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J. R. RICHER

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PACKAGE HOLDER

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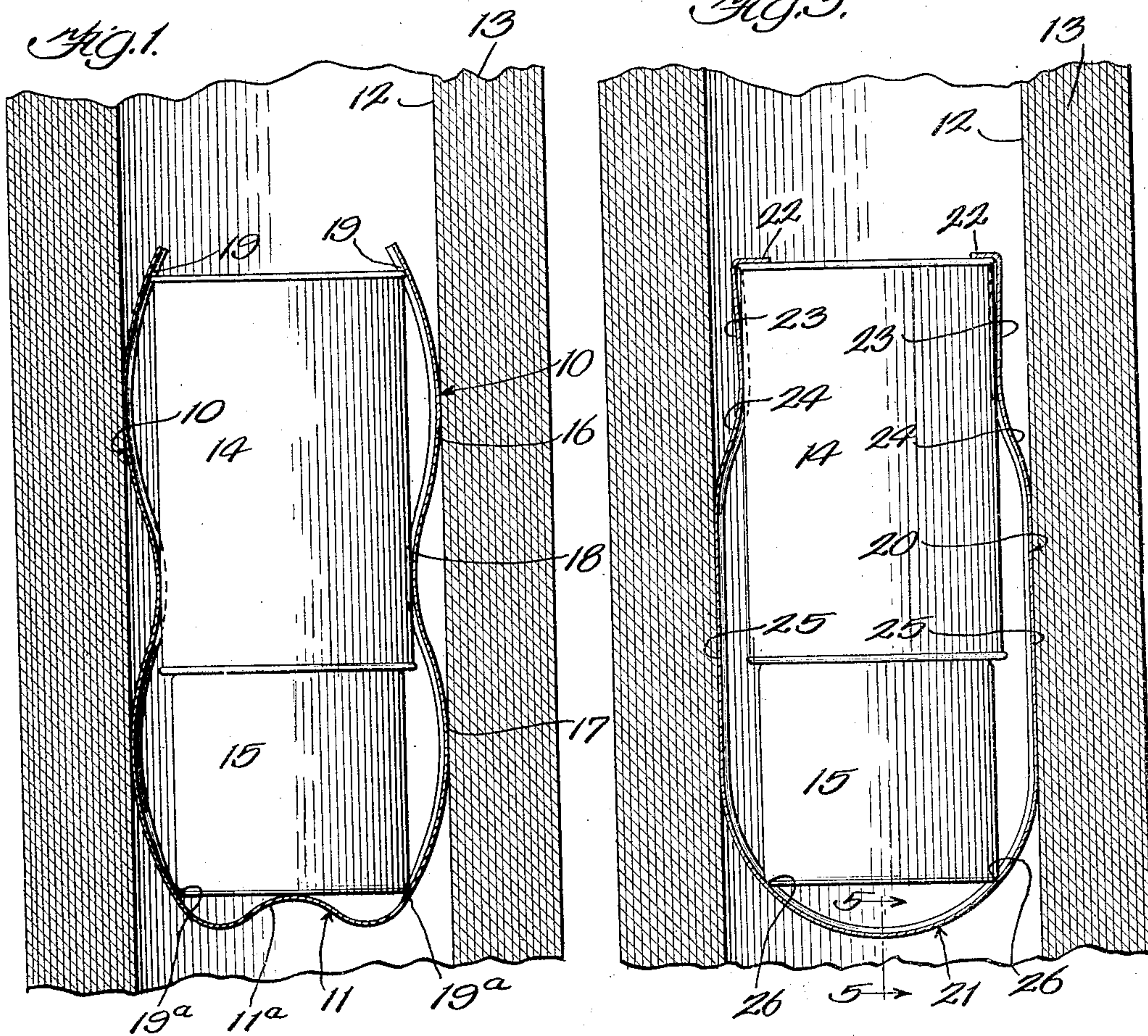


Fig. 2.

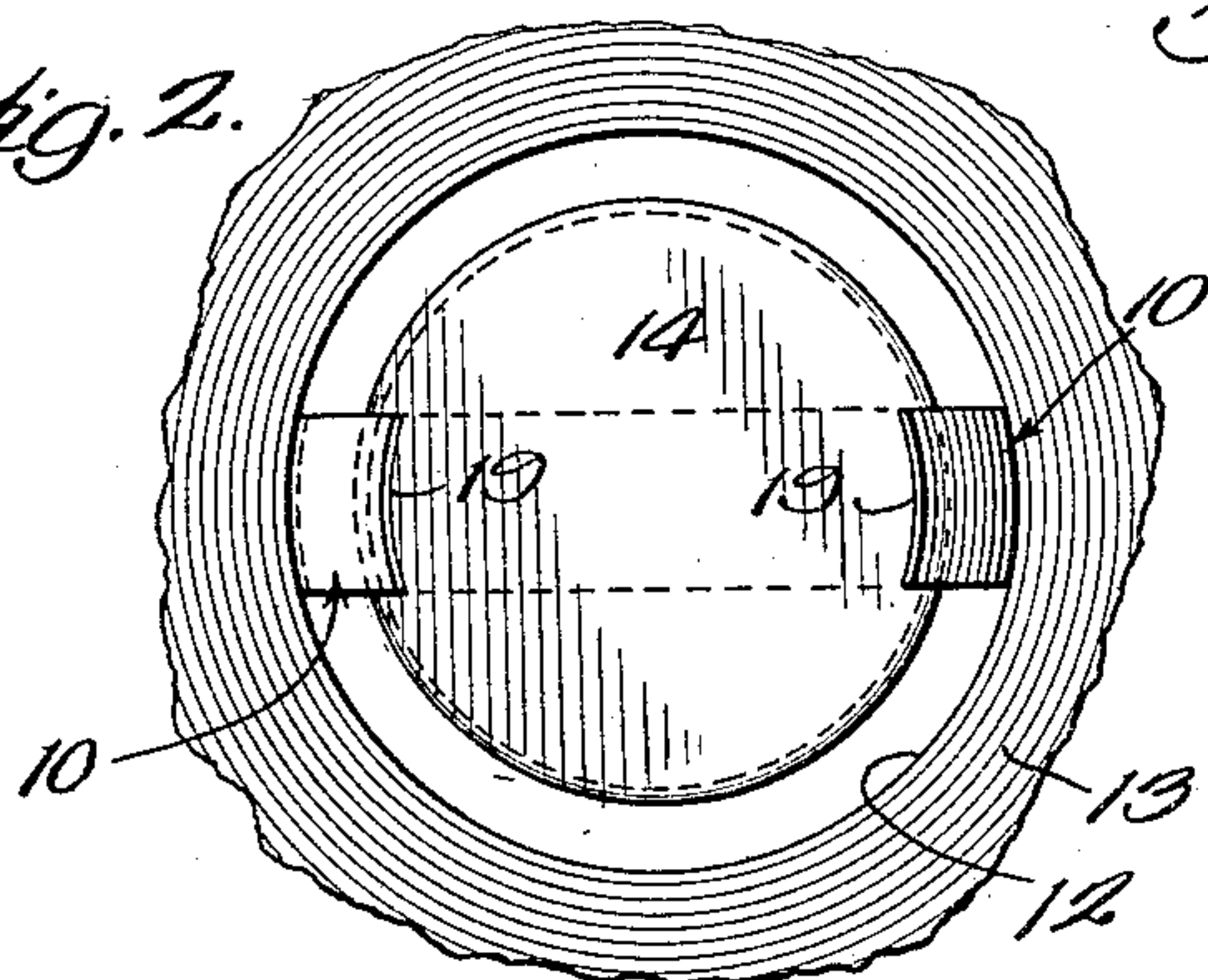


Fig. 4.

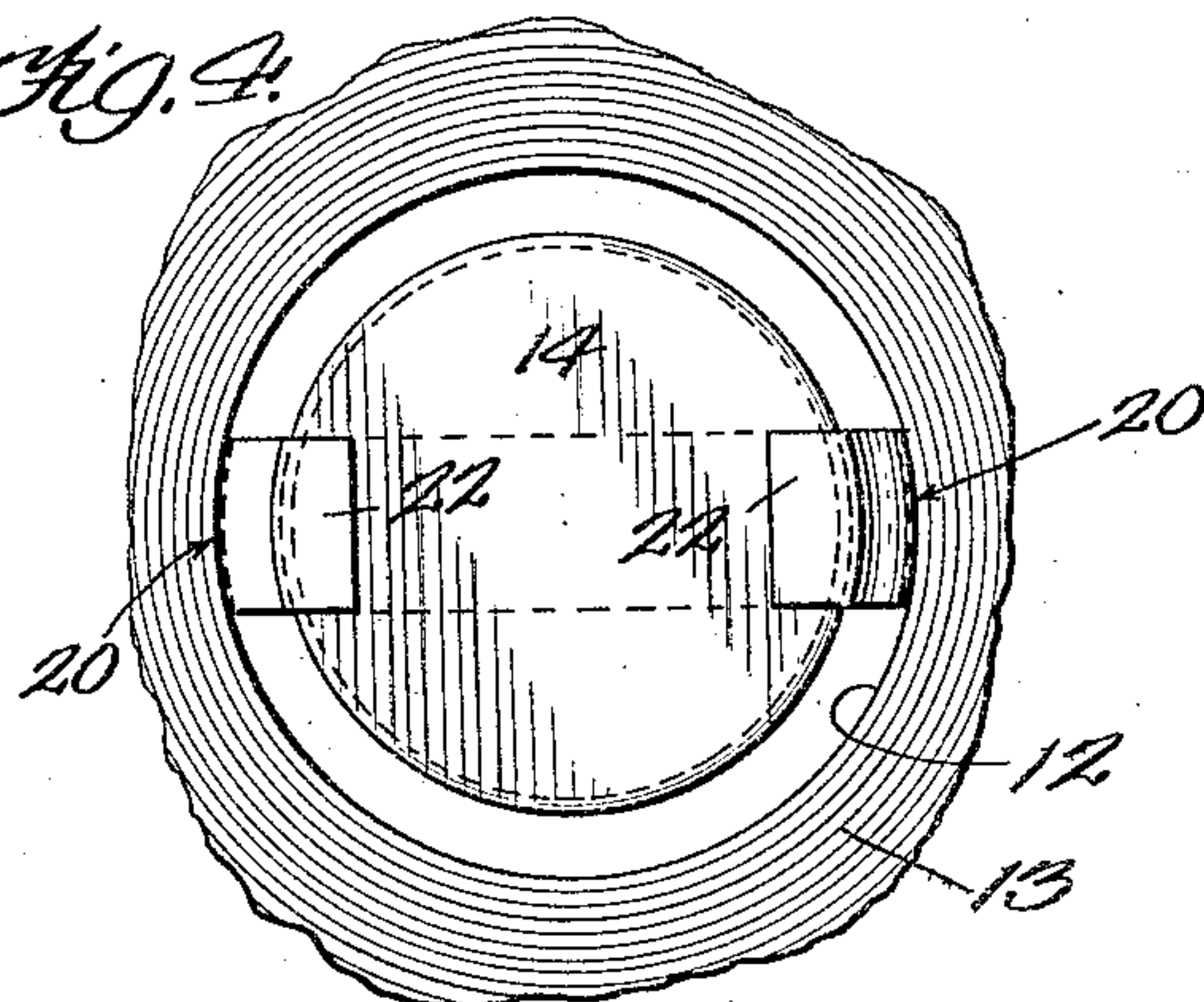
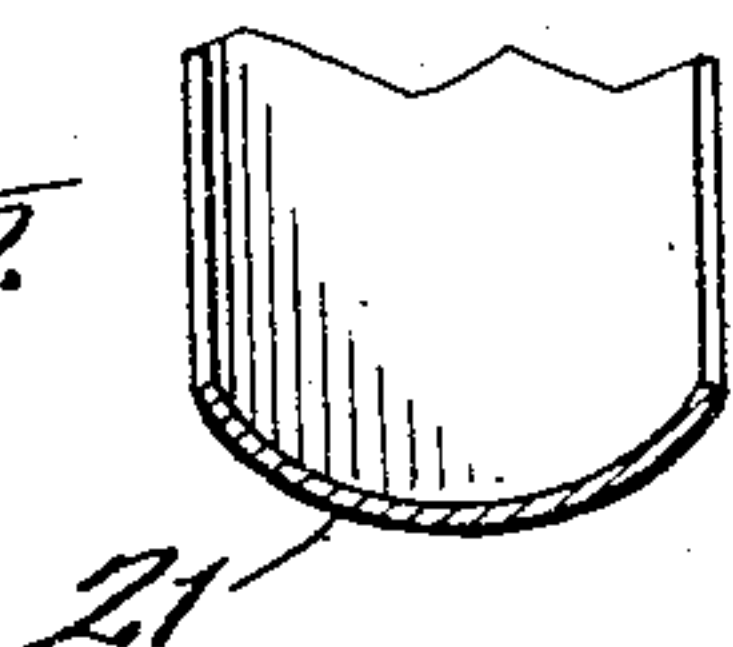


Fig. 5.



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PACKAGE HOLDER

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The invention relates generally to package holders and more particularly it relates to a holder adapted to retain one or more packages of nails, adhesive or the like within the bore of a roll of sheet material such as tar paper.

In preparing material such as tar paper for shipment and storage, it is customary to form the material into rolls having a central bore therethrough and since it is customary to supply with each roll a package of nails and a package of adhesive sealing material such as tar, such packages are usually made of a size which may be slipped into the bore of a roll.

The primary object of the present invention is to provide an efficient holder formed from a single piece of material and operable to retain one or more packages within the bore of a roll.

Another object of the invention is to provide such a holder having two side members both adapted to engage the bore at points spaced longitudinally thereof to prevent transverse wobbling of the holder and having the side members formed so that integral parts thereof act as springs to hold the members against the bore and to hold the packages against longitudinal movement in the holder.

Other objects and advantages will become apparent from the following description taken in connection with the accompanying drawing which illustrates the preferred embodiment of the invention together with one alternative embodiment thereof.

In the drawing:

Figure 1 is a fragmentary longitudinal sectional view through a paper roll illustrating the preferred form of the invention.

Fig. 2 is an end view thereof.

Fig. 3 is a fragmentary longitudinal sectional view through a paper roll illustrating an alternative form of holder.

Fig. 4 is an end view thereof.

Fig. 5 is a section taken along the line 5—5 of Fig. 3.

In the preferred form of the invention shown in Figs. 1 and 2 of the drawing, the holder is formed from a single strip of relatively thin sheet metal bent to provide two

side members 10 connected by a transverse member 11. The holder, when considered generally, is of substantially U-shaped form and the two side members 10 extend in substantially parallel relation so as to be adapted to be positioned within the bore 12 of a roll 13 of tar paper or the like. Between the two side members 10, a pair of packages 14 and 15 may be placed so as to be held in the desired position within the bore 12 by the action of the two side members 10.

In order that the holder may be maintained in the desired longitudinal position within the bore 12, it is made of metal having resilient properties and is formed so that a yielding pressure is exerted by the holder between the packages 14 and 15 and the sides of the bore 12. To this end each side member 10 is formed to provide two outwardly bowed arcuate portions 16 and 17 joined by a reversely or inwardly curved portion 18 located substantially at the mid-point of the member 10. With this construction, it will be seen that the outwardly curved arcuate portions 16 and 17 will contact the sides of the bore 12 at points spaced longitudinally thereof whereby to prevent wobbling of the holder within the bore.

This formation also serves to engage the two packages 14 and 15 to prevent both transverse and longitudinal movement of the packages within the holder. This result is attained through contact of one end of the arcuate section 16 with one end edge of the package 14 at the point 19, by contact of one end of the arcuate portion 17 with the end edge of the package 15 at a point indicated at 19^a, and by contact of the inwardly curved arcuate portion 18 with the side wall of the package 14. It will be seen that the angular contact of the side members with the end edges of the packages 14 and 15 at the points 19 and 19^a respectively forces the two packages longitudinally of the bore toward each other and also serves to prevent lateral displacement of the packages in the plane of the holder.

The arcuate portions 16, 17, and 18 are preferably made of an inwardly facing arcuate cross section so that the portions 16 and

17 each constitute an effective spring of the leaf type, and the compression of these springs by insertion of the holder into the bore 12 causes a resilient force to be exerted outwardly against the sides of the bore 12 so as to prevent longitudinal displacement of the holder. This compression of the arcuate spring sections 16 and 17 increases the force exerted on the containers at points 19 and 19^a and causes them to be firmly held in the desired position. It will be noted that the arcuate cross-sectional formation of the curved portions 16, 17, and 18 prevents lateral displacement of the package 14 in a direction perpendicular to the plane of the holder.

If desired, the connecting member 11 may be curved inwardly toward the end of the package 15, as indicated at 11^a (Fig. 1) to contact the central portion of the end of the package 15 and aid in positioning the packages longitudinally in the holder.

In the alternative form of holder shown in Figs. 3, 4, and 5 of the drawing a single strip of resilient sheet metal is bent to substantially U-shape to provide side members 20, connected by a transverse member 21 so that the packages 14 and 15 may be positioned between the two side members. The packages are held against longitudinal movement out of the holder by abutment at one end with the transverse member 21 and by abutment at the other end with means comprising lugs 22 formed by inward bending of the other ends of the members 20.

The members 20 and 21 are preferably of inwardly facing arcuate cross sections (Figs. 4 and 5) whereby to increase their strength and resiliency and conform with the surfaces of the bore 12 and the packages. At their free ends, the members 20 have straight sections 23 (Fig. 3) of substantial length which are adapted to be pressed firmly against the sides of the package 14 to prevent displacement of that package transversely of the holder.

When the holder with the packages therein is placed in the bore 12 of a roll, sections 23 are pressed into firm contact with the package 14 by resilient means forming a part of each side member 20. As herein shown, this means comprises a curved portion 24 of each side member which connects with a second straight portion 25 offset radially outwardly from the section 23 of that member and connected at its other end to the transverse member 21.

In the inserting movement of the holder, after the sections 23 are in contact with the package 14, each curved portion 24 is distorted and acts as a spring to exert a yielding force against the bore 12 through its attached portion 25 whereby to prevent longitudinal movement of the holder in the bore. It will be noted that the portions 25 are of

substantial length and serve to prevent wobbling of the holder.

The transverse member 21, which is joined to the other ends of the portions 25, is in the present instance of arcuate form as shown in Fig. 3, and its action in maintaining the sections 25 separated from each other is strengthened by its arcuate cross-sectional form shown in Fig. 5.

Due to its curved form, the member 21 engages the end edges of the package 15 at an angle to the axis of the bore as indicated at 26 (Fig. 3), and in the movement of the members 20 toward each other, the transverse member 21 is firmly pressed against the package 14 and prevents both longitudinal and transverse movement of the package in the holder.

When transverse movement of the ends of the arcuately formed member 21 has been stopped by contact at 26 with the package 14, the curved portions of the member 21 between the points 26 and the portions 25 act as springs to increase the yielding forces acting on the sides of the bore.

From the foregoing it will be apparent that the invention provides an economical and effective package holder which may be formed from a single piece of relatively thin material and which utilizes efficiently the resilient properties of the material. The action of the device is substantially the same, whether the packages 14 and 15 are separate or in one piece, and hence I do not wish to be limited in this respect. The term package is therefore used in a generic sense, in which it denotes one or more containers.

The forms of the invention disclosed herein both embody two side members, but it will be understood that the invention, might be embodied in a holder having but a single side member without departing from the spirit and scope of the invention as defined in the appended claims.

I claim as my invention:

1. A holder for retaining a package in the bore of a roll, said holder comprising a single strip of sheet metal adapted to extend between a package and the side of a bore, and formed intermediate its ends to exert a yielding force between the bore and the package, and formed at its ends to provide means to hold the package against displacement longitudinally of the strip.

2. A package holder comprising a strip of sheet metal adapted to extend between a package and the side of a bore in which the package is positioned, said strip being formed to engage the package at a plurality of points spaced longitudinally of the bore and to engage the side of the bore at a plurality of points spaced from each other and from said first mentioned points longitudinally of the bore, with portions of the strip between the points of engagement with the bore and the

package shaped to form springs acting to exert a yielding force between the bore and the package.

3. A package holder of the character described comprising a strip of resilient sheet metal adapted to extend between a package and the spaced side of a bore in which the package is positioned, said strip being formed to engage the bore at a plurality of points spaced longitudinally of the bore, and to extend arcuately from said points into contact with the package.

4. A package holder of the character described comprising a strip of resilient sheet metal adapted to extend between a package and the spaced side of a bore in which the package is positioned, said strip being formed to engage the bore at a plurality of points spaced longitudinally of the bore, and to extend arcuately from said points into contact with the package, one of the arcuately extending portions of the strip having means formed thereon to prevent movement of the package in one direction, and the other arcuately extending portion being arranged to extend across the end edge of the package at an angle to the axis of the bore to limit its movement in the other direction.

5. A package holder of the character described comprising a strip of sheet metal having two bowed portions formed therein extending laterally in the same direction.

6. A package holder of the character described comprising a strip of sheet metal bent to a substantially U-shape to provide an end member and two side members, one of said side members having two outwardly extending bowed portions formed therein.

7. A package holder of the character set forth comprising a resilient strip of substantially U-shape providing two side members and an end member, said end member having an inwardly bent arcuate portion adapted to engage the end of a package positioned in the holder, and one of said side members being bowed outwardly to form a spring to act between the package and the side of a bore.

8. A package holder of the character described comprising a strip of sheet metal bent to a substantially U-shape to provide two side members and an end member, one of said side members being of arcuate cross section and having two bowed portions formed therein, both extending away from the other side member.

9. A package holder of the character described comprising a strip of sheet metal bent to form two substantially parallel straight portions offset longitudinally from each other and joined by a curved portion, a lug extending laterally from the end of one of said straight portions, and an arcuate section formed from the strip at the remote end of the other straight portion and extending in the same direction as said lug.

10. A package holder of the type illustrated comprising a sheet metal strip of arcuate cross section having a longitudinally extending straight portion adapted to extend along the side of a bore, and arcuate portions at each end of said straight portion and each adapted to extend toward the center of the bore and into contact with and to act as springs against a package positioned between the strip and the other side of the bore.

11. A package holder of the character described comprising a strip of relatively thin sheet metal bent to a substantially U-shape with its side members of arcuate cross section to provide stiffness therein and its bottom member of arcuate cross section to provide resiliency to spread the side members apart and into contact with the sides of a bore, said side members being curved inwardly toward each other adjacent their free ends to form springs to act against a package to force the side members against the sides of the bore.

In testimony whereof, I have hereunto affixed my signature.

JOSEPH R. RICHER.