

Aug. 27, 1963

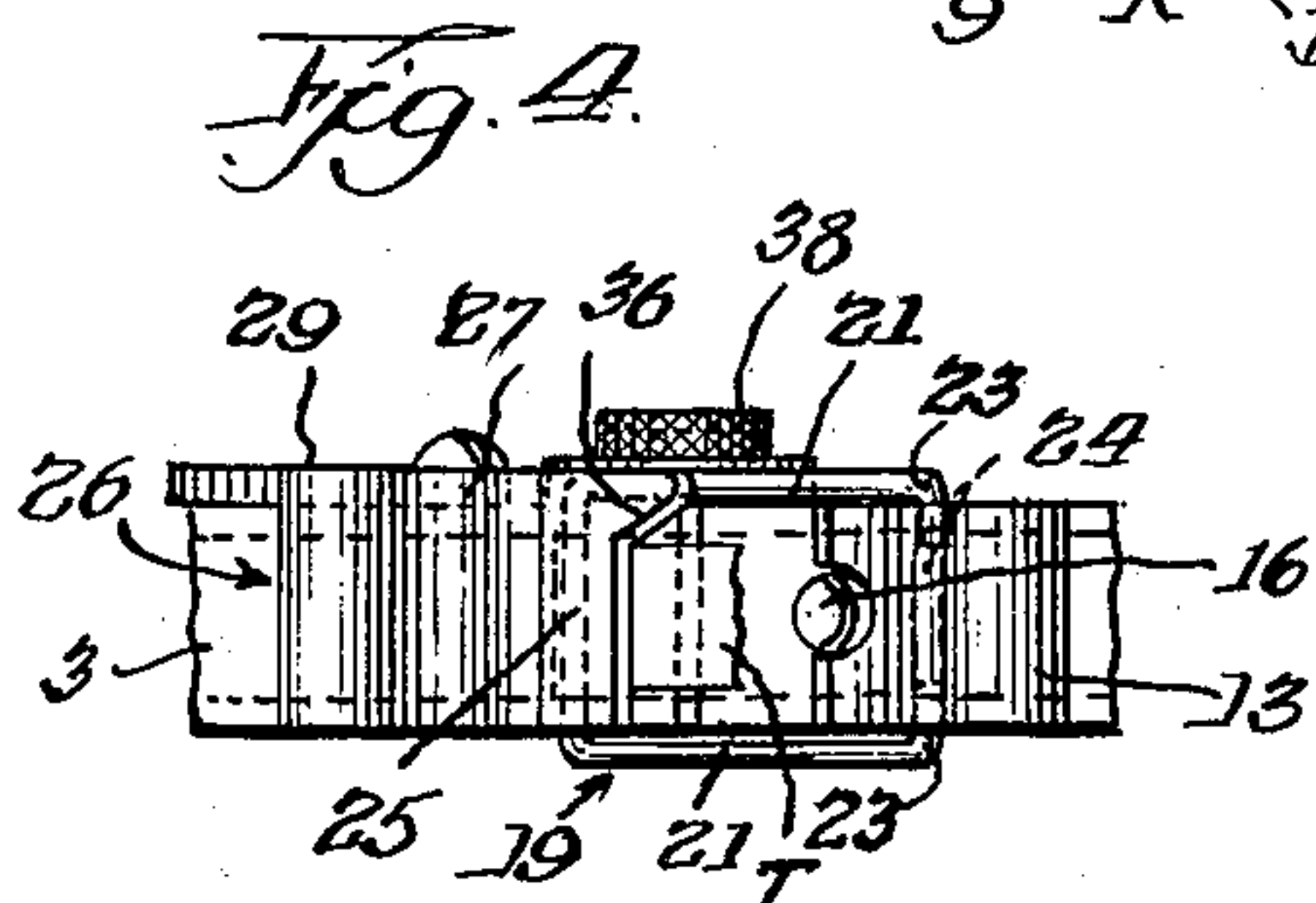
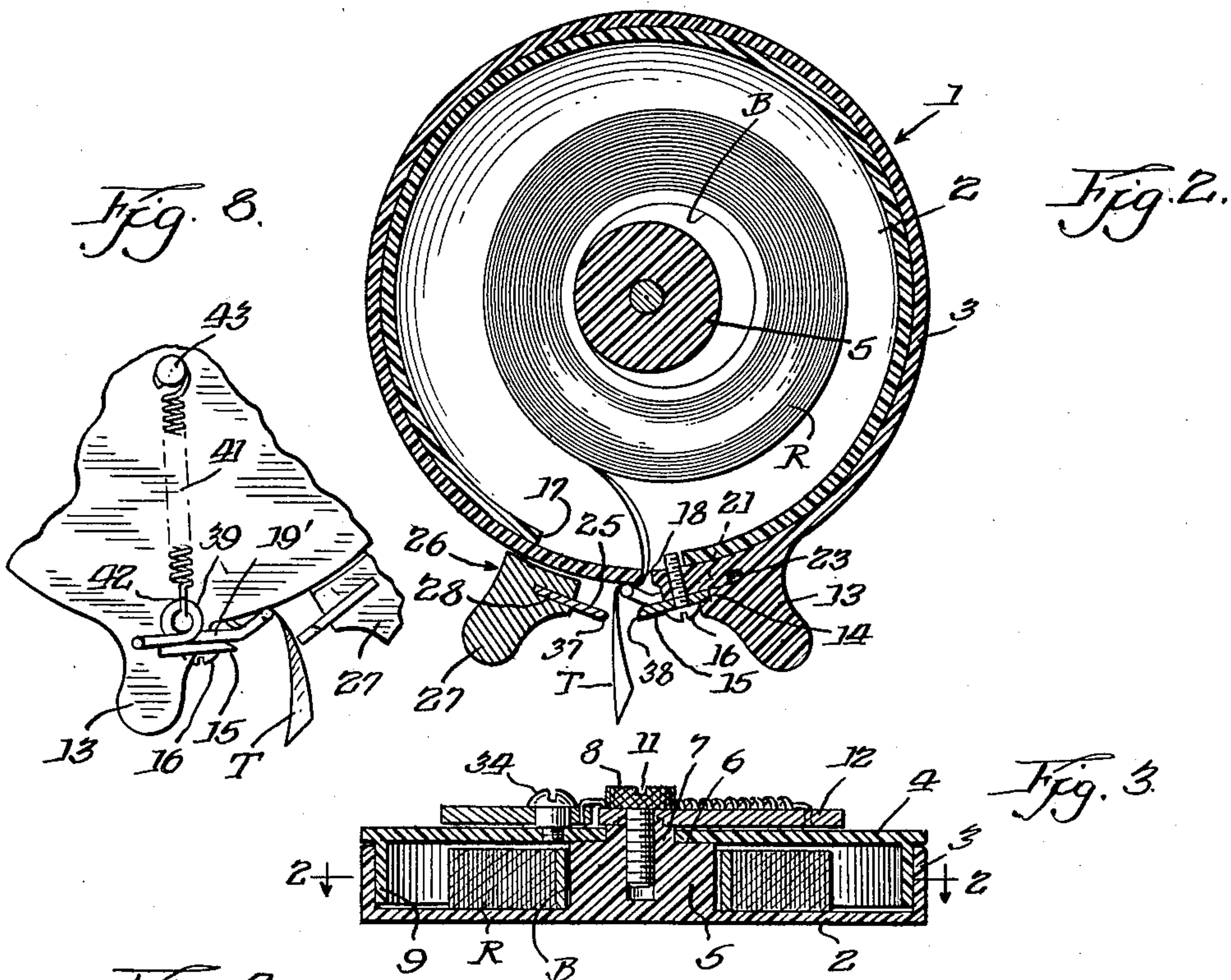
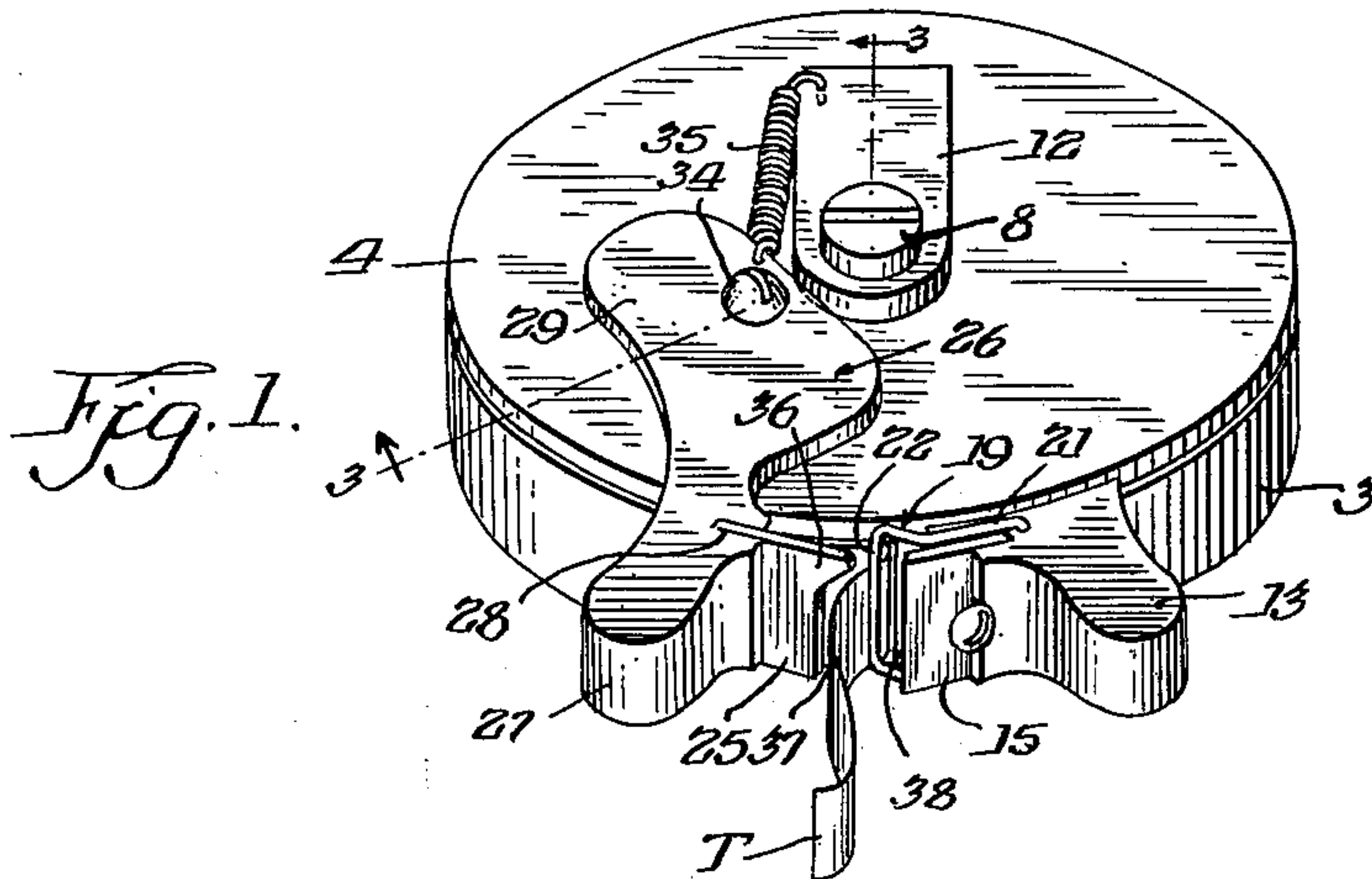
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3,101,538

TAPE DISPENSER

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2 Sheets-Sheet 1



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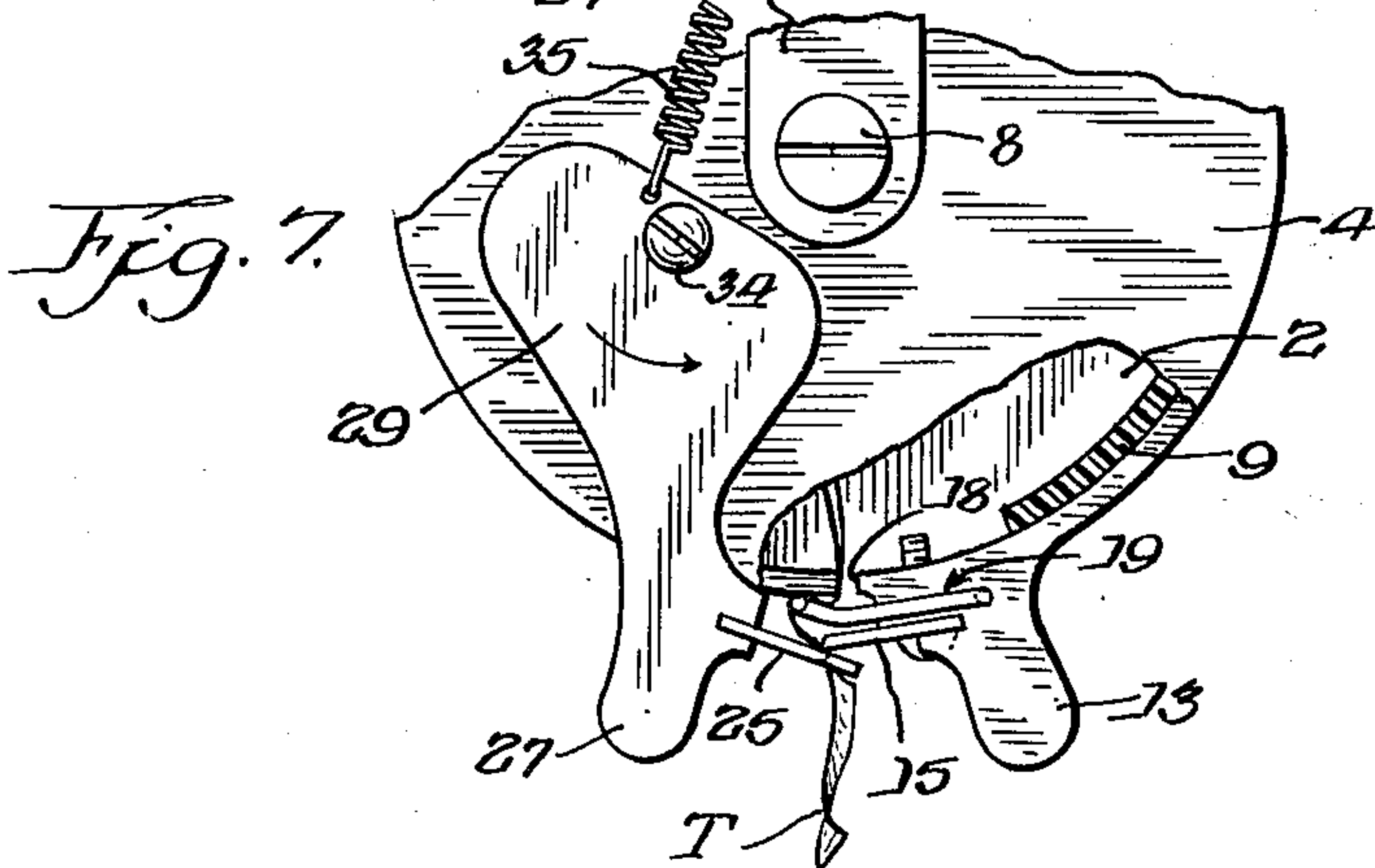
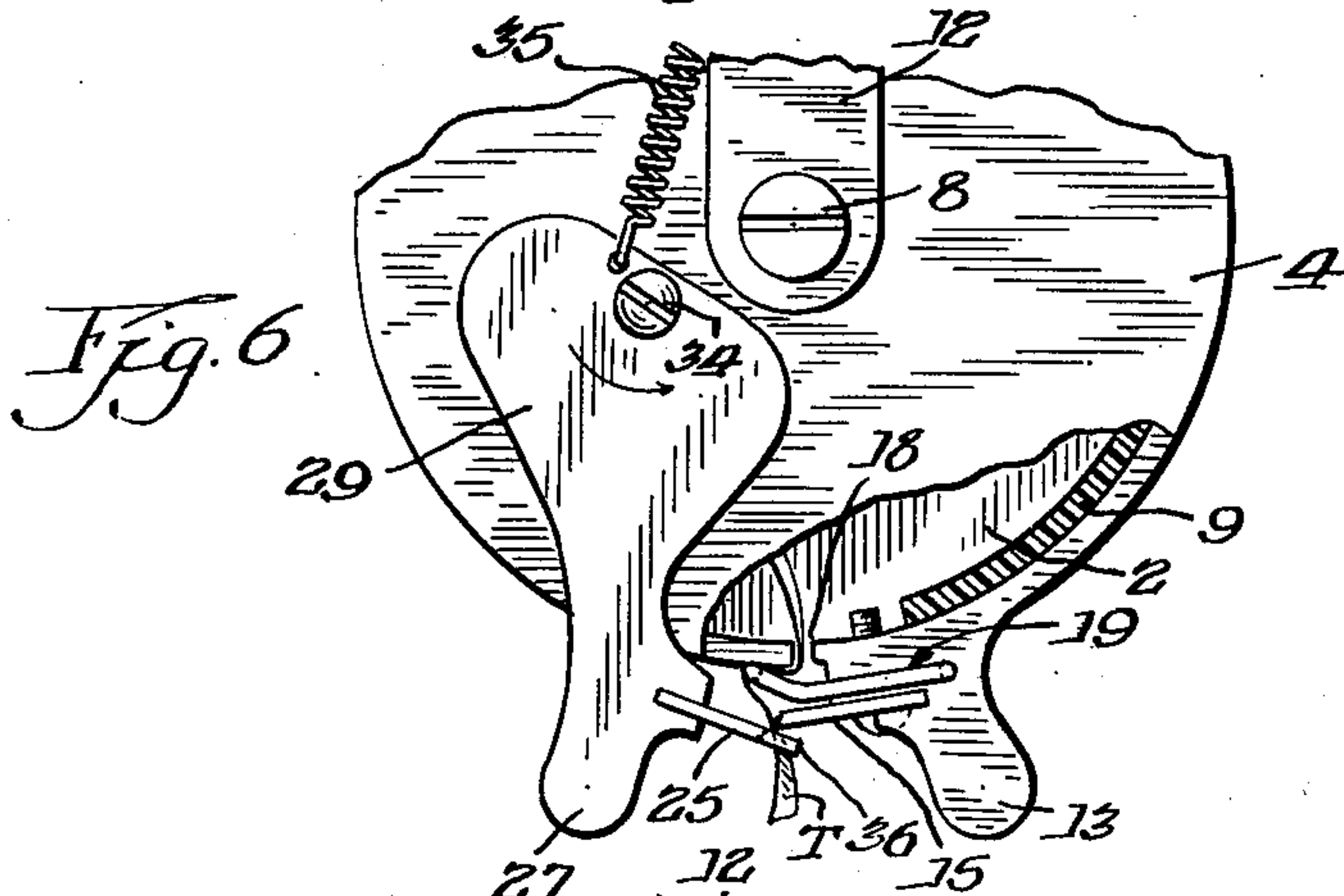
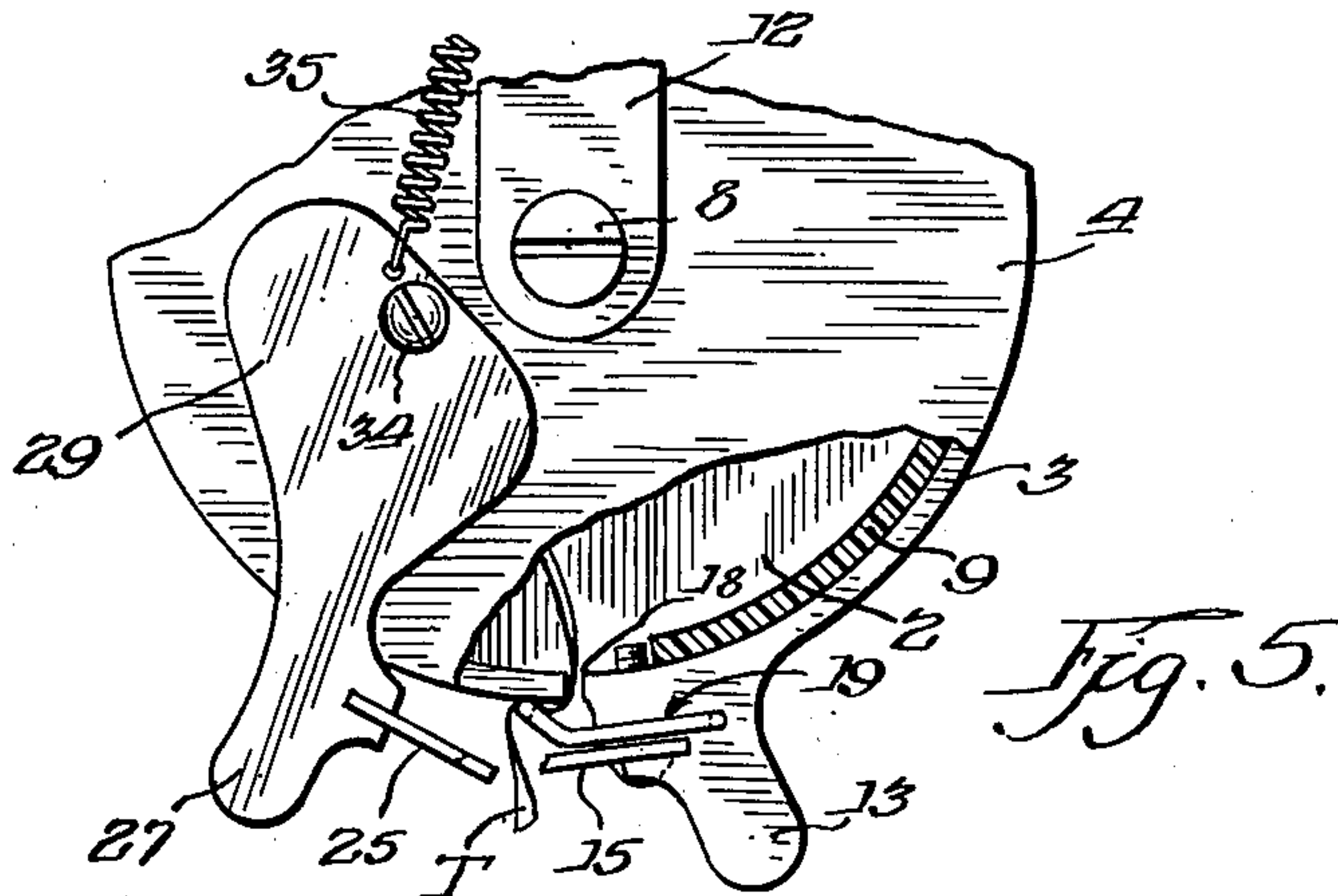
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TAPE DISPENSER

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2 Sheets-Sheet 2



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3,101,538

## TAPE DISPENSER

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The invention relates generally to dispenser structures and more particularly to a dispenser structure for tape or like strip material.

The invention is particularly suitable for the dispensation of soft, pliable materials, as for example, very thin plastic pipe gasket material and the like, which type of material is so thin and limp that it is difficult to cut even with a knife or shears.

Another object of the invention is the production of such a dispenser which is so designed that it may be readily operated with one hand, enabling the user to readily sever the tape at any desired point without interruption.

Another object of the invention is the production of such a dispenser and cutter which is very simple in construction, inexpensive to manufacture, readily adapting itself to molding processes employing plastic and the like.

A further object of the invention is the production of such a dispensing structure which is provided with novel cutting and hold-down mechanisms which may be used for tapes of all kinds, and if desired, may be provided with removable or replaceable blades where the device is of a permanent character and adapted to be refilled with tape.

Many other objects and advantages of the invention herein shown and described will be obvious to those skilled in the art.

In the drawings, wherein like reference characters indicate like or corresponding parts:

FIG. 1 is a perspective view of a tape dispenser embodying the present invention;

FIG. 2 is a sectional view taken approximately on the line 2—2 of FIG. 3;

FIG. 3 is a sectional view taken approximately on line 3—3 of FIG. 1;

FIG. 4 is a side elevational view of the cutter mechanism with the parts in the position illustrated in FIG. 6;

FIG. 5 is a top plan view of the cutter mechanism with portions of the container broken away, illustrating the position of the cutting elements prior to actuation thereof;

FIG. 6 is a view similar to FIG. 5 with the cutter elements brought into initial engagement and positioned just prior to the shearing action; and

FIG. 7 is a figure similar to FIGS. 5 and 6 with the cutter mechanism at the end of the cutting operation.

FIG. 8 is a figure of a portion of the bottom of the container illustrating a modified form of tape hold-down.

In dispensing and cutting of very thin pliable plastic tape and the like it is essential that the cutting blades meet properly throughout the cutting action to insure a complete severance of the thin tape which will readily pass between the blades without severance if the latter are not properly engaged.

The present invention accomplishes these functions by means of an exceedingly simple, inexpensive construction wherein the movable blade is so mounted that it may readily move into the proper cutting position, guiding means being employed to insure proper interengagement of the blades.

Referring to the drawings and particularly to FIGS. 1, 2 and 3, the reference numeral 1 indicates generally a container for tape or the like, constructed of suitable material, as for example, plastic and comprising a generally circular shaped bottom wall 2 and an upstanding gener-

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ally cylindrical shaped side wall 3. Cooperable with the container and adapted to close the open end thereof is a generally circular shaped cover member 4 which is adapted to be supported on a centrally extending block or post 5, illustrated as being formed integrally with the bottom 2 and provided with a shoulder 6 adjacent its upper end on which the cover member 4 is seated, the reduced portion 7 of the post 5 extending through an opening 8 in the cover member. The cover member 4 is thus supported on the post 6 and as clearly illustrated in FIG. 3 has a slight clearance between it and the upper edge of the side wall 3. As illustrated in FIGS. 2 and 3, extending downwardly from the cover member 4 adjacent the inner face of the side wall 3 and concentric therewith is a cylindrical flange 9. Mounted on the portion 7 of the post 5 and secured thereto by a knurled screw 11 is a plate 12 of generally rectangular shape which serves as a retaining member for the cover 4, permitting the latter to pivot about the axis of the screw 11 but preventing axial movement of the cover relative to the post 5. As illustrated in FIGS. 2 and 3, the post 5 forms a spindle adapted to receive an annular roll R of strip material or the like, such rolls normally having a tubular shaped base member B on which the strip material is coiled.

Extending radially outward from the side wall 3 of the container is a hand engaging projection 13, illustrated as being formed integrally with the container body, the width or height of the projection 13 as viewed in FIG. 4, being approximately equal to or slightly higher than the width or depth of the container and cover member. As clearly illustrated in FIG. 2, the projection 13 is provided with a blade receiving slot 14 adapted to receive a relatively stationary cutting blade 15, the latter being secured to the projection 13 by suitable means, as for example, a screw 16 which is threaded into the side wall of the container and as illustrated in FIG. 2, may extend into an elongated slot 17 in the cylindrical flange 9 of the cover member, the length of the slot 17 determining the rotational travel of the cover member 4 relative to the container body 1, with the screw 16 forming a stop member for the cover. The side wall 3 of the container is also provided with a narrow slot 18 of a size to permit free passage of the contained strip material to the exterior of the container, the slot 18 as illustrated in FIG. 2, being positioned adjacent the projection 13 and cutter 15.

Suitable means may be provided for holding or retaining the free end of the tape extending from the opening or slot 18, which means in the construction illustrated in FIGS. 1 and 2, and 5 through 7 comprises a bail member indicated generally by the numeral 19 having a pair of leg portions 21 which are connected by a cross or intermediate portion 22, the free ends 23 being intumed to oppose one another and seated in a bore 24 extending through the projection 13 or in oppositely extending recesses in the projection 13 of a size to receive the intumed ends 23. The bail 19 is formed of suitable wire, having some resiliency or spring action and the legs 21 are provided with a bend adjacent the intermediate portion 22 operative to position the latter adjacent the outer surface of the side wall 3, and it will be noted that the legs 21 are adapted to abut the outer side portions of the plate so that the latter forms a stop therefor and the inherent resiliency of the bail is operative to tension the intermediate portion 22 against the adjacent surface of the side wall 3.

Cooperable with the blade 15 is a movable blade 25 carried by a supporting member, indicated generally by the numeral 26, having a hand engaging projection 27, generally shaped similarly to the projection 13, which supports the blade 25 in a slot 28 formed in the projection. Extending from the latter and overlying the cover 4 is a plate-like portion 29 which is pivotally connected to the cover 4 by means of a shoulder screw 34 which is illus-



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trated as being threaded into the cover 4. The member 26 is biased in a clockwise direction as viewed in FIGS. 1, 2 and 5 through 7 by suitable means, as for example, by a coiled spring 35 having its ends operatively connected to the member 26 and the plate 12, the connection of the spring, illustrated in FIGS. 1 and 3, comprising a bore in the associated element through which a respective end of the spring 35 is hooked. The spring 35 thus performs two functions, one, urging the member 26 in a clockwise direction about the screw 34 until the projection 27 engages the side wall of the container and is thus restricted as to any further pivotal movement, and two, tends to rotate the cover member and with it the member 26 to the extreme clockwise position of the cover member relative to the container 3, as illustrated in FIG. 2, the screw 16, as previously mentioned, acting as a stop on the flange 9 to limit further rotation of the cover member in a clockwise direction.

It will be appreciated from the above that the member 26 and thus the blade 25 have two distinct motions with respect to the stationary blade 15, resulting motion of the blade 25 being toward and away from the blade 15 along an arcuate path, resulting from rotation of the cover 4 in a counterclockwise direction, such motion carrying with it the pivot screw 34, with the cover and member 26 moving as a unit. The other possible motion of the blade 25, with respect to the stationary blade 15, is that resulting from pivotal action of the member 26 about the screw 34 which would tend to move the blade 25 in an arc to impart a radial movement to the blade 25 toward the side wall 3 and at the same time toward the blade 15. Proper position of the blade 25 with respect to the blade 15, as the blade 25 approaches the blade 15, may be accomplished by a projection 36 formed on the blade 25, such projection being adapted to engage the blade 15 and overlies the same to accurately align the shearing edge 37 of the blade 25 with the cooperable shearing edge 38 of the blade 15.

In use, as the projections 13 and 27 will be normally grasped between thumb and finger and urged toward one another, the initial movement of the member 26 will be with the cover 4 as the latter is moved about the screw 11, pressure on the projection 27 tending to urge it toward the projection 13, tending to rotate the cover 4 and thus produce the movement of the member 26 as described. As such squeezing action is continued, the projection 36 will engage the blade 15, thereby guiding the cutting action of the blade 25 into operative shearing relation with respect to the cutting edge of the blade 15 and pressure on the projection 27 during such action will place pressure on the two blades to effectively shear any strip material therebetween.

In use, the roll R of tape or strip material is inserted into the container by unscrewing the thumb screw 11, and lifting off the cover 4 and with it the plate 12 and member 26. Following insertion of the roll of tape R into the container, as illustrated in FIGS. 2 and 3, the free end T of the tape is inserted outwardly through the slot 18 and slipped between the intermediate portion 23 of the bail 19 and the adjacent wall 3 of the container, as clearly illustrated in FIGS. 1 and 2. The cover 4, plate 12 and screw 11 are then replaced in their original positions, the screw being tightened down to lock the plate 12 in a position substantially as illustrated in FIG. 1. If desired, the portion 7 of the post 5 may be provided with a key portion, and the opening in the plate 12 may be complementally shaped, the cooperating locking means thus formed retaining the plate 12 in the desired position on the post 5.

FIGS. 5 through 7 illustrate the relative positions of the cutter blades and associated elements at the various stages of normal operation. Thus it will be noted in FIG. 5 that the cover member and the member 26 are in their extreme inoperative positions, the blade 25 positioned away from the blade 15 and at the same time pivoted

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slightly outward to provide ample finger space between the blades, whereby the extreme end of the tape may be grasped between the thumb and finger and by exerting a pull thereon the desired length of tape is withdrawn from the container, the bail member 19 being operative to retain the tape in proper position with respect to the blade but having sufficient resiliency to permit the tape to be readily pulled between it and the side wall of the container. As the relative movement between the projections 13 and 27 is continued the elements will approach the position illustrated in FIG. 6. In this position the projection 36 has already engaged the blade 15 and has guided the blade 25 to a point just prior to the initiation of the shearing action.

FIG. 7 illustrates the final position of the elements immediately following severance of the tape end and it will be noted that throughout the shearing action the bail 19 has maintained the adjacent end of the tape roll in operative position. If during the shearing operation there is any tendency of a pull being exerted on that portion of the tape at the roll side of the cutter blades, the bail would prevent any undesired withdrawal of the tape from the container. Likewise the bail will also provide a snubbing action during the withdrawal of the tape from the container and thus tends to prevent any overrunning action which might withdraw more tape than that desired or which might have a tendency to unreel the tape within the container.

It will be appreciated that the construction thus described provides a very effective cutting or shearing mechanism which has proven to be exceptionally efficient in cutting extremely thin pliable tape of the type that is currently being employed as gasket material on pipe joints and the like, such tape being so limp that it has heretofore been extremely difficult to cut the same as it is sufficiently thin that, combined with its limpness, it has a tendency to pass between blades without severance even though such blades may be reasonably sharp. On the other hand, with the present invention the construction is such that the action of moving the blade into its cutting position also applies pressure between the blades to produce a very effective cutting action.

In some cases where it is desired to use the container for other forms of tape, as for example plastic adhesive tape and the like, it may be desirable to employ a bail member which has greater spring action than that heretofore described. FIG. 8 illustrates a modified form of bail which is provided with supplemental spring tensioning means. FIG. 8 illustrates a portion of the bottom of the container 3 and employs a bail 19' which is quite similar to that illustrated in FIGS. 1 and 2 with the addition of an eye 39 formed by looping the material comprising the bail. The spring action is provided by a coiled tension spring 41 having one end 42 engaged with the eye 39 and the opposite end engaged with an anchor post 43 carried by the container 3. Thus in this construction the bail may move slightly away from the side wall 3 to readily release the tape supported thereby but under the action of the spring 41 will effectively retain the tape end in operative position in the manner of that illustrated in FIGS. 1 and 2.

While I have illustrated the blades 15 and 25 as being attached to their associated projections 13 and 27 by means of the screw 16 and a press fit, if desired the blade 25 may be secured to the projection 27 by a screw or the like similar to the manner of attachment of the blade 15, in which case both blades could be readily replaced. It will be noted that the design is such that the blades 15 and 25 tend to have a sharpening action which would maintain the blades in efficient operative condition.

It will also be noted from the above description that the dispenser illustrated may be rather simply and inexpensively manufactured, the design readily adapting itself for the use of plastic or the like for the bulk of the parts.



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Having thus described my invention, it will be obvious that various immaterial modifications may be made in the same without departing from the spirit of my invention; hence I do not wish to be understood as limiting myself to the exact form, construction, arrangement and combination of parts herein shown and described or uses mentioned.

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

1. In a dispenser structure for pliable tape and the like, the combination of a hollow container for the tape to be dispensed, said container having a discharge opening therein, a relatively stationary cutter carried by said container and arranged to receive tape therefrom, a movable cutter cooperable with said stationary cutter, said movable cutter being movable relative to the stationary cutter about a pair of spaced substantially parallel axes, and an extension on said movable cutter constructed to engage the stationary cutter prior to operative cutting engagement of the movable cutter therewith for guiding the movable cutter into cutting position.

2. In a dispenser structure for pliable tape and the like, the combination of a hollow container for the tape to be dispensed, said container having a discharge opening therein, a relatively stationary cutter carried by said container, and arranged to receive tape therefrom, a movable cutter cooperable with said stationary cutter, means for supporting said movable cutter for movement relative to the stationary cutter along variable non-fixed lines of travel with said movable cutter having a movement transverse to the line of cutting engagement between the cutters, an extension on said movable cutter constructed to engage the stationary cutter prior to operative cutting engagement of the movable cutter therewith for guiding the latter into cutting position, and means carried by said container, engageable with a tape end extending from said discharge opening for retaining such tape in operative position.

3. In a dispenser structure for pliable tape and the like, the combination of a hollow container for the tape to be dispensed, said container having a discharge opening therein, a relatively stationary cutter carried by said container and arranged to receive tape therefrom, a movable cutter cooperable with said stationary cutter, means for supporting said movable cutter for compound movement whereby it is not confined to a fixed predetermined line of travel relative to said stationary cutter, an extension on said movable cutter extending outwardly beyond the cutting edge thereof and constructed to engage the stationary cutter prior to operative cutting engagement of the cutting edge of the movable cutter therewith for guiding the latter into cutting position, and resilient means for normally retaining said movable cutter in non-cutting position.

4. A tape dispenser comprising a container structure having a bottom wall and a side wall means, a cover member for the open end of said container structure and movable relative thereto, said container structure having a tape discharge opening in the side wall thereof, a stationary cutter blade carried by said container structure, a bail member carried by said container structure and having a tape engageable portion extending generally parallel to tape discharge from said opening, a movable cutter member carried by said cover, a cutter blade carried by said second cutter member cooperable with said first blade, a forwardly extending extension on said movable cutter blade initially operative to guide the cutting edge of said blade into shearing relationship with the cutting edge of said stationary blade upon relative movement of said blades toward each other, and spring means for biasing the movable cutter in a retracted position relative to said stationary cutter blade.

5. A tape dispenser as defined in claim 4, wherein said bail is pivotally mounted on said container structure and resilient means operatively biasing said tape-engagable portion of the bail toward said container.

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6. A tape dispenser comprising a generally circular bottom wall and a cylindrical side wall, a circular cover for the open end of said container, the latter having a shouldered central post therein extending through the cover with the latter supported on said shoulder, screw means removable securing said cover member to said post, said cover member being movable thereon, said container having a tape discharge opening in the cylindrical side wall, a rigid hand-engageable projection carried by and extending radially outward from said container at one side of said discharge opening, a stationary cutter blade carried by said projection, a movable cutter member pivotally carried by said cover, said cutter member having a hand engageable projection cooperable with said first projection, a cutter blade carried by said second projection cooperable with said first blade, a forwardly extending extension on said movable cutter blade initially operative to guide the cutting edge of said blade into shearing relationship with the cutting edge of said stationary blade upon manual squeezing movement on said projections, and spring means for biasing the movable cutter in a retracted position relative to said stationary cutter blade.

7. A tape dispenser as defined in claim 6, comprising a tape-engagable bail pivotally mounted on said stationary projection and resilient means operatively biasing said bail toward said container.

8. A tape dispenser comprising a generally circular bottom wall and a cylindrical side wall, a circular cover for the open end of said container, the latter having a shouldered central post therein extending through the cover with the latter supported on said shoulder, a plate member engageable with said post at the exterior of said cover member, screw means removably securing said plate and cover members to said post, said cover member being movable thereon, said container having a tape discharge opening in the cylindrical side wall, a rigid hand-engageable projection carried by and extending radially outward from said container at one side of said discharge opening, a stationary cutter blade carried by said projection, screw means detachably securing said blade to the latter, a bail carried by said projection and having a tape engageable portion extending generally parallel to tape discharged from said opening and disposed at the opposite side of said opening, a movable cutter member pivotally carried by said cover, said cutter member having a hand engageable projection cooperable with said first projection, a cutter blade carried by said second projection cooperable with said first blade, a forwardly extending extension on said movable cutter blade initially operative to guide the cutting edge of said blade into shearing relationship with the cutting edge of said stationary blade upon manual squeezing movement on said projections, and spring means operatively connecting said plate member and said movable cutter member for biasing the latter in a retracted position relative to said stationary cutter blade.

9. A tape dispenser as defined in claim 8, wherein said bail is pivotally mounted on said rigid projection and resilient means operatively biasing said bail toward said container.

10. A tape dispenser comprising a container structure, having a tape discharge opening therein, a rigid hand-engageable projection carried by and extending from said container at one side of said discharge opening, a stationary cutter blade carried by said projection, a movable cutter member carried by said container structure for pivotal movement about an axis which is transversely movable relative to said stationary cutter blade, said cutter member having a hand engageable projection cooperable with said first projection, a cutter blade carried by said second projection cooperable with said first blade, a forwardly extending projection on said movable cutter blade initially operative during the compound movement of said blade with and about said axis to guide the cut-



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ting edge of said blade into shearing relationship with the cutting edge of said stationary blade upon manual squeezing movement on said projections, and means for biasing the movable cutter in a retracted position relative to said stationary cutter blade.

11. A tape dispenser comprising a generally circular container structure having a bottom wall and a cylindrical side wall, a circular cover for the open end of said container, means removably securing said cover member to said container structure, said cover member being pivotally movable thereon about the axis of said container structure, the latter having a tape discharge opening in the cylindrical side wall, a stationary cutter blade carried by said container structure, a movable cutter blade carried by said cover for pivotal movement about an axis extending parallel to but spaced from said first mentioned

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axis, and cooperable with said first blade, and means operatively connecting said container structure and said movable cutter member for biasing the latter in a retracted position relative to said stationary cutter blade.

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