

J. W. DENMEAD.

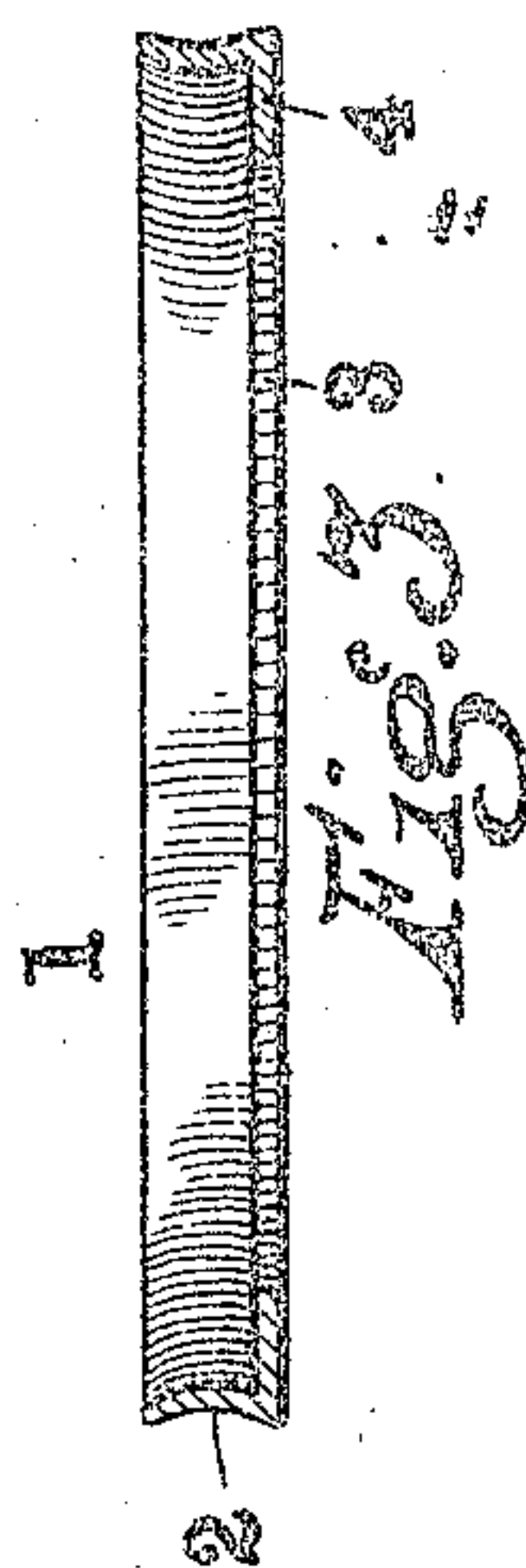
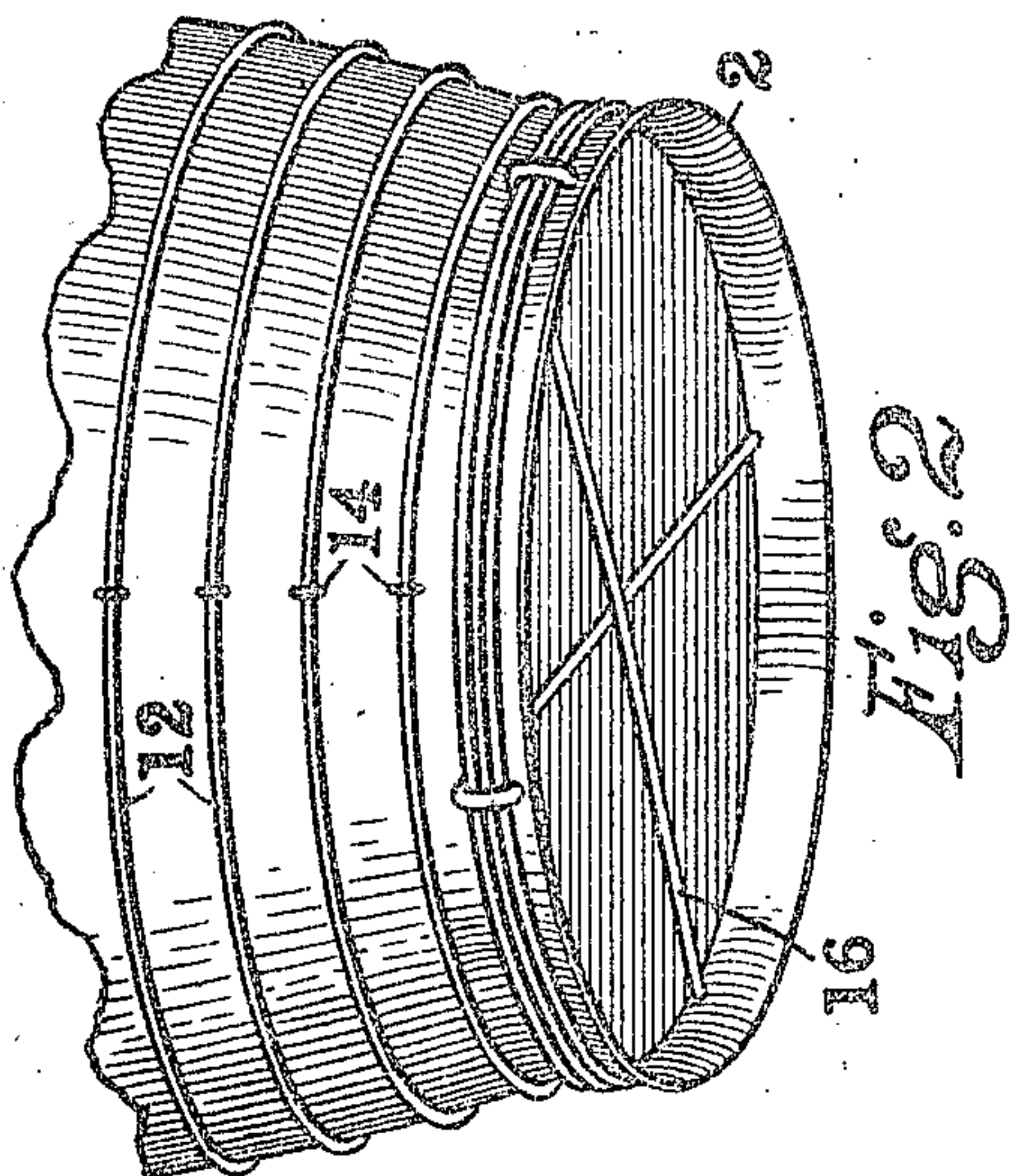
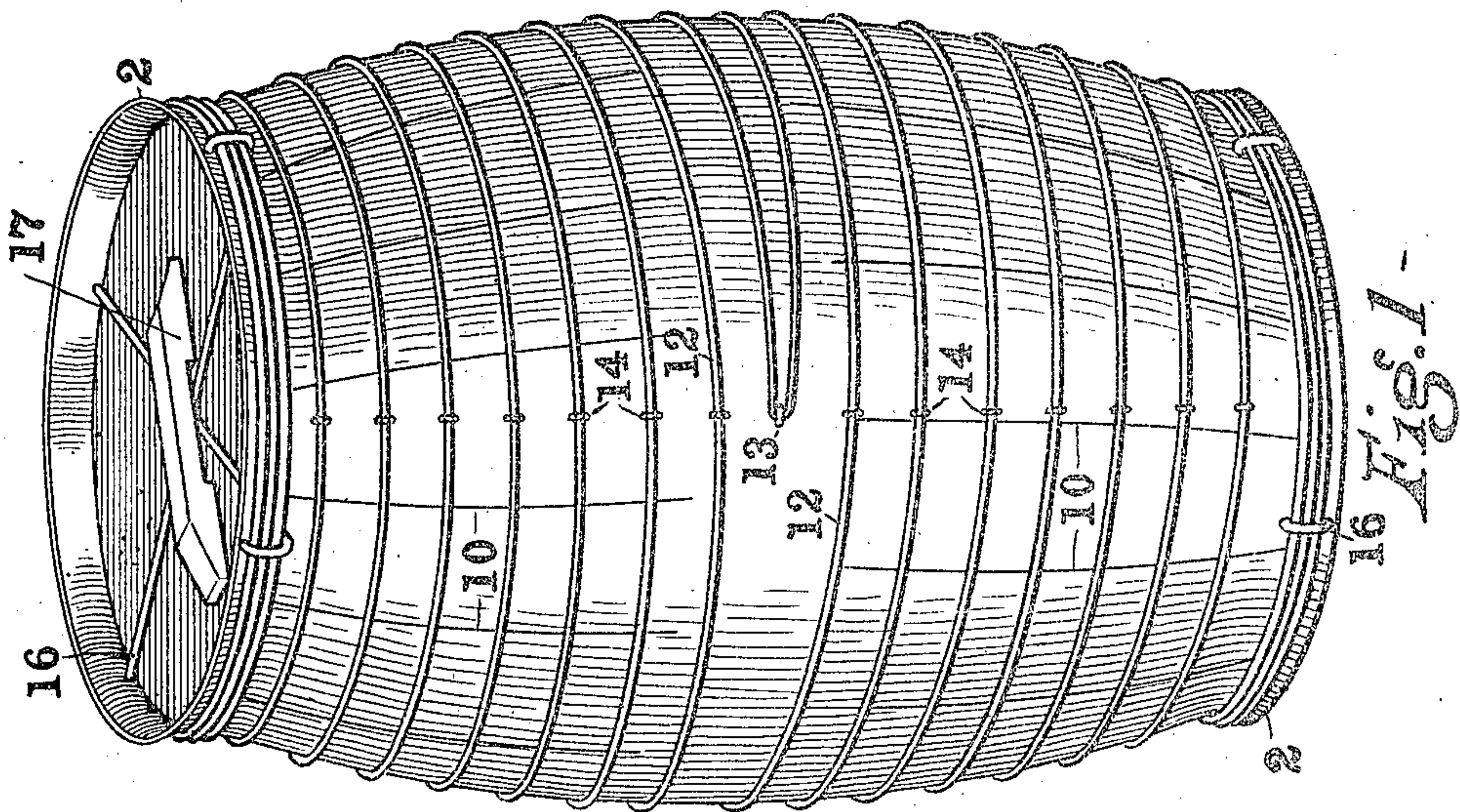
BARREL.

APPLICATION FILED MAR. 6, 1908.

934,051.

Patented Sept. 14, 1909.

2 SHEETS—SHEET 1.



Witnesses:

Klara Fox
Ema Blinn

INVENTOR—

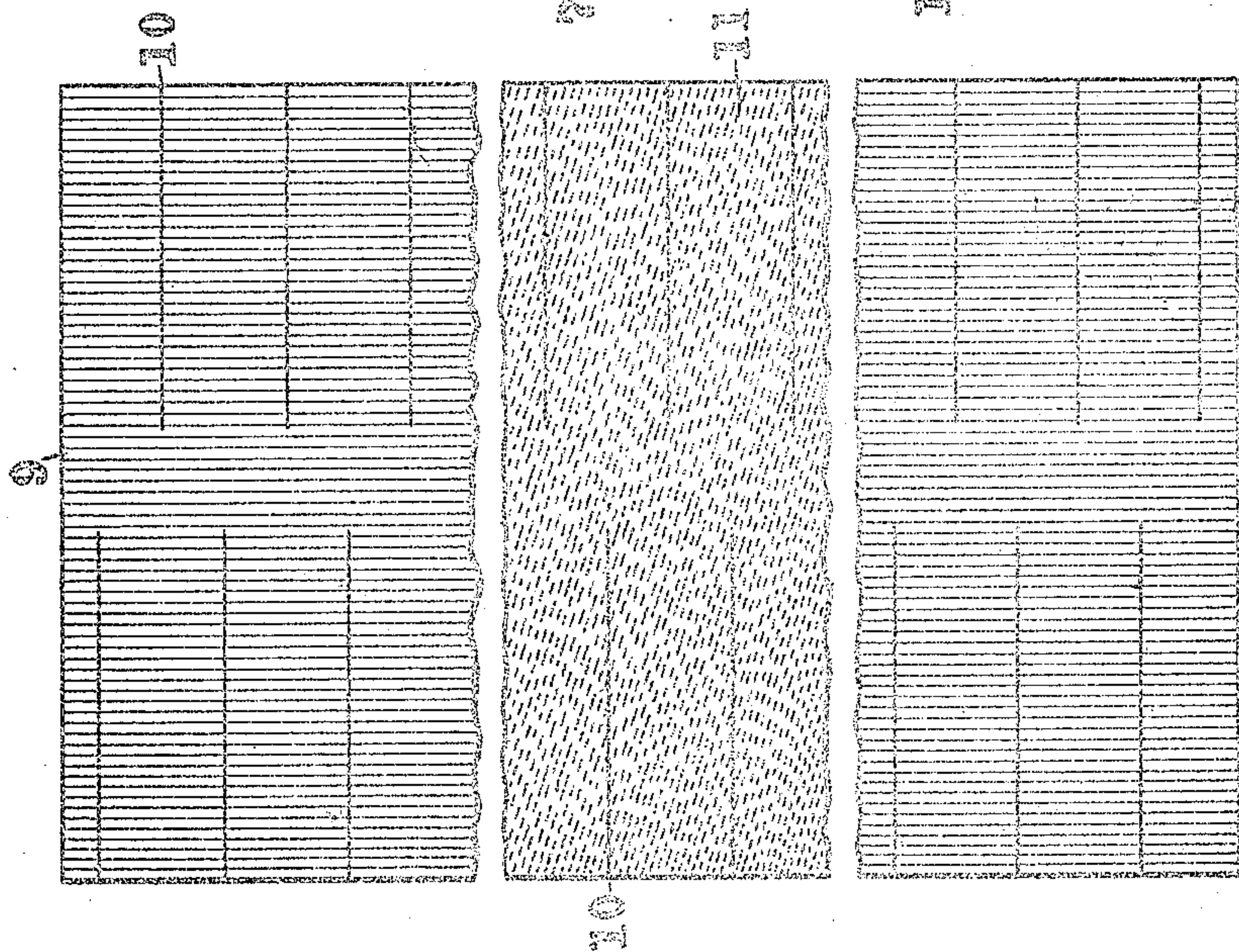
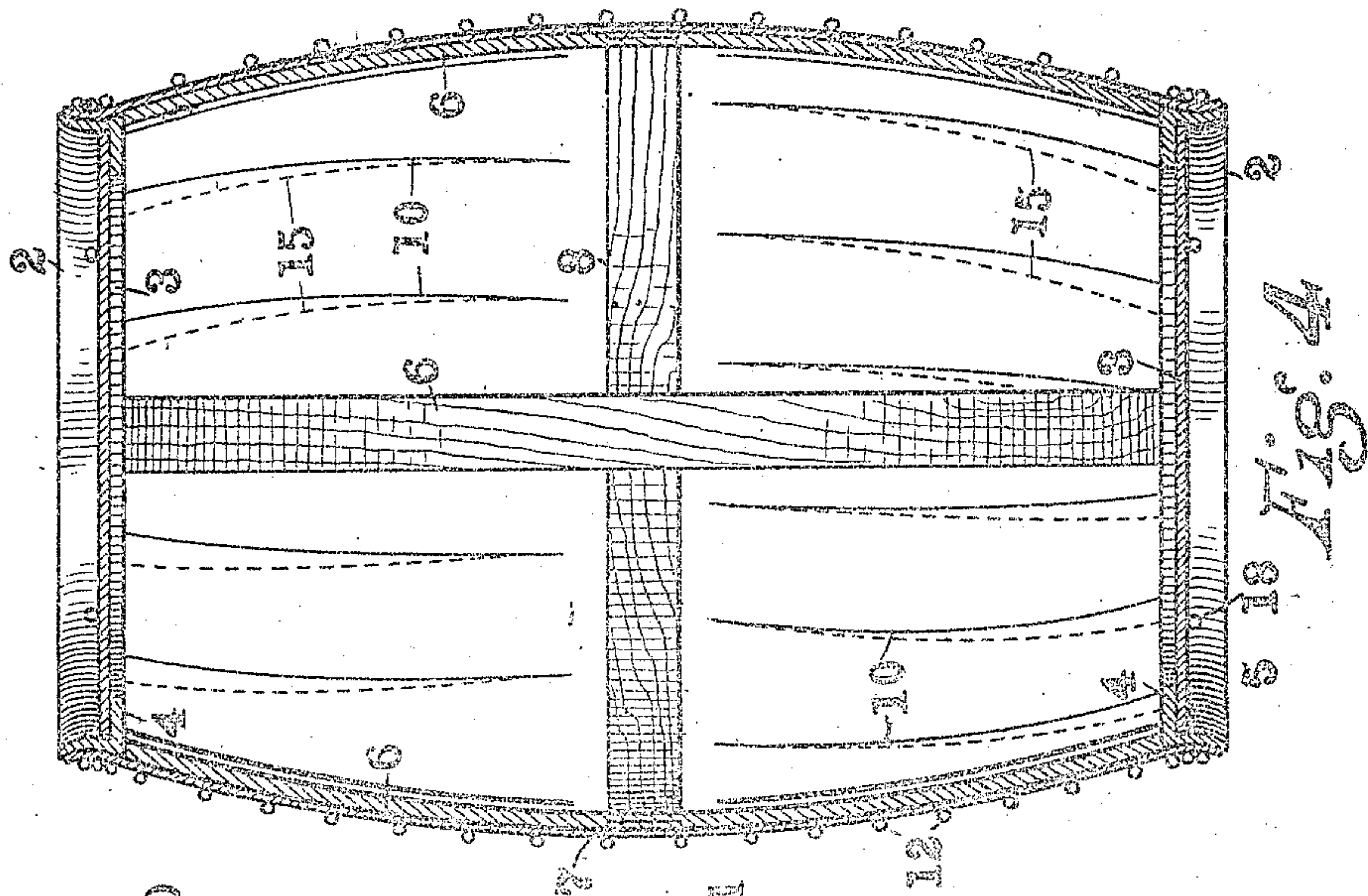
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INVENTOR—

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Glenara Fox
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UNITED STATES PATENT OFFICE.

JOHN W. DENMEAD, OF AKRON, OHIO, ASSIGNOR OF ONE-HALF TO JAMES CHRISTY, OF AKRON, OHIO.

BARREL.

934,051.

Specification of Letters Patent. Patented Sept. 14, 1909.

Application filed March 6, 1908. Serial No. 419,560.

To all whom it may concern:

Be it known that I, JOHN W. DENMEAD, a citizen of the United States, residing at Akron, in the county of Summit and State of Ohio, have invented new and useful Improvements in Barrels, of which the following is a specification.

This invention relates to improvements in barrel construction and the object thereof, broadly speaking, is to construct a barrel having new and improved means for forming the body and heads thereof and novel means for uniting them together in such a manner as will render the completed article strong, simple and durable, efficient in use, cheaply made and easily set up.

Other advantages constituting objects of this invention will more fully appear in the subjoined description.

A practical embodiment of my invention is illustrated in the accompanying drawings in which similar reference numerals indicate like parts in the different figures.

Referring to the drawings Figure 1 is a perspective view of a barrel constructed in accordance with this invention. Fig. 2 is a perspective view showing the lower head or end of a barrel. Fig. 3 a sectional view of a member used for forming an end of the barrel. Fig. 4 a view in vertical, central section of the barrel shown in Fig. 1, and, Fig. 5 is a plan view of a strip of material from which the body portion of the barrel is formed.

Before entering upon a detailed description of the drawings it will be stated that in setting up a barrel constructed as hereinafter described, a former is employed on which the various parts are mounted during the making of the barrel which is collapsed and removed from the interior of the barrel after its formation, but as formers of this construction are in common use and as the construction of the former constitutes no part of this invention, no description thereof is given.

Referring to the drawings in detail, the ends or heads of the barrel consist of a member 1 of suitable material provided with an annular lateral flange 2 having a grooved or concave outer periphery and a convex inner surface. The flange 2 is preferably formed integral with the member 1 by bending or shaping it so that a desired cross sectional configuration is secured. The member 1

may be imperforate or may be provided as shown in Fig. 3 with a large central opening 3 leaving an inwardly-extending annular flange 4. In this latter case the opening 3 in the member 1 is closed by means of a circular disk 5 which is held in place by being crowded into position in contacting engagement with the annular flange 4 and held there by frictional engagement with the inwardly-bulging or convex face of the lateral flange 2 and also by other means to be hereinafter described.

In setting up a barrel the members 1 are oppositely-disposed to each other on the outer ends of a collapsible former (hereinbefore mentioned) with their lateral flanges 2 outwardly-extending and between them are placed and temporarily supported by the former a plurality of reinforcing members 6, 6, hereinafter called staves with their inner ends in snug contact with the annular flanges 4 of the members 1. The staves 6, 6, are preferably provided at their bilge portions with exteriorly-placed transverse, shallow grooves 7 to receive a hoop 8 which is designed to inclose them and prevent their outward bulging under any longitudinal strain or pressure which they may receive.

The body of the barrel consists preferably of a single continuous strip 9 (see Fig. 5) of suitable material such as paper of a width to extend longitudinally of the barrel and overlap the members 1, 1. The strip 9 is provided on both sides of the medial portion thereof with a preferably continuous series of transverse cuts 10 extending from the side edges inwardly, preferably so placed that the cuts of the series on one side will alternate in position with respect to the cuts of the series on the opposite side. The strip 9 is then placed so that its uncut medial portion is in alinement with the bilge portion of the former which bears the heads 1, 1, staves 6, 6, and hoop 8 and is snugly wrapped one or more times thereabout, care being taken in positioning the strip that the uncut medial portion thereof covers the bilge portion of the former. The length of the strip will be sufficient to permit as many wrappings thereof around the former as will be necessary to secure a desired strength and thickness in the body of the barrel, but experience has shown that ordinarily at least three or more layers or wrappings of the strip will be required. Commencing at a

point sufficiently remote from the end of the strip which is first wrapped about the former to permit it to make one complete wrap around the former, I preferably coat
 5 a portion of one face of the strip with an adhesive composition so that the successive layers or wrappings of the strip onto the former will adhere to each other. As the front end of the strip 9 will form the inner
 10 surface of the barrel it is not coated with paste for this reason, but any other portion or portions of the remainder of the strip which experience shall show to be best may be coated or not with such adhesive mixture.
 15 In Fig. 5 the adhesive mixture is indicated by dotted lines and referred to by the reference numeral 11. When the successive wrappings of the strip 9 about the former have been completed it will be in the form
 20 of substantially a true cylinder with the uncut medial portion surrounding the bilge of the former and the portions containing the cuts 10 extending on both sides thereof. The cuts 10 of each series in the strip 9, in
 25 addition to being so placed that they will alternate with the cuts in the other series, are also positioned to cause the cuts in each successive superimposed layer to alternate in position with the uncut portions of adjacent
 30 layers. By this is meant that the portions of the second layer for instance between the cuts thereof will overlap the cuts 10 in the first or preceding layer and the cuts in the third layer will be opposite these same uncut
 35 portions in the second layer and so on.

In my improved construction the ordinary hoops or retaining means for the staves are customarily dispensed with and a wire
 40 spirally wound about the exterior of the body of the barrel is used in lieu thereof and a preferred manner of positioning this wire consists in securing the medial portion of a
 45 single wire 12 by means of a staple 13 to the bilge portion of the barrel body by driving the staple through the strip 9 into one of the staves 6 or the hoop 8 after which the
 50 two ends of the wire are wound, preferably simultaneously, in a spiral formation around the barrel outwardly in each direction each terminating in a plurality of convolutions
 55 about the outer edges of the strip 9 which rest over the concave portions of the flanges 2 of the member 1 with the ends thereof secured in any preferred manner against accidentally becoming loose. The various suc-
 60 cessive convolutions of the wire 12 are secured against displacement by means of staples 14 driven into the staves 6 in approximately parallel rows from one end of the barrel to the other.

As has been already stated, at the time of the commencing of the wrapping of the wire about the barrel, the successive layers of the strip 9 are in substantially cylindrical for-
 65 mation, but as the wires are wrapped there-

about under tension the sides of the strip 9 are gradually compressed and brought inward by the compressive action of the tensely-drawn wire which causes the portions of the strip 9 between the cuts 10 to
 70 gradually lap each other, the laps being progressively increased in degree as the outer portions of the strip come under the action of the wire, the lapping of the portions of the strip 9 being indicated in Fig. 4 by dotted
 75 lines 15. The wrapping of the wire under tension over the edge or marginal portions of the strip 9 which rests on the concave outer peripheries of the flanges 2 causes these portions of the strip to be tightly compressed
 80 against these flanges thereby securing all parts against displacement and forming between the flanges and the strip 9 which constitutes the body of the barrel a comparatively tight joint.
 85

In order to secure the disks 5 firmly in position within the flanges 2 of the heads 1 and also to assist in holding those portions of the wire 12 which secure the strip 9 onto the outer surfaces of the flanges 2, I preferably pass one or more cross wires 16 through
 90 suitably-placed openings 18 in the flanges 2 across the faces of the disks 5 and outwardly through the flanges where the ends of the wires are bent to inclose and constitute re-
 95 taining means for the wire 12 which surrounds the marginal portions of the strip 9. The wires 16 when in position are preferably tense so as to afford a reinforcement or strengthening means against any bulging ac-
 100 tion of the disks 5 which would tend to permit them to be accidentally dislodged.

In order to enable the upper disk 5 to be readily removed for the purpose of gaining access to the contents of the barrel I provide
 105 the same with a handle 17 which is secured to the disk by any ordinary means. From this it will be seen that a barrel constructed in accordance with the foregoing description will be provided with rigid chimes between
 110 which extends a smooth homogeneous rigid body formed of a stiff material of even thickness and comparatively smooth on its interior which is reinforced on the outside by a strengthening wire or wires which pre-
 115 vents lateral distension of the barrel under pressure or weight applied to the ends thereof which is further aided by the presence of the staves and their encircling hoop 8.

If desired, the bottom of the barrel may
 120 be made in a single piece or it may be constructed as shown in the drawings with an opening closed by a disk 5 secured in place by cross wires 16. The cross wires 16 in the head of the barrel also constitute means for
 125 sealing the same for preventing any surreptitious opening thereof.

What I claim, is:—

1. A barrel comprising end members having lateral flanges provided with circum-
 130

ferential grooves in their outer faces, staves extended between said end members, a hoop engaging portions of said staves between the ends thereof and a body portion consisting of a continuous strip of material having cuts extending inwardly from the side edges thereof leaving the material between said cuts intact and lapping said flanges, a wire having its medial portion secured to the bilge portion of said barrel and extending outwardly in spiral convolutions about said body portion and terminating in a wrap about said body portion over said flanges for securing said body portion in position and means extending into said staves for securing said wire in position on said body portion.

2. A barrel comprising an end member provided with a perforated laterally-extending flange concavo-convex in cross section and further provided with a central opening, a cover for said opening adapted to be positioned within said flange, a body portion comprising a continuous strip of suitable material having cuts extending inwardly from the side edges thereof, leaving the material between said cuts intact arranged to overlap said flange and held within the concavity thereof by a wire extending circumferentially thereabout and means extending through said perforations for fixedly securing said cover in position.

3. A barrel comprising an end member having an opening and a perforated laterally-extending flange with a concave outer and a convex inner face, a cover for said opening seated within said flange frictionally engaged by the convex inner face thereof for securing it in place, means extending through said perforations for fixedly securing said cover in position, a body portion consisting of a continuous strip of suitable material lapping said flanged member having cuts extending inwardly from the side edges thereof, leaving the material of said body portion between said cuts intact and means as a wire for holding said body portion within the concavity of said flanged end member.

4. A barrel comprising an end member having a central opening and a perforated laterally-extending flange with a concave outer and a convex inner face, a cover for said opening seated within said flange, a body for said barrel consisting of a continu-

ous strip of material having cuts extending inwardly from both sides thereof and lapping said flanges, leaving the material of said body portion between said cuts intact, a circumferentially-arranged wire for clamping the edges of said body portion on said flange and a wire extending across said cover through the perforations in said flange and engaging said circumferential wire for holding said cover and said circumferential wire fixedly in position.

5. A barrel comprising an end member provided with a laterally extending flange concavo-convex in cross section, a shell formed of a web of flexible material wound upon itself with the convolutions secured together, each of said convolutions having an imperforate intermediate portion, and its outer portions transversely slitted with the edges of each slit overlapping and with the overlapping edge of each slit secured to its respective convolution, said shell overlapping said flange, a wire reinforcement for the shell wound exteriorly thereon from end to end, said wire reinforcement embodying a plurality of abutting convolutions for connecting the shell to the flange, and hold-fast devices for securing the convolutions of the reinforcement at various points throughout the length of the shell to the latter.

6. A barrel comprising an end member formed with a laterally extending flange provided with a peripheral groove, a shell formed of a web of flexible material having an imperforate intermediate portion and its outer portions transversely slitted, said web wound upon itself and with the convolutions thereof secured together, the edges of each of said slits overlapping, said shell overlapping said flange, a wire reinforce for the shell wound exteriorly thereon from end to end, said reinforce embodying a plurality of abutting convolutions for connecting the shell to the flange, and hold fast devices for securing the convolutions of the reinforce at various points throughout the length of the shell to the latter.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

JOHN W. DENMEAD.

Witnesses:

GLENARA FOX,

C. E. HUMPHREY.