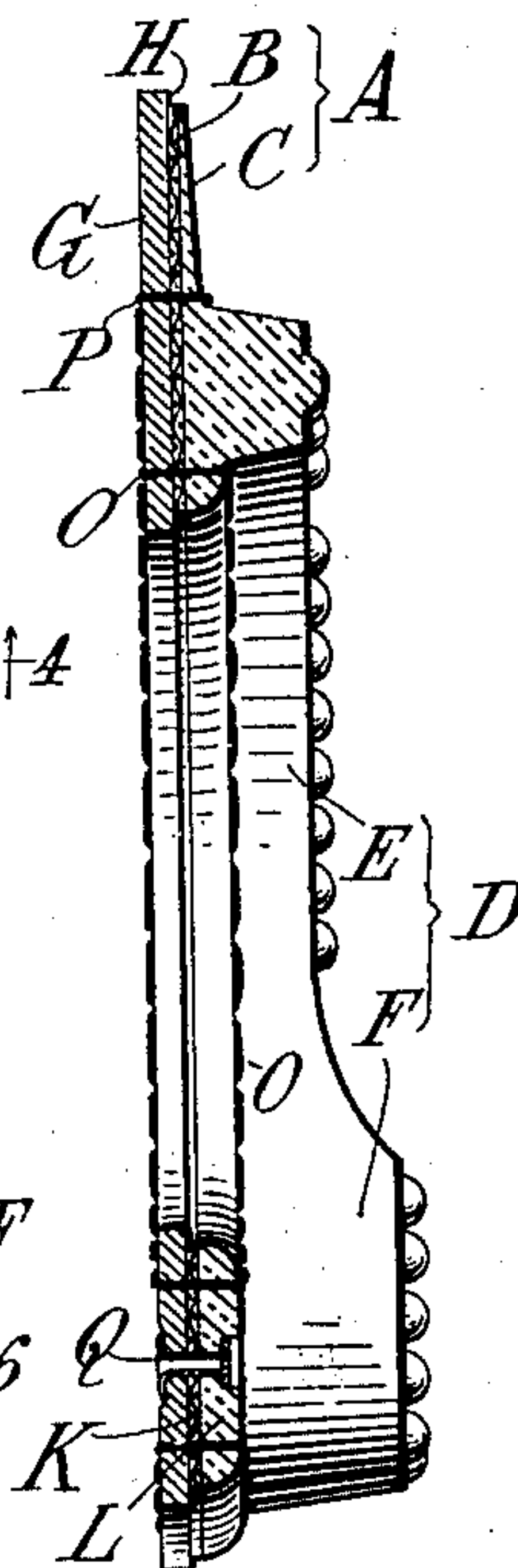


FIG. 4.

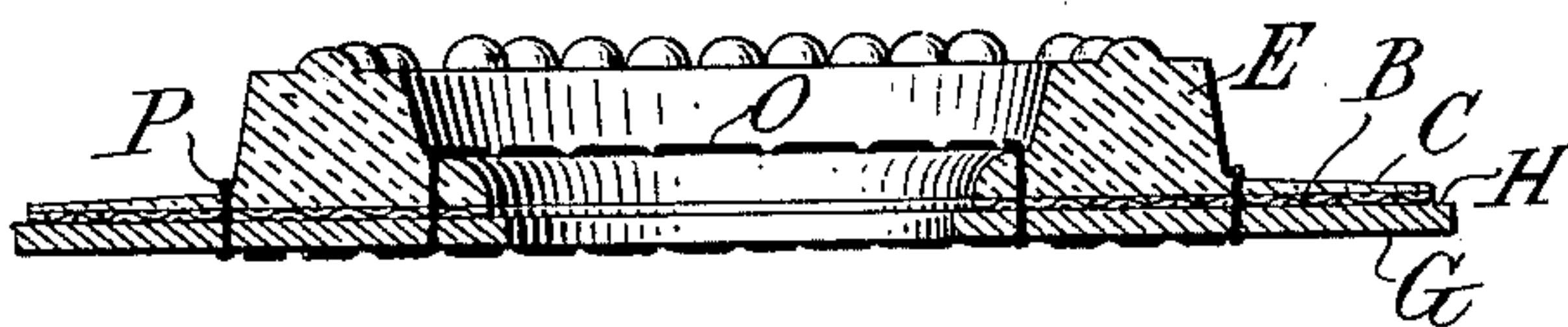


FIG. 5.

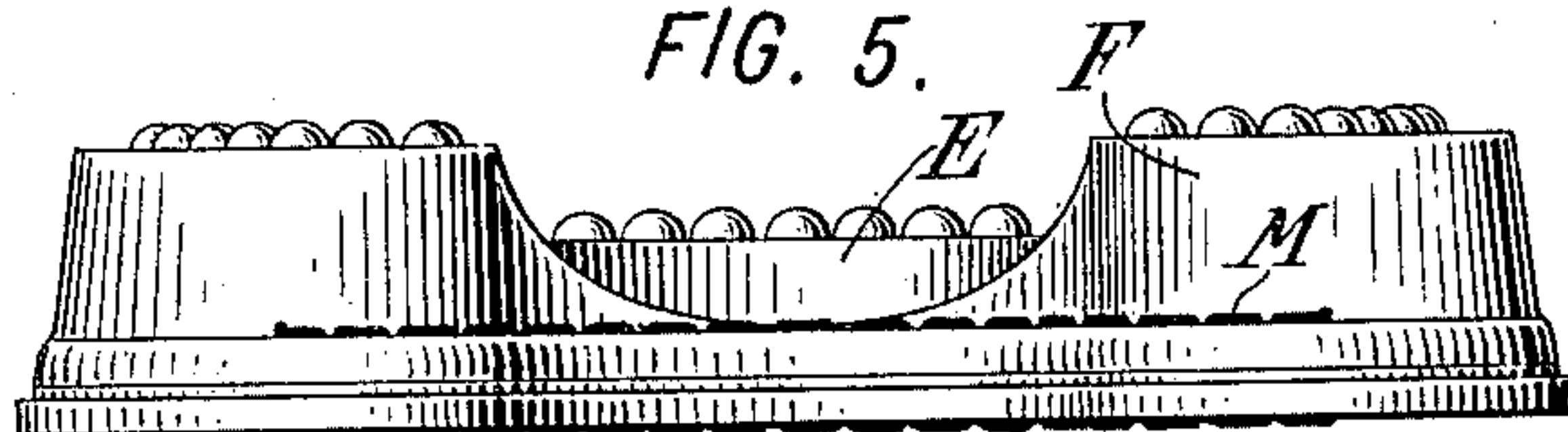
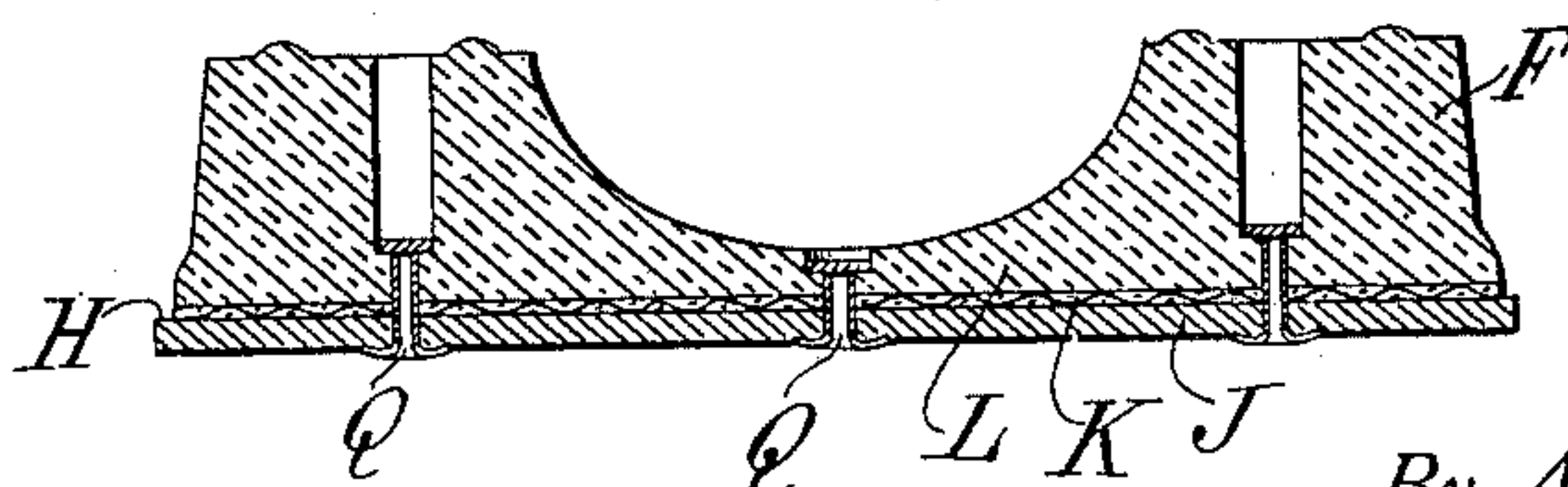


FIG. 6.



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2 Sheets—Sheet 2.

FIG. 8.

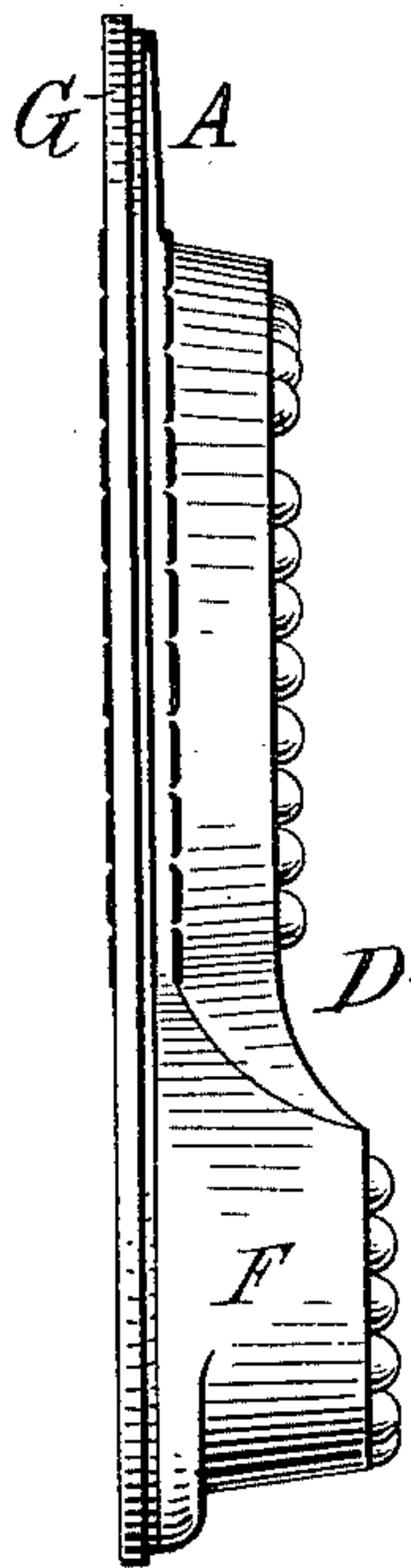


FIG. 7.

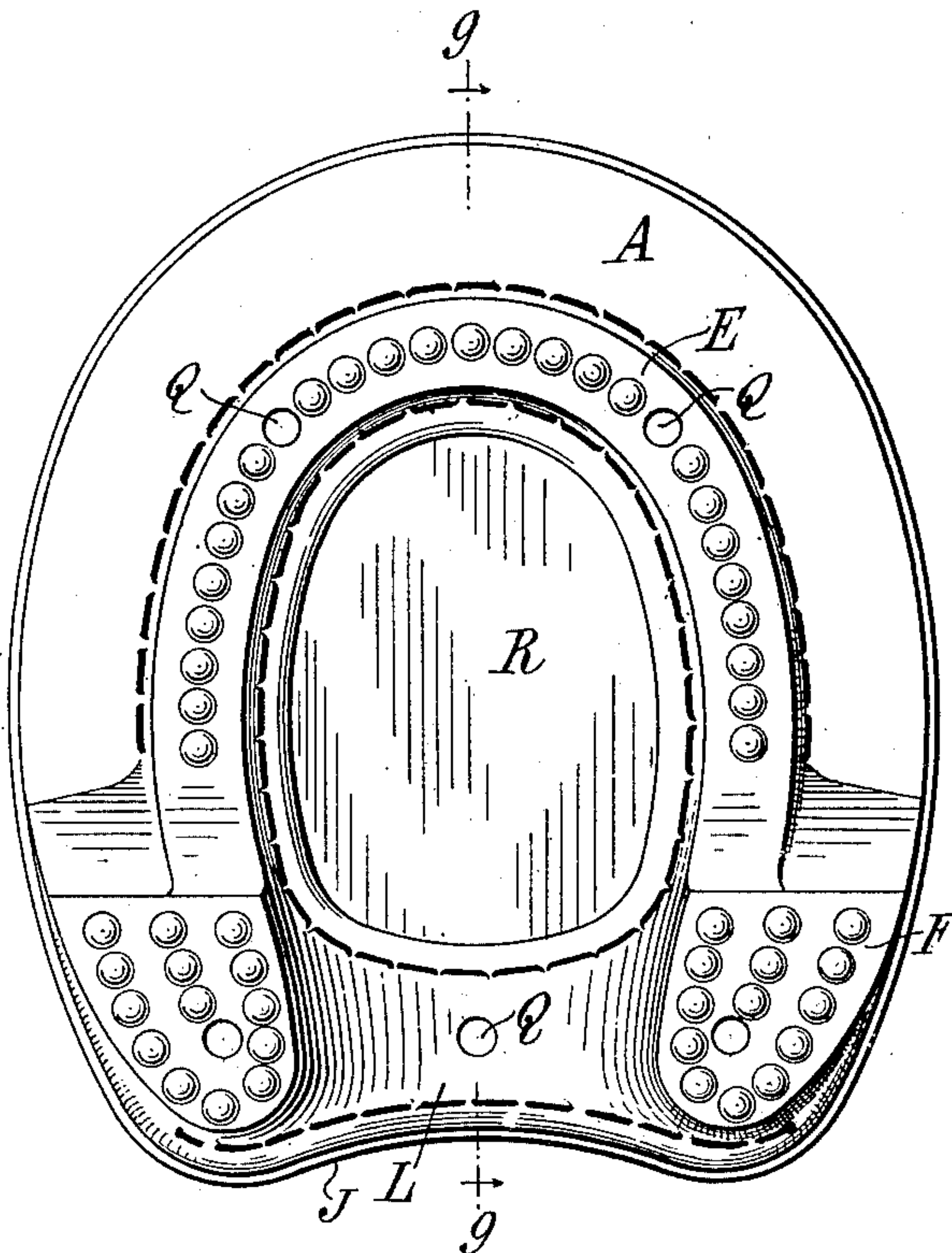


FIG. 9.

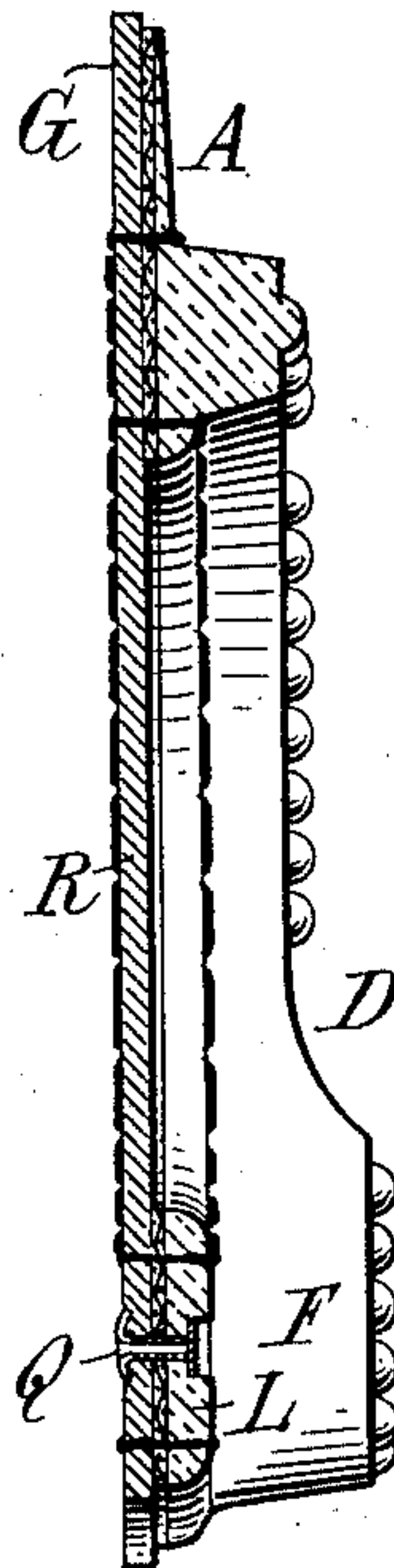


FIG. 10

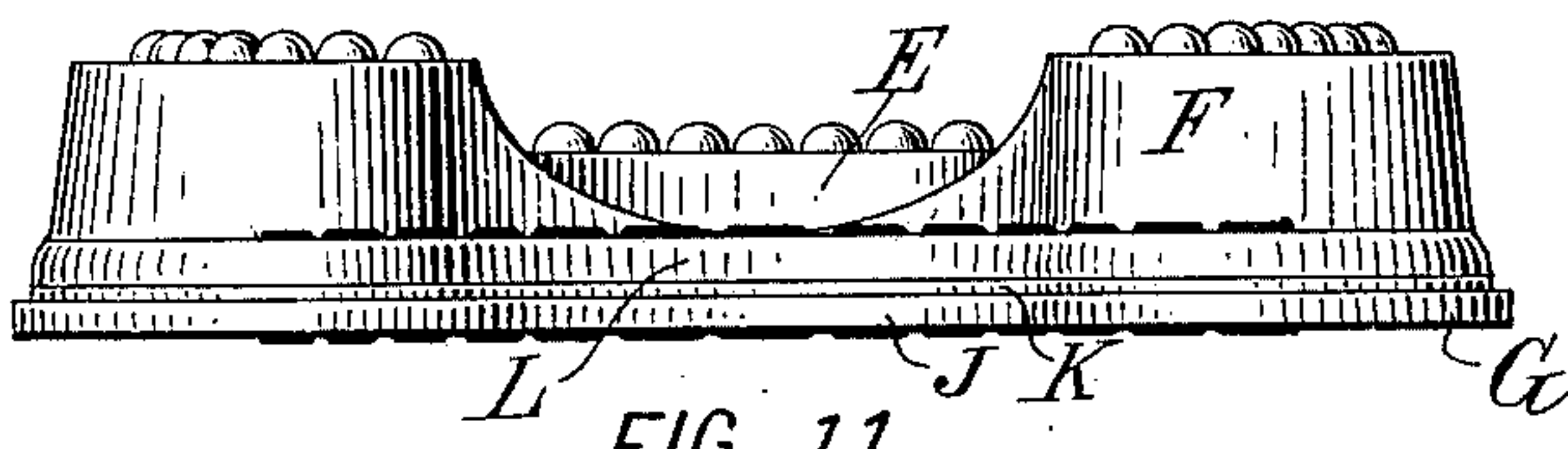
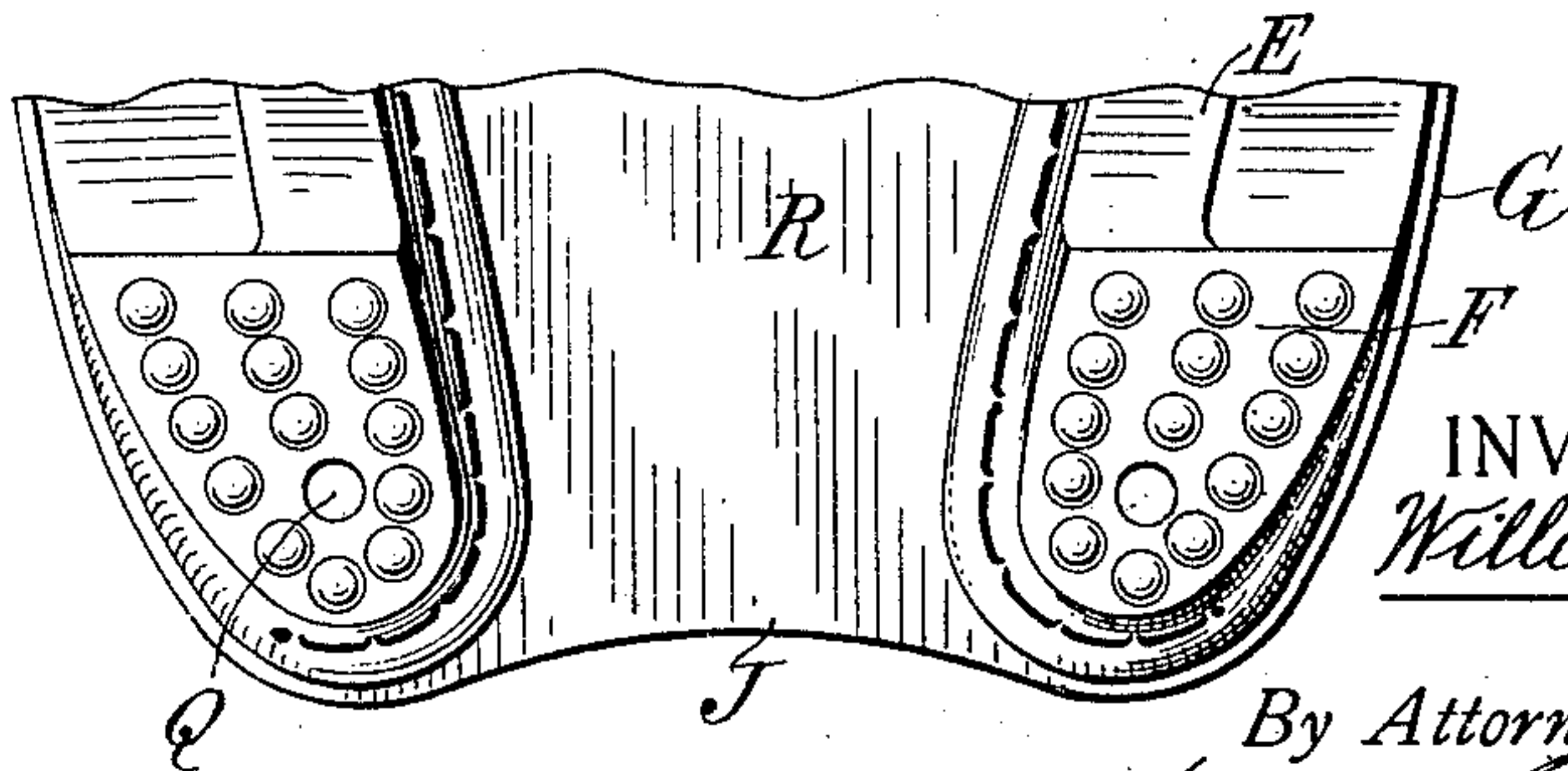


FIG. 11.



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UNITED STATES PATENT OFFICE.

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HOOF-PAD.

SPECIFICATION forming part of Letters Patent No. 692,305, dated February 4, 1902

Application filed June 26, 1901. Serial No. 66,075. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. KENT, a citizen of the United States, residing in Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Hoof-Pads, of which the following is a specification.

In order to reduce the shock incident to the impact of the usual steel shoe with the roadway, it is customary to provide a pad of elastic construction, and thus protect the hoofs of horses. These pads are made in various shapes and structures. Nearly all of them, however, comprise a rubber or other cushion-like member which is attached by fastening a portion of it between the shoe and the hoof, the cushioning portion being projected outward beyond the outer face of the steel shoe, so as to receive the first shock of the blow produced by the striking of the horse's hoof on the pavement. Ordinarily the steel shoe comprises only a portion fitting the toe and short portions extending along each of the sides of the hoof, the heel being omitted. This is the ordinary "three-quarters" shoe and is specially adapted for use with the cushioning-pads now in use. The heel portion of the shoe is replaced by a projecting portion of the cushioning member, which as usually constructed extends across the rear of the hoof, constituting a single heel-cushion of the full width of the hoof at the rear, or in some existing constructions the pad is formed with a pair of individual heel-cushions with an open space between them.

My present invention aims to provide certain improvements in hoof-pads, and especially in hoof-pads of the general character indicated, whereby the pad prevents the spreading of the heel portions of the hoof, which is a serious defect in some of the existing forms, and whereby the pad at the same time transmits pressure chiefly to the portions best able to receive the pressure, and thereby avoids damage to the tender parts of the hoof.

My invention aims also to provide an improved hoof-pad having various other features of advantage, which will be referred to in detail hereinafter.

In the accompanying drawings, representing certain embodiments of my invention, Figure 1 is an under side plan view of a pad embodying my invention. Fig. 2 is a side elevation of the same. Fig. 3 is a central longitudinal section on the line 3 3 of Fig. 1. Fig. 4 is a transverse section on the line 4 4 of Fig. 1. Fig. 5 is a rear end elevation. Fig. 6 is a transverse section on the line 6 6 of Fig. 1. Fig. 7 is an under side plan view of another embodiment. Fig. 8 is a side elevation of the same. Fig. 9 is a central longitudinal section on the line 9 9 of Fig. 7. Fig. 10 is a rear end elevation of Fig. 7. Fig. 11 is an under side plan view of the heel portion of a third embodiment of my invention.

Referring to the drawings, the pad is shown as comprising a bearing-strip A, which is adapted to be fastened directly against the upper side of a shoe when in use and extending across the toe and a sufficient distance along the sides of the hoof to receive the entire shoe. The material of this bearing-strip is commonly a layer B of textile material and a superposed layer C of rubber vulcanized or otherwise fastened thereto.

D represents as a whole a cushioning member comprising a portion E, extending along the toe and sides, along the inner edge of the bearing-strip A, and of a height to project slightly beyond the face of the shoe when in position on the bearing-strip. The cushioning member may include also individual projections F, which are separate from each other and form heel-cushions, being of somewhat greater depth than the toe and side portions E, since they receive the first and principal shock. This cushioning member D is ordinarily united to the bearing-strip A, as by being made integral with the rubber layer C thereof. To procure the necessary strength and stiffness, a reinforce G, of heavy leather or the like, is usually provided at the back of the bearing-strip and attached thereto by stitching, cementing, or otherwise. This reinforce ordinarily extends along the back of the bearing-strip and heel-cushions.

The features thus far described are found in types of pad now on the market, and it is in connection with such a type of pad that I

will describe my improvements; but it will be understood that my improvements are in general applicable to various other types than the particular one here described.

5 According to the preferred form of my present improvements I provide several features having important advantages over prior constructions. In previously-constructed pads it has been common either to extend the heel-
10 cushions entirely across the rear portion of the hoof, thereby causing the same shock to the sensitive frog of the hoof as to the stronger heels, or, in order to save the frog, individual heel-cushions have been made without
15 any connection between them. The latter construction, however, is faulty in that under a heavy pressure the individual heel-cushions, being without any connection, tend to spread apart, and thus again injure the
20 hoof. In my improved pad both these difficulties are overcome by providing individual heel-cushions and uniting them firmly to each other by means of strengthening-strips which are preferably integral portions of the
25 reinforce. The heels of the hoof are thus supported against spreading, while at the same time there is no pressure on the sensitive frog. In order to prevent the heel-cushions from spreading on the reinforce, I prefer also to extend a portion of the bearing-
30 strip across between said heel-cushions, and I may even further strengthen the construction by forming the cushioning member with a portion connecting the heel-cushions, but
35 depressed between such heel-cushions, so as not to receive the impact or at least not the full force of the impact. In order to stiffen the central portion of the pad, I may also construct the reinforce with a portion extending
40 across between the side walls of the hoof. The reinforce is firmly connected with the bearing-strip and cushioning member by strong seams and preferably also rivets at points of greatest strain.

45 By the construction explained I give the tread of the hoof a firm and the frog a more yielding support. The portion of the pad lying under the toe and side walls of the hoof I call the "body" portion, and the portion extending across between the heel-cushions so
50 as to prevent them spreading I call the "connecting" portion, whether it be made solely as a part of the reinforce or include a part of the reinforce and a part of the cushioning
55 member.

In Figs. 1 to 6 a reinforce G is illustrated as being of the same shape as the bearing-strip A, extending beyond the same by a slight margin H all around, which makes it more
60 convenient to manufacture and which in use protects the edges of the bearing-strip to a considerable extent. At the rear end a strengthening-strip J, which is preferably an integral part of the reinforce G, is provided,
65 which connects the two heels, (and may be slightly reduced in width toward the center, as shown,) thus holding the heel portions of

the reinforce fixedly in position and preventing any spreading strain on the heels of the hoof. The heel-cushions are prevented from
70 spreading on the reinforce by connecting them directly, as by extending a portion K, Figs. 3 and 6, of the bearing-strip across between the cushions or by extending also a
75 portion L of the cushioning member across the same space. The portion K of the bearing-strip or the portions K of the bearing-strip and L of the cushioning member are firmly
80 united along their entire length to the connecting-strip J of the reinforce by means of a seam M or a pair of seams M and N at opposite edges. Preferably the seam N forms
85 a continuation of a similar seam O, uniting the inner edge of the cushioning member and bearing-strip to the inner edge of the reinforce. Preferably also an additional seam P
90 unites the bearing-strip along the toe and side walls of the cushioning member with the corresponding portion of the reinforce. By
95 arranging the seams as shown the parts are united at substantially all points, so that there is no movement of one part on the other and lateral stiffness of the whole is secured
100 to a great extent without affecting the yielding quality of the cushioning member under the action of a vertical pressure. For preventing any separation of the parts at points
105 between the seams I may provide also a countersunk rivet Q, connecting the portions which extend across between the heel-cushions and connecting also the heel-cushions
110 and the toe and side walls of the cushioning member with the reinforce. It will be noted that the rivets in the cushioning member are so deeply countersunk that they cannot possibly
115 come into contact with the pavement, and therefore cannot be forced up to injure the hoof, and that the rivet which connects the central portions of the strengthening
120 members J K L is in a position which cannot come into contact with the pavement, being
125 between the two projecting heel-cushions.

In addition to the strengthening-strip J of the reinforce I may provide it with a strengthening portion R, Figs. 7 to 10, extending
130 across between the side walls, so as to give the intermediate portion of the pad greater stiffness. I may, in fact, make the portion R cover the central opening of the cushioning member and bearing-strip entirely, so that
135 the reinforce G becomes a continuous unapertured plate, thereby protecting the interior of the hoof against direct contact with stones or other substances which might enter the
140 hoof if the shoe were left open and cause injury either by their forcible impact against the delicate structure of the hoof or by their lodging therein, and by continued impact
145 against the road wedging apart the walls of the coffin-joint. In all other respects the construction in these figures is substantially identical with that in Figs. 1 to 6.

It is not essential that the bearing-strip A and cushioning member D or either of them

shall extend across the space between the heel-cushions. I may, as in Fig. 11, rely entirely on the connecting-strip J of the reinforce for giving the necessary stiffness at the heel. In this construction the intermediate connecting portion R may be provided, as shown, or may be omitted, leaving a central opening, as in Fig. 1.

Various other modifications of my invention will occur to those skilled in the art. It will be understood, therefore, that my invention is not limited to the specific embodiments described by way of example, but that it includes all pads in which substantially the same principle or mode of operation is accomplished by equivalent means.

In use my improved pad is placed between the hoof and the shoe, the latter being nailed in the usual manner through the bearing-strip and the reinforce. The shock of impact is taken up first by the heel-cushions F and then by the toe of the portion E of the cushioning member, any tendency of the heels of the hoof to spread when the pressure comes on them being prevented by the strengthening-strip J and any tendency of the heel-cushions themselves to spread being sufficiently neutralized by the portions K and L of the bearing-strip and cushioning member, which connect the heel-cushions directly with each other. Where the construction of Fig. 7 is employed, the intermediate strengthening portion R will hold the central part of the hoof against any spreading tendency and will also protect the hollow of the hoof from contact with stones or the like.

The projecting portion E of the pad has principally two functions, its toe portion forming a tread to yieldingly receive the impact after the principal shock has been taken up by the heel-cushions, while its side portions constitute chiefly stiffening members for strengthening the pad and bracing the individual heel-cushions which project beyond the three-quarter shoe, which alone fastens the pad to the hoof, so that these heel portions would yield or bend toward and from the hoof if not suitably stiffened or braced; but it is understood that other means for performing this latter function might be substituted.

What I claim is—

1. A hoof-pad comprising a body portion adapted to fit the toe and sides of the hoof, projections connected to said body portion and forming individual heel-cushions, and a connecting portion connecting said cushions at the heel of the pad and having a continuous recess on the under side, whereby the tread of the hoof is given a firm, and the frog a more yielding, support.

2. A hoof-pad comprising a body portion adapted to fit the toe and sides of the hoof, projections connected to said body portion and forming individual heel-cushions, and a connecting portion connecting said cushions at the heel of the pad and having a continuous recess on the under side, whereby the

tread of the hoof is given a firm, and the frog a more yielding, support, said body portion being composed of a bearing-strip of cushioning material and a reinforce secured to the back of said bearing-strip.

3. A hoof-pad comprising a body portion adapted to fit the toe and sides of the hoof, and projections connected to said body portion and forming individual heel-cushions, said body portion being composed of a bearing-strip of cushioning material and a reinforce secured to the back of said bearing-strip, and said reinforce having a connecting portion J connecting said cushions at the heel of the pad so as to leave a continuous recess on the under side, whereby the tread of the hoof is given a firm, and the frog a more yielding, support.

4. A hoof-pad comprising a body portion adapted to fit the toe and sides of the hoof, and projections connected to said body portion and forming individual heel-cushions, said body portion being composed of a bearing-strip of cushioning material and a reinforce secured to the back of said bearing-strip, and said reinforce having a connecting portion J connecting said cushions at the heel of the pad so as to leave a continuous recess on the under side, and having a portion R extending across between the sides of said body portion.

5. A hoof-pad comprising a body portion adapted to fit the toe and sides of the hoof, projections connected to said body portion and forming individual heel-cushions, and a connecting portion connecting said cushions at the heel of the pad and having a continuous recess on the under side, whereby the tread of the hoof is given a firm, and the frog a more yielding, support, said pad being composed of a cushioning member comprising a layer of textile material and a layer of rubber, and of a reinforcing member of leather secured to the back of said cushioning member.

6. A hoof-pad comprising a body portion adapted to fit the toe and sides of the hoof, projections connected to said body portion and forming individual heel-cushions, and a connecting portion connecting said cushions at the heel of the pad and having a continuous recess on the under side, whereby the tread of the hoof is given a firm, and the frog a more yielding, support, said body portion being composed of a cushioning member comprising a layer of textile material and a layer of rubber, and of a reinforcing member of leather secured to the back of said cushioning member.

7. A hoof-pad comprising a body portion adapted to fit the toe and sides of the hoof, and projections connected to said body portion and forming individual heel-cushions, said body portion being composed of a bearing-strip of cushioning material comprising a layer of textile material and a layer of rubber, and a reinforce of leather secured to the

back of said bearing-strip, and said reinforce
having a connecting portion J connecting said
cushions at the heel of the pad so as to leave
a continuous recess on the under side, where-
5 by the tread of the hoof is given a firm, and
the frog a more yielding, support.

8. A hoof-pad comprising a body portion
adapted to fit between the shoe and hoof, hav-
ing a projecting portion within the contour
10 of the shoe at the toe thereof and having
projections at the heel in rear of the shoe
forming individual heel-cushions, and a con-
necting portion connecting said cushions at
the heel of the pad and having a continuous
15 recess on the under side, whereby the tread
of the hoof is given a firm, and the frog a
more yielding, support.

9. A hoof-pad comprising a body portion
adapted to fit between the shoe and hoof, hav-

ing a projecting portion extending within and 20
conforming to the contour of the shoe at the
toe and sides thereof and having projections
at the heel in rear of the shoe forming in-
dividual heel-cushions connecting with the 25
side portions of said projection whereby the
latter braces the heel-cushions, and a connect-
ing portion connecting said cushions at the
heel of the pad and having a continuous re-
cess on the under side, whereby the tread of
the hoof is given a firm, and the frog a more 30
yielding, support.

In witness whereof I have hereunto signed
my name in the presence of two subscribing
witnesses.

WILLIAM J. KENT.

Witnesses:

THOMAS F. WALLACE,
FRED WHITE.