

E. H. ERICKSON.
ARTIFICIAL LIMB.

APPLICATION FILED APR. 6, 1903.

NO MODEL.

2 SHEETS—SHEET 1.

Fig 1

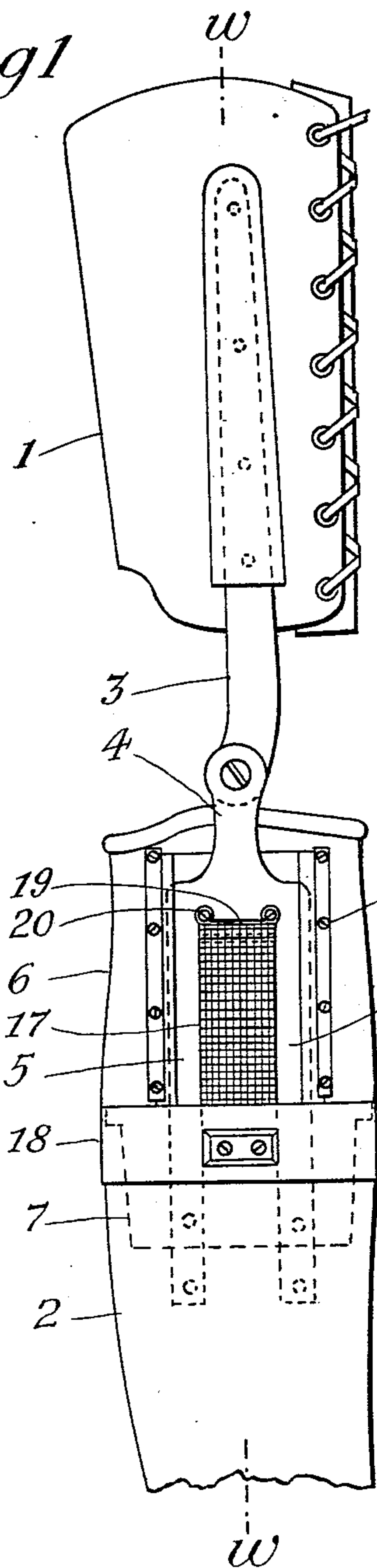
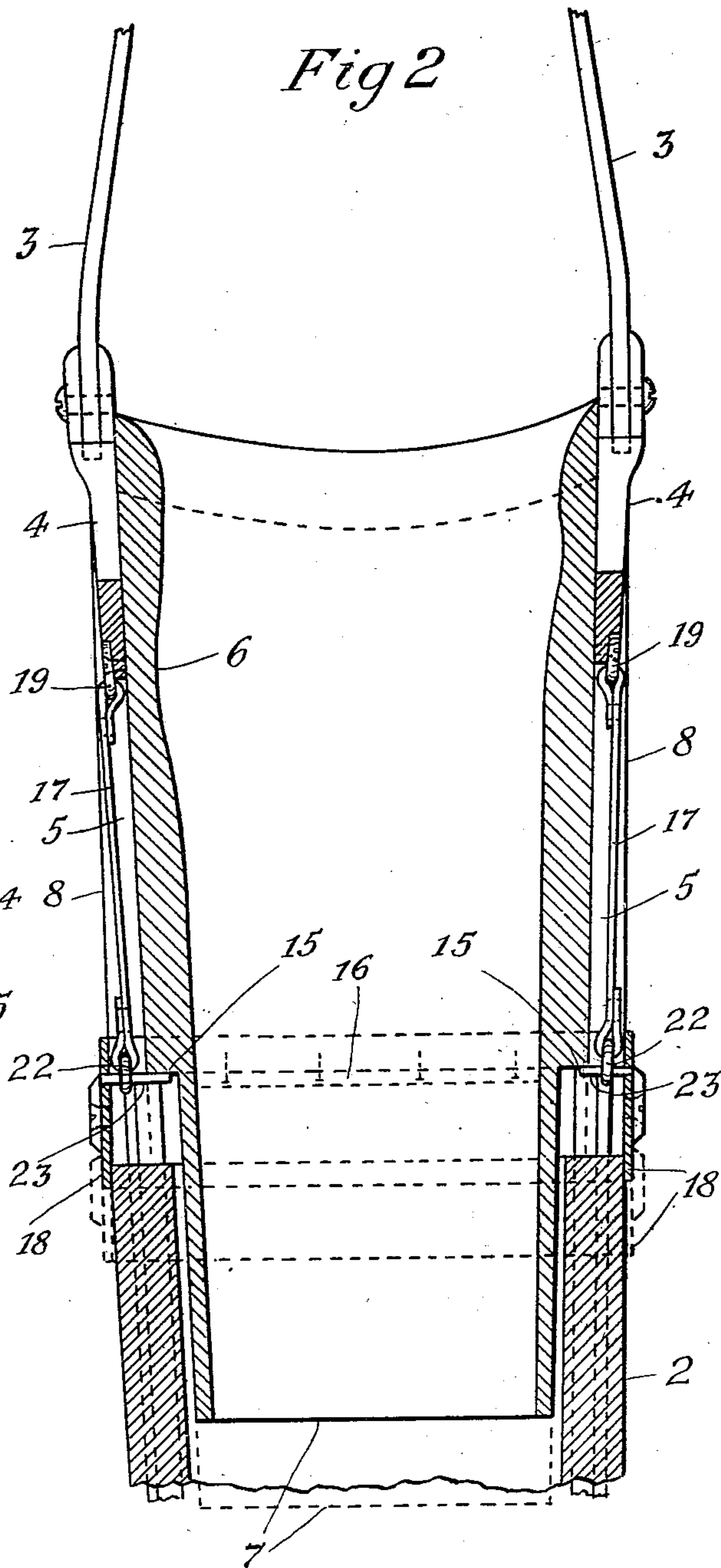


Fig 2



Witnesses

Theo. Lagaard.

H. A. Bowman.

Inventor

Erick H. Erickson

By P. H. Gunkel

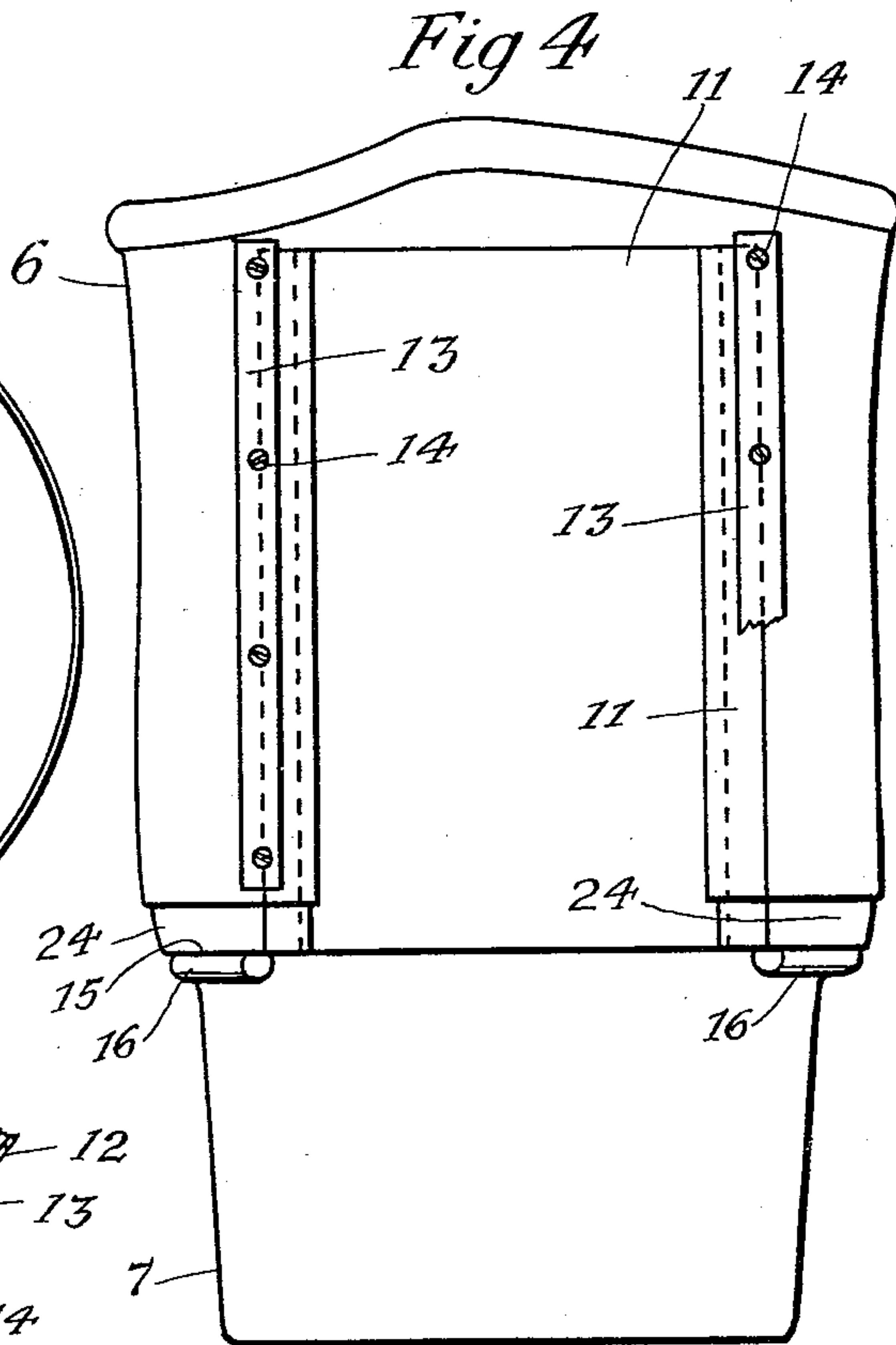
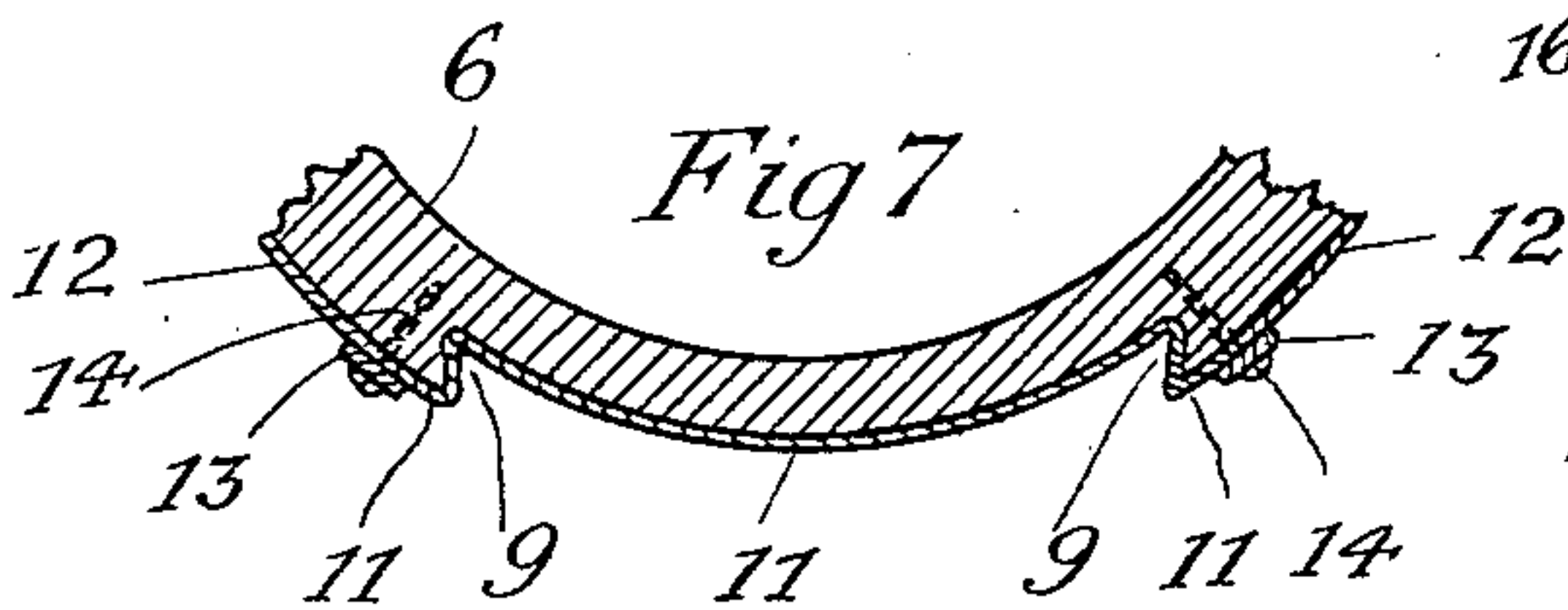
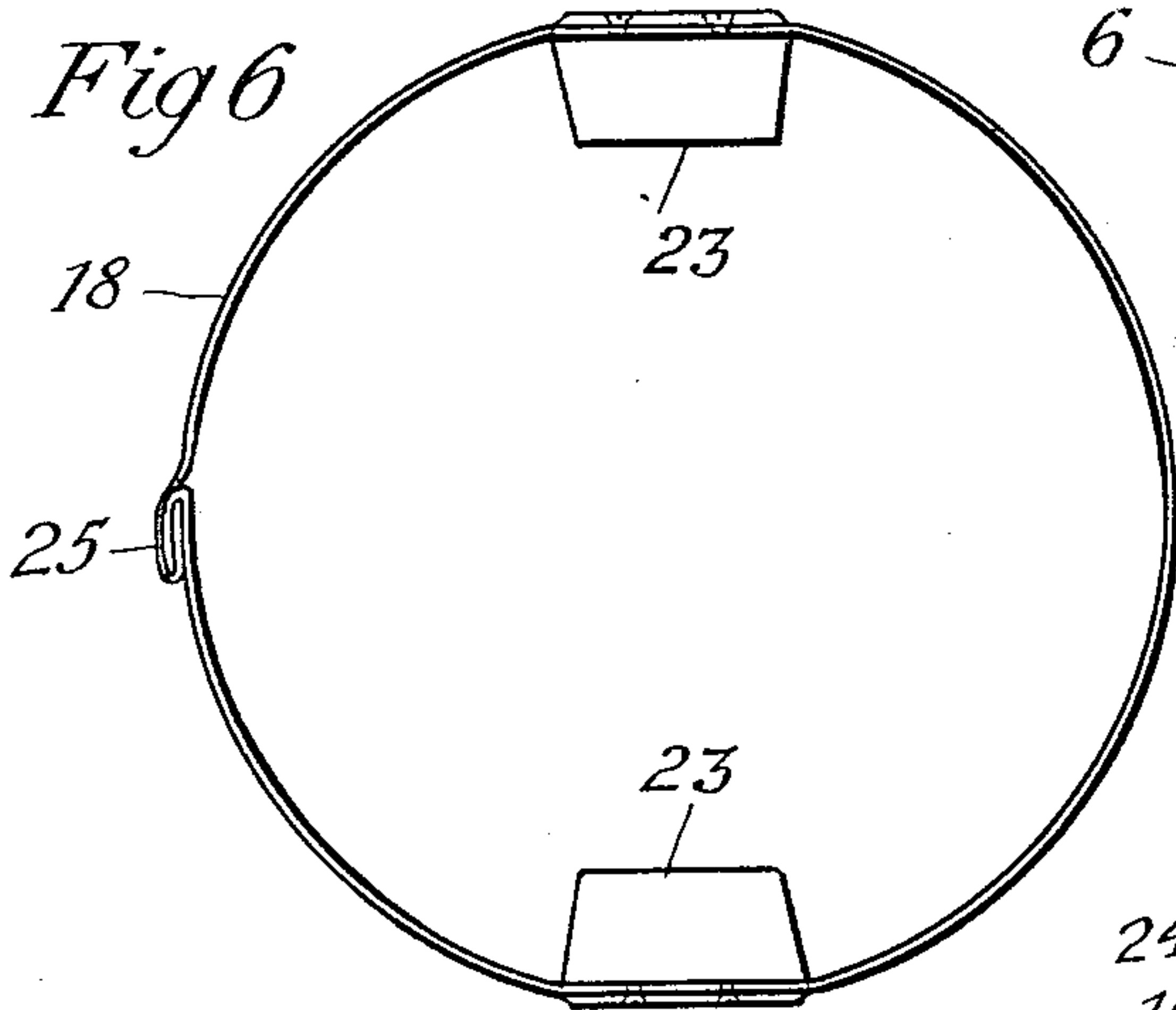
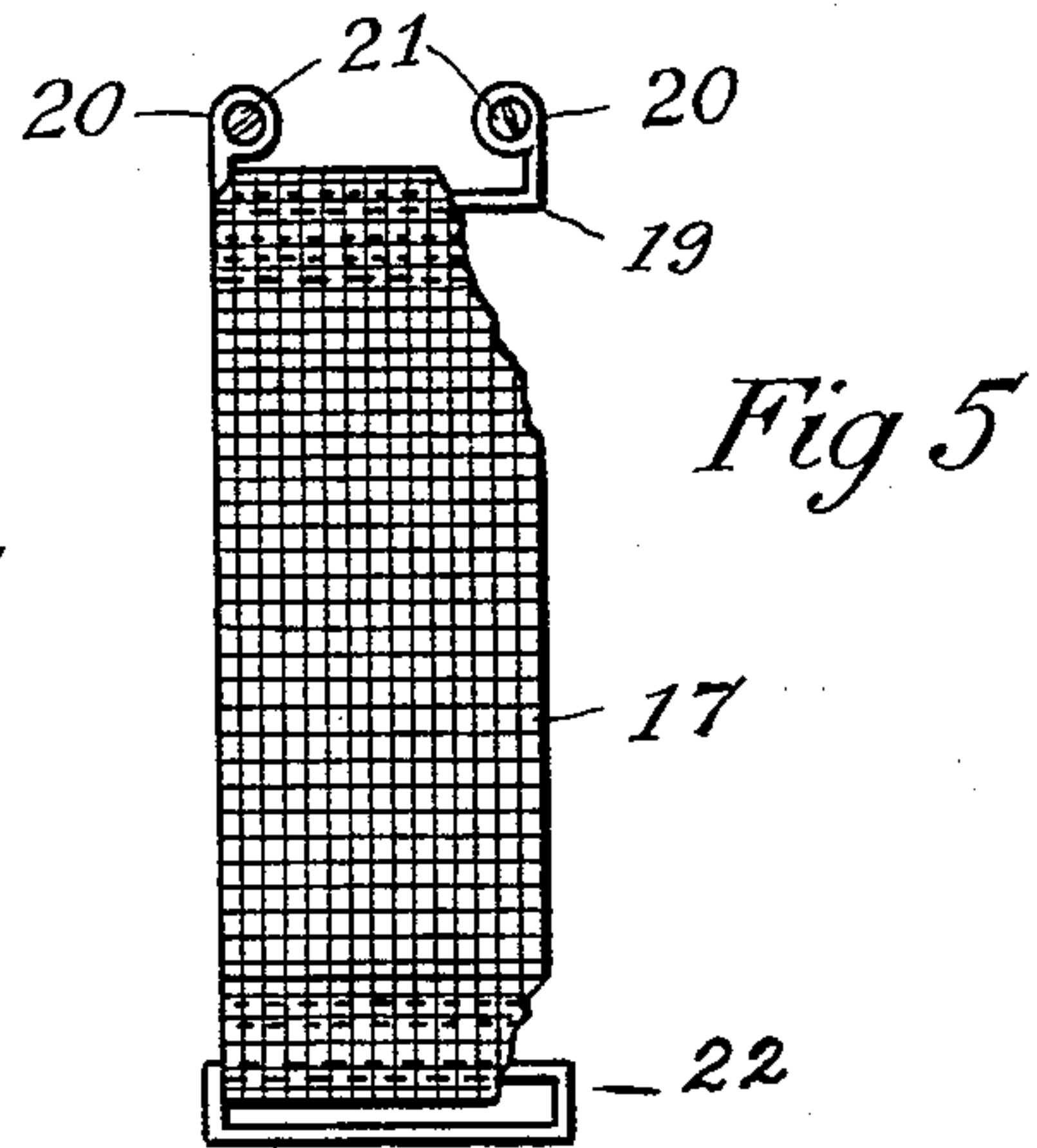
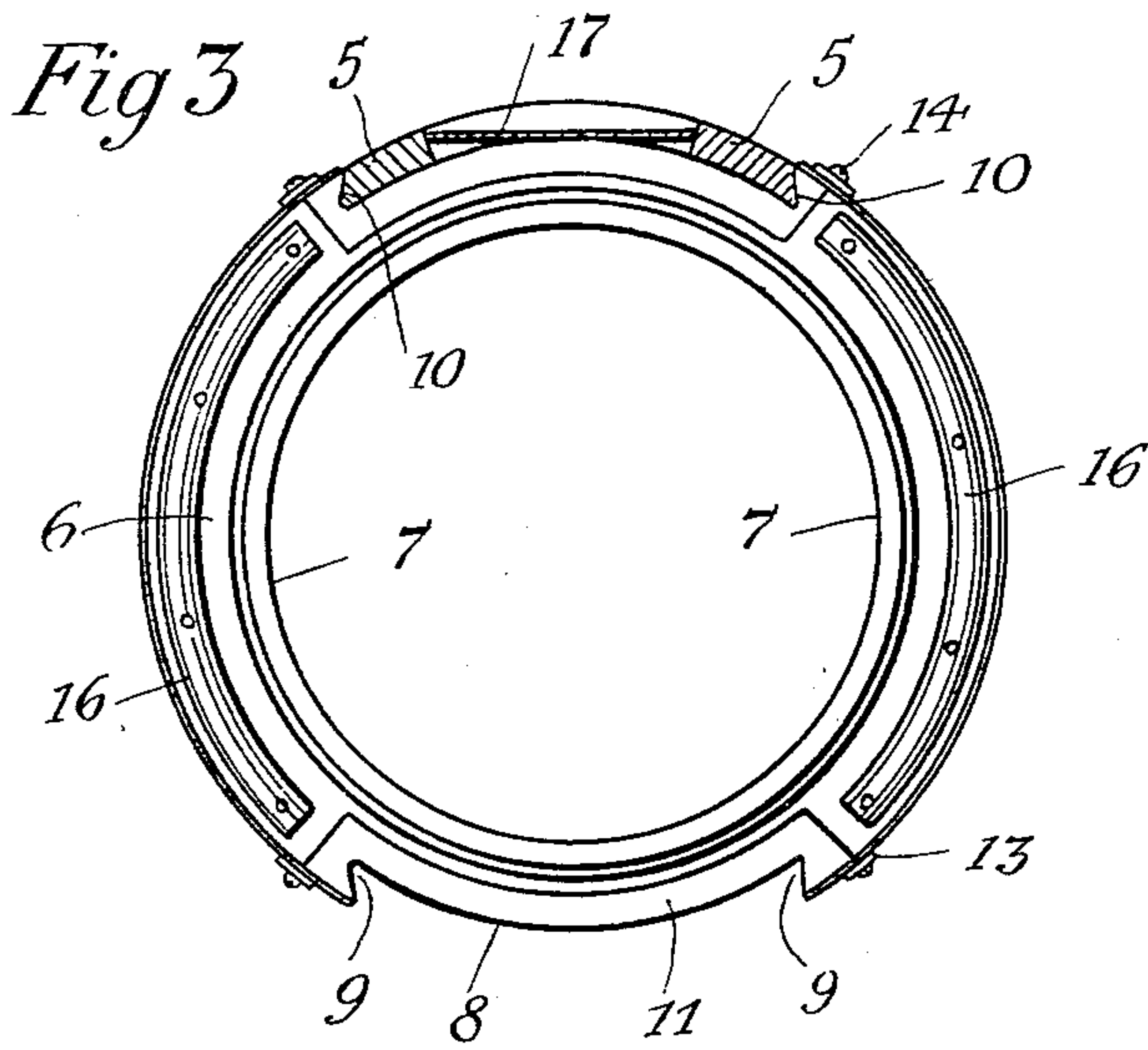
his Attorney.

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Inventor
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UNITED STATES PATENT OFFICE.

ERICK H. ERICKSON, OF MINNEAPOLIS, MINNESOTA.

ARTIFICIAL LIMB.

SPECIFICATION forming part of Letters Patent No. 733,472, dated July 14, 1903.

Application filed April 6, 1903. Serial No. 151,251. (No model.)

To all whom it may concern:

Be it known that I, ERICK H. ERICKSON, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Artificial Limbs, of which the following is a specification.

My invention relates to artificial limbs; and its principal objects are to improve the construction of the slip-socket and the lower limb portions and the means for operatively connecting those members of the structure.

The purpose of the improvements is to render the artificial limb more durable and more comfortable for the wearer, to improve the devices for connecting the socket to the main structure to prevent their separation while in use, and to simplify the construction and repair of the parts.

My improvements are illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of portions of an artificial limb containing the improvements. Fig. 2 is a sectional elevation, enlarged, of the lower limb portion on the line *ww* of Fig. 1. Fig. 3 is a plan view of the slip-socket. Fig. 4 is a side elevation of the same. Fig. 5 is a detail of one of the elastic straps and its connecting devices. Fig. 6 is a top view of the band or sleeve to which the elastic straps are connected, and Fig. 7 is a sectional detail of a portion of the socket.

In the drawings, 1 designates the thigh portion of ordinary construction, adapted to be secured to the thigh of the wearer, 2 the lower leg portion, and 3 and 4 the usual jointed metal side straps for flexibly connecting the thigh and lower leg members. The lower straps 4 have forks 5, the lower ends of which are firmly secured to the member 2, as is customary.

The slip-socket 6, which is the socket to receive the stump of the wearer's severed leg, fits slidably between and is guided in its movements by the strap-forks 5. The lower portion 7 of the slip-socket is preferably offset, and hence of less diameter than the main portion, and is arranged to slide freely within the upper portion of the member 2 and may be thus made to serve in part to guide the sliding movements of the slip-socket and in part to prevent displacement

of the parts when subjected to lateral strain.

In the sides of the socket 6 recesses 8 are provided, and the vertical walls of the recesses are undercut, as shown at 9, to receive the outer edges of the forks 5, which are beveled, as shown at 10, to fit within the ways 9, formed in the walls of the recesses 8. The object of this construction is to prevent the socket from lateral or twisting movement, while guiding it in its lengthwise or sliding movements. The surface and walls of the recesses 8 are covered with a thin piece of leather 11 or other suitable soft material, which is glued or connected to the socket. The joint between the edges of the leather 11 which overlap the margins of the recesses 8 and the leather 12, with which the body of the socket is covered, is concealed and secured by thin metal strips 13, that are fastened by screws 14 to the socket 6. The purpose of this construction is to enable the lining of the recesses 8 to be easily removed and replaced when required. This can be readily done by taking off the strips 13, tearing off and replacing the leather 11, and again fastening the strips. The shoulders 15 between the body portion 6 and the reduced lower portion 7 of the socket are provided with elastic cushions 16, preferably composed of rubber, to minimize the jar when the socket is pressed down to contact with the lower limb member. The elastic straps 17 for holding the slip-socket normally in its upper position and for returning it to such position from its lower position have their upper ends connected to the body of the metal strap 4 and their lower ends connected to a band or sleeve 18, that fits loosely over the top portion of the limb member 2. The upper ends of the straps 17 are attached to bails 19, formed of wire, having their ends extending upward and bent into eyes 20. These eyes seat in recesses in the strap 4 and are held in place by screws 21, and the eyes and screw-heads are flush with the surface of the strap. The lower ends of the elastic straps 17 are attached to oblong loops 22, adapted to engage catches 23, provided at the inside of the sleeve 18. When desired, the elastic straps can be readily detached from the ring by releasing the loops from the catches 23, and they can be entirely detached by removing the screws

21 and lifting the eyes 20 from their recesses. The sleeve 18 fits around a slight offset 24, formed at the lower margin of the socket-body and by reason of the tension of the elastic straps 17 moves up and down with the socket when the latter moves and serves to conceal as well as strengthen the joint between the socket and lower leg member. To enable the sleeve to be easily removed when desired, it may have a slip-joint, as at 25, formed by suitably bending and reflexing the two ends of the metal, so as to cause them to interlock, but permit their separation by sliding the laps oppositely up and down upon each other.

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

1. In an artificial limb, the combination, with the leg member, forked side straps attached thereto, and a slip-socket guided by the forks of the side straps; of a sleeve covering the exterior of the joint between the leg member and slip-socket, and elastic connections between the side straps and sleeve for holding the latter to contact with the slip-socket, substantially as set forth.

2. In an artificial limb, the combination, with the leg member, forked side straps attached thereto, and a slip-socket guided by the forks of the side straps; of a sleeve covering the joint between the leg member and slip-socket, elastic straps attached to the side straps, and means for detachably connecting them to said sleeve at its inner side, substantially as set forth.

3. In an artificial limb, the combination, with the leg member, forked side straps attached thereto, the forks having beveled outer edges, and a recessed slip-socket having the side walls of the recesses undercut to engage

the beveled fork edges for guiding the socket movements; of a sleeve covering the exterior of the joint between the leg member and slip-socket, and elastic connections between the side straps and sleeve for holding the latter to contact with the slip-socket, substantially as set forth.

4. In an artificial limb, the combination, with the leg member, forked side straps attached thereto, the forks having beveled outer edges, and a recessed slip-socket having the side walls of the recesses undercut to engage the beveled fork edges for guiding the socket movements, and removable linings for protecting said recesses against wear; of a sleeve covering the exterior of the joint between the leg member and slip-socket, and elastic connections between the side straps and sleeve for holding the latter to contact with the slip-socket, substantially as set forth.

5. In an artificial limb, the combination with the leg member, forked side straps attached thereto, and a slip-socket guided by the forks of the side straps; of a sleeve covering the joint between the leg member and slip-socket, the sleeve being formed of a strip of sheet metal having its ends detachably connected to enable it to be readily removed and replaced, elastic straps attached to the side straps, and means for detachably connecting them to said sleeve at its inner side, substantially as set forth.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 20th day of March, 1903.

ERICK H. ERICKSON.

Witnesses:

P. H. GUNCKEL,
H. A. BOWMAN.