Aug. 7, 1951 S. F. MACKELDUFF 2,563,542

SEALING CONTAINER

Filed April 1, 1950 3 Sheets-Sheet 1

Fig. 1.

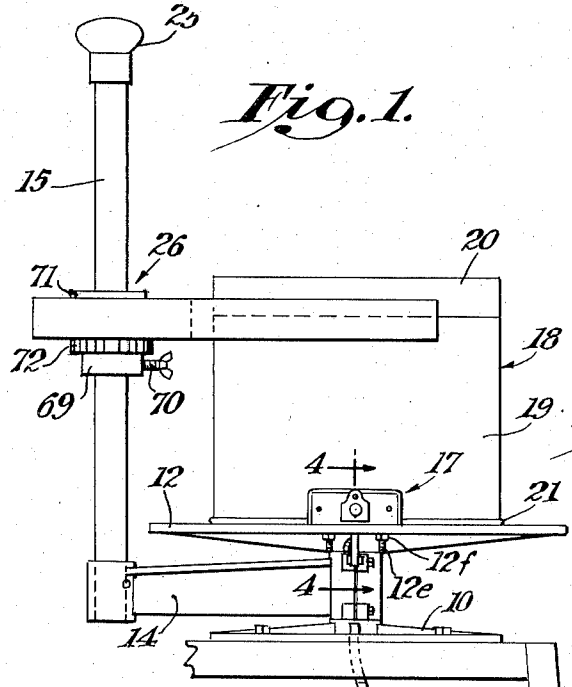

Fig. 3.

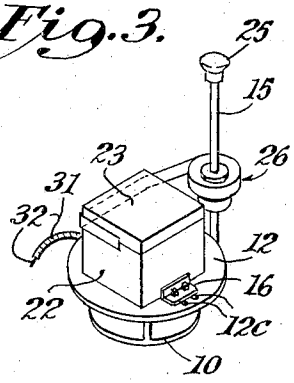

Fig. 4.

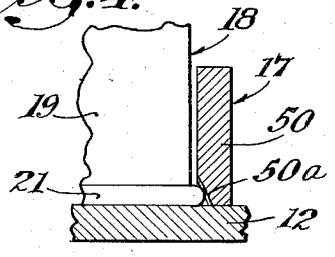

Fig. 5.

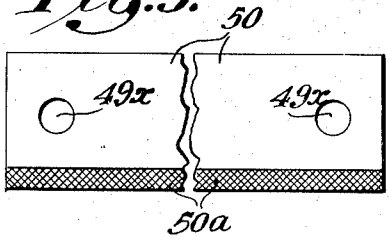

Fig. 6.

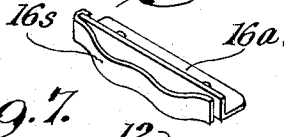

Fig. 7.

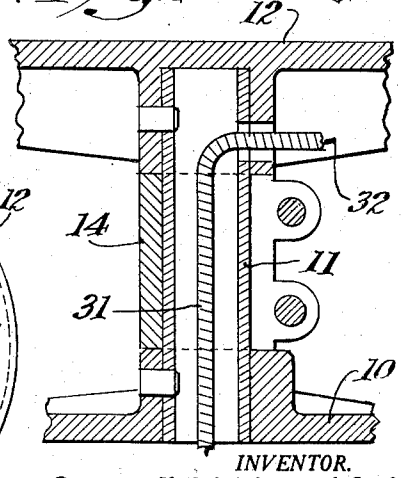

Fig. 2.

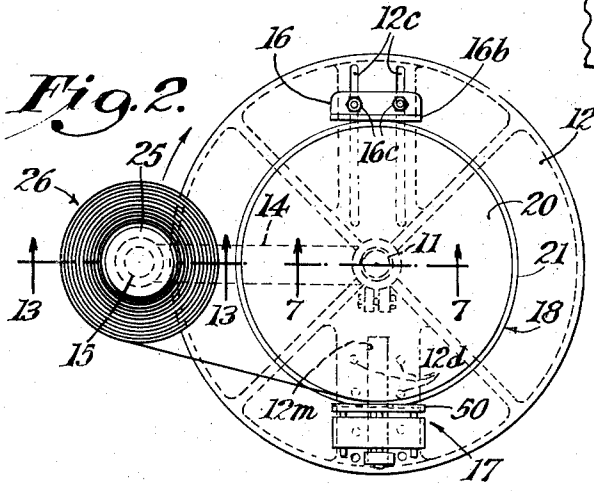

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Fig. 8.

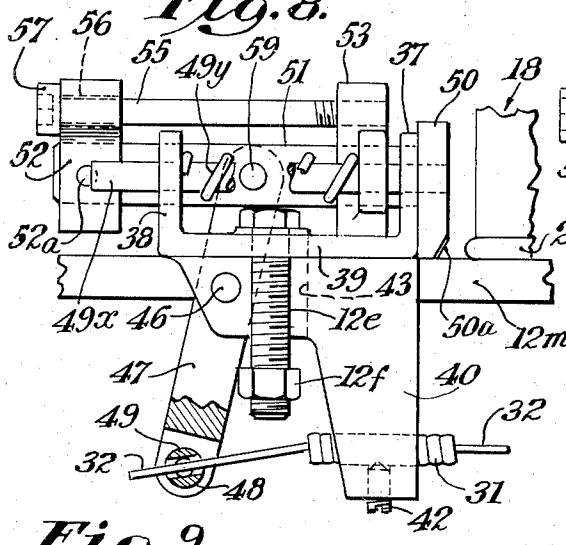


Fig. 10.

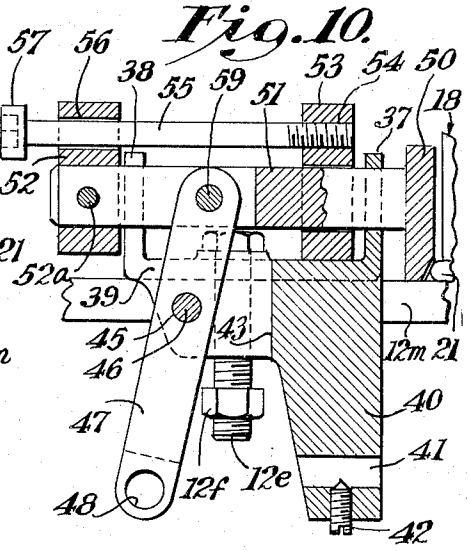


Fig. 9.

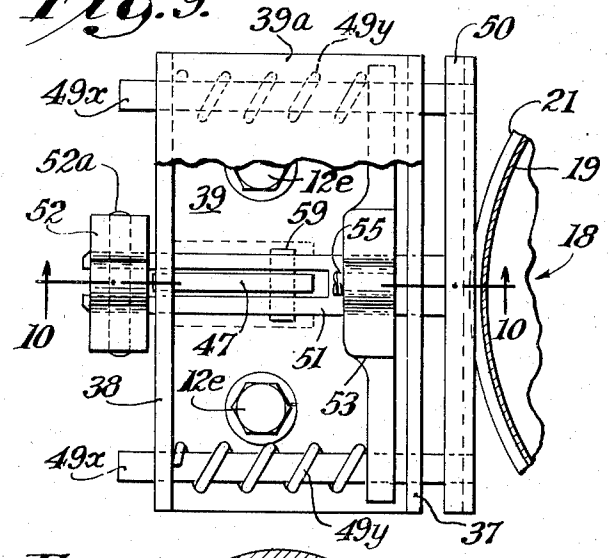


Fig. 12.

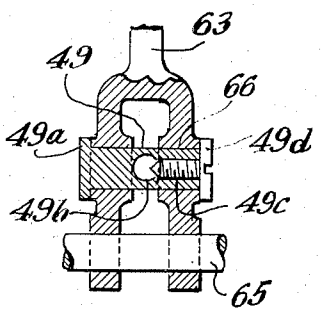
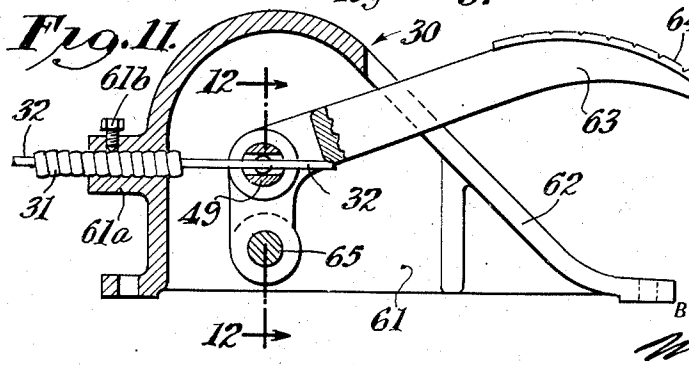


Fig. 11.



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SEALING CONTAINER

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Fig. 13.

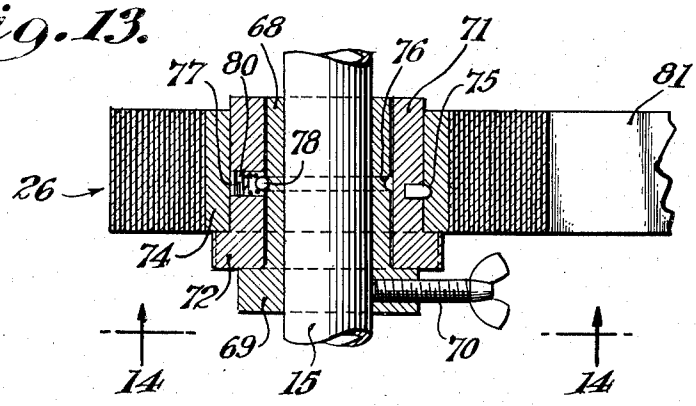


Fig. 14.

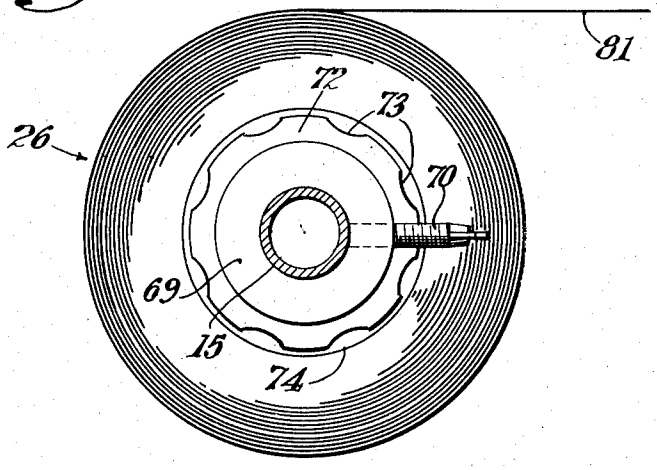
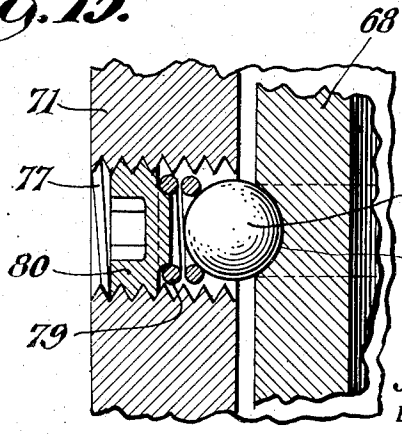


Fig. 15.



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Patented Aug. 7, 1951 2,563,542

UNITED STATES PATENT OFFICE

2,563,542

SEALING CONTAINER

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Application April 1, 1950, Serial No. 153,426

18 Claims. (Cl. 216—20)

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This invention relates to sealing containers and, in particular, to devices adapted to accomplish the application of sealing tape to the seams formed by the abutment or telescopic engagement of the containers and their covers or tops.

It is an object of this invention to provide such a device which is of cheap, light and simple construction; which is conveniently manually operable; and which is adapted for ready attachment to floors, tables, etc. in semi-permanent manner by any conventional attaching means such as screws, bolts, clamps, and the like.

It is an object of this invention to provide such a device embodying a stationary table or platform provided with cooperating opposed jaws or stops which are relatively yieldable within predetermined limits and which are adjustable toward and away from one another for the accommodation therebetween of boxes, canisters and other containers of widely varying shapes and dimensions, one of the aforesaid stops or jaws being retractible through normally yieldingly biased or urged toward the other for automatically adjusting itself within predetermined limits with respect to the other, and the other jaw or stop being adjustable in steps of predetermined length.

This invention relates particularly to the provision of new and improved devices of the type disclosed in U. S. Letters Patent titled Device for Sealing Packages With Adhesive Tape, Patent Number 2,549,136, issued April 17, 1951, to Henry A. Simpson and Samuel F. Mackelduff, and embodies certain improvements on the structure thereof, including treadle operation of the automatic jaw or device thereof, the provision of bead engaging means on the automatic jaw for preventing marring of the sides of a container, the provision of means for preventing slippage between the core of a tape roll and support therefor and for maintaining uniform tension in the tape roll during operation of the device as well as means facilitating removal of a tape roll from the support therefor.

These and other objects and advantages of the invention will clearly appear from the following description, and the accompanying drawing forming a part thereof, and will be pointed out in the appended claims.

In the drawing:

Fig. 1 is a view, in side elevation, partly in section and partly broken away, of an illustrative device embodying the principles of my invention, showing the parts in position to seal together the top and main portions of a cylindrical canister or drum;

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Fig. 2 is a plan view of the structure shown in Fig. 1;

Fig. 3 is an isometric view of the structure shown in Figs. 1 and 2 but operating to seal together the main and top portions of a container of rectangular section;

Fig. 4 is a fragmentary section taken substantially on the line 4—4 of Fig. 1 and illustrating diagrammatically the operation of the cut-back knurled bead engaging jaw portion of the automatic clamp or jaw;

Fig. 5 is a front view of the knurled jaw portion;

Fig. 6 is an isometric view of an alternative form of stationary jaw;

Fig. 7 is a fragmentary section taken substantially on the line 7—7 of Fig. 2;

Fig. 8 is a side elevation of the mechanically operated clamp or jaw of the device;

Fig. 9 is a top plan view of the structure shown in Fig. 8 and illustrating the cooperation of the knurled jaw portion with the bead of a can or canister;

Fig. 10 is a fragmentary section, partly broken away, taken substantially along the line 10—10 in Fig. 9;

Fig. 11 is a side elevation, in section, of the treadle device shown in Fig. 1 and taken substantially along the line 11—11 thereof;

Fig. 12 is a section taken substantially along the line 12—12 in Fig. 11;

Fig. 13 is a fragmentary section taken substantially along the line 13—13 in Fig. 2;

Fig. 14 is a bottom plan view of the structure shown in Fig. 13; and

Fig. 15 is a fragmentary detail in section showing the tape tension control device of Figs. 1, 2, 3, 13 and 14.

The illustrative device shown in Figs. 1–15 of the drawing comprises a base 10 having pinned thereto a tubular swivel bearing 11 which member 11 has a table member 12 pinned to its other, top, end as shown in Fig. 7. Pivotally or swingably secured on the member 11 between base 10 and table 12 is the inner end of the swivel arm 14 having an upright swivel post 15 secured to the outer end thereof and freely swingable about the table 12 outside the confines thereof. The table 12 is provided with an adjustable but normally stationary jaw member 16 and opposed thereto a mechanically operated clamping jaw 17, retractible by a foot operated treadle mechanism hereinafter described, and yieldingly spring biased or urged in the appropriate direction toward the above described stationary jaw member 16 normally to cooperate with the stationary jaw 16 for

yieldingly clamping therebetween a container such as the can or canister 18 having a cylindrical side wall 19 and telescopic top 20 with an annular bead 21 at the lower end of the side wall 19. As shown in Fig. 3, the container may comprise a box of rectangular section having a main portion 22 and top portion 23.

The swivel post 15 is provided at its upper end with a removable handle 25 for ease of manipulation. Intermediate its height, the swivel post 15 supports a sealing tape supporting assembly generally designated 26, the details of which are shown in Figs. 13 and 14, by means of which a roll of adhesive sealing tape is supported at desired height and under predetermined tension in order that the end thereof may be manually applied to the container, straddling the junction of the top and bottom portions thereof as shown in Figs. 1 and 3, whereafter the swivel post may be swung about its axis 11 completely around the container whereby the seam between the main and top portions of the container is completely sealed by the applied tape. The portion of the tape which is not attached may be severed and the loose end of the attached tape pressed firmly against the container.

In order to facilitate handling of containers such as 18 and 22, I have provided a stationary jaw which may comprise the member 16 shown in Fig. 2 or the resilient or yielding jaw member 16^a of Fig. 6. The member 16 of Fig. 2 comprises an agle iron of L-section 16^b secured by bolts 16^c in adjusted position with respect to the parallel slots 12^c extending generally radially of the table 12 as shown in Fig. 2. The mechanically operated clamping jaw assembly 17 may be adjusted radially of the table 12 by means of paired apertures 12^d (Fig. 2), bolts 12^e and nuts 12^f (Fig. 8). Normally this jaw is biased toward extended position in opposition to the upright flange 16^b of the member 16 (or 16^a) and may be urged away or retracted from its extended position by means of the treadle 30 which is operatively connected with the mechanically operated jaw assembly by means of the control cable 31 comprising a piano wire 32 surrounded by the flexible armor tube 31.

The alternative stationary jaw member shown in Fig. 6 is similar to the above-described jaw member shown in Fig. 2 with the exception that the inner face of the upright flange thereof is provided with a spring metal facing member 16^s of suitable contour for engaging the container to be supported on the table 12.

The details of the mechanically operated jaw or clamp are shown in Figs. 8–10, as before stated. As therein shown, the frame member thereof comprises a transversely extending U-section bracket portion having a forward upstanding flange 37, a rear upstanding flange 38 which is separated from the forward flange 37 by the planar portion 39 which is disposed horizontally therebetween. Extending downwardly from the portion 39 is a block-like portion 40 of width approximating that of the slot 12^m extending radially of the table 12 midway between the spaced rows of apertures 12^d described above thus, the frame portion 37—40 of the mechanically operated jaw or clamp may be adjusted radially of the table 12 as shown in Figs. 2 and 8 and secured in adjusted position by the above-described nuts and bolts 12^e, 12^f.

At its lower end, the portion 40 is provided with a bore 41 adapted to receive the armor 31 of the control cable which is secured therein by the set screw or stud 42 as shown in Figs. 8 and 10. As shown in Fig. 10, particularly, the rear flange 38 and adjacent portion 39 are slotted from the rear end to approximately the midportion, the slot terminating at 43 and the portions 44 at opposite sides of the longitudinal slot being provided with bearing apertures or bores 45 receiving the transverse lever supporting pin 46 upon which the control lever 47 is supported for swinging movement. The lower end of this lever 47 is provided with a bearing aperture 48 which receives a bearing pin 49 in which the end of the piano wire 32 is clampingly secured in a manner hereinafter described.

The upstanding flanges 37 and 38 are each provided with a pair of transversely spaced aligned apertures receiving and slidably supporting the jaw plate guide pins 49^x which have their forward ends secured rigidly to the end portions of the jaw plate 50. The jaw plate 50 has its central portion secured to the forward end of a plunger 51 which extends through aligned apertures in the flanges 37 and 38 and having a stop member 52 secured by pin 52^a to its rear end. Cooperation of the stop member 52 and flange 38 limits forward or advanced movement of the jaw plate 50 as shown in Fig. 10.

Slidably supported by the guide pins 49^x and plunger 51 between the flanges 37 and 38 is a spring backing plate or crosshead 53. The portions of the guide pins 50^a between the backing plate 52 and rear flange 38 are surrounded by compression springs 49^y which constantly urge or bias the cross-head or backing plate 53 forwardly with respect to the frame proper; i. e., from the position of Fig. 8 toward the position of Fig. 9. In addition to the bores or apertures of the cross-head member 53 which surround the guide pins 50^a and plunger 51, the member 53 is provided with an upstanding extension having a threaded bore 54 receiving the forward end of the adjusting stud or screw 55 which screw or stud extends through a smooth-walled aperture 56 in the stop 52 which bore 56 is aligned with the screw threaded bore 54. The head 57 of the stud or screw 55 is preferably provided with an internal socket.

As may be readily seen from Figs. 8–10, the adjusting stud or screw 55 provides a tensile connection between the stop member 52 (and plunger 51, jaw plate 50 and guide pins 49^x) and the spring backing plate or cross-head member 53 whereby the compression in the springs 49^y may be regulated by controlling the spacing of the members 52 and 53. Since the adjustment thereby achieved between the spring backing plate or cross-head member 53 and flange 38 will determine the force exerted by the springs 49^y, it will thus be readily understood that the springs always urge the parts toward the position shown in Fig. 10. In order to withdraw the parts from this position and release the jaw plate 50 from engagement with a container, the retrograde movement is achieved by the lever 47 as hereinafter described.

As shown in Figs. 9 and 10, the plunger 51 is slotted throughout the major portion of its length and the upper end of the lever 47 extends into this slot and is pivotally connected to the plunger 51 by the pivot pin 59. Upon the application of tension to the lower end of lever 47, it is swung in counter-clockwise direction and the force of springs 49^y is overbalanced and the jaw plate 50 moved rearwardly or to the left as seen in Figs. 8–10 from the positions of Figs. 9 and 10 to that of Fig. 8. This is accomplished by the

application of tension to the piano wire 32 which is connected by means of freely rotatable bearing pin 49 to the lower end of the lever 47.

The means for applying the aforesaid tension to the piano wire 32 comprises a treadle 30 shown in Figs. 1, 3, 11 and 12. This treadle comprises a hollow casing 61 having a longitudinal slot 62 extending throughout the major portion of its length and receiving the lever portion 63 of a pedal having a corrugated portion 64 engaged by the foot of an operator and being bifurcated at the other end. The bifurcated inner end of the pedal is supported by the pin 65 passing through suitably located apertures in the furcations of the pedal with its ends supported in suitable bearing apertures provided in the side walls of the treadle housing. Between the shaft portion and the pin 65 the furcations are provided with bearing apertures 66 receiving the bearing pin 49 similar to the bearing pin 49 in the bearing aperture 48 of the above-described lever 47.

This bearing pin 49 is provided with a head 49[a] at one end and a transverse wire receiving bore or aperture 49[b] adjacent its midportion. The other end is provided with an axial screw threaded bore 49[c] receiving the screw threaded portion of a screw 49[d] having a head similar to the head 49[a]. Since the end of the screw threaded portion of this screw is pointed, it securely clamps the end of the wire 32 in the bore or aperture 49[b]. Thus, at one end, the wire 32 is secured against end-wise movement in one of the freely rotatable bearing pins 49 and secured in like manner at its other end in the other bearing pin 49. Thus, depression of the pedal of treadle 30 by the foot of an operator will cause end-wise movement of the wire 32 to the right as seen in Figs. 8 and 11 and cause the lever 47 to be swung counter-clockwise to release or retract the mechanically operated jaw or clamp for removal of a container from the table 12.

The means for supporting the sealing tape (Fig. 13) comprises a tension spool hub having a cylindrical portion 68 with a bore receiving the swivel post 15 and having at its lower end an enlarged annular flange 69 supporting a transversely disposed through threaded set screw 70 by means of which the spool hub 68, 69 may be rigidly secured, with convenience, to the swivel post 15 at any desired height or level. Supported by this hub 68, 69 is a tension spool member comprising an annular cylindrical portion 71 rotatably engaging the outside of the portion 68, above-described, and having an enlarged annular flange portion 72 at its lower end which is supported by the above-described flange 69 as shown in Fig. 13. This flange has its peripheral portions provided with indentations 73 of such extent as readily to receive the finger ends of an operator and give access to the annular core 74 of a roll of sealing tape thus facilitating removal of a tape spool from the assembly 26 by removal of the knob or handle 25 followed by insertion of the operator's fingers below the tape roll into engagement with the under side of the core 74 followed by lifting operation. In order to prevent accidental relative rotation between the core 74 and the spool portion 71, an outwardly projecting radial pin 75 is provided which will bite into the internal portion of the core 74 when it is pressed down into seated position as shown in Fig. 13.

In order to avoid tape breakage and irregular tensioning of the tape, I have provided means comprising an annular groove 76 in the outer surface of the portion 68 of the hub and a radial bore 77 aligned therewith heightwise which bore, at its inner end supports a small, spherical bearing or ball 78 and a screw threaded adjusting stud or plug 80 with a compression spring 79 between ball member 78 and adjusting stud or plug 80. By adjusting the stud or plug 80, the compressive force exerted upon the bearing or ball member 78 by the spring 79 may be very closely controlled to regulate relative rotation between the hub and spool, or the drag or resistance to such movement whereby the tension exerted endwise upon the free portion of the tape 81 may be maintained uniformly and regulated as desired. Attention is directed particularly to the 20° cutback surface 50*a* of the jaw plate 50 by means of which, as shown in Figs. 4 and 9, the bead of a can or canister so provided will be engaged by such surface without engagement of the jaw plate 50 with the side wall of the container. As shown in Fig. 5, this cut back surface portion is provided with "diamond" knurling to insure that the relatively restricted surface contact between jaw and canister shall effectively prevent relative movement therebetween.

It is, of course, to be understood that the above description is merely illustrating and in nowise limiting and that I desire to comprehend within my invention such modifications as are included within the scope of the following claims.

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

1. In a device of the character described, a base, a hollow bearing member fixed to said base and extending upward therefrom, a container supporting table secured to said bearing member and spaced upwardly from said base, a swivel arm pivotally supported by said bearing member between said base and said table and extending radially therefrom beyond the confines of said table, an upright swivel post extending upwardly from the outer end portion of said swivel arm and freely swingable about said table outside the confines thereof, means adjustable heightwise of said swivel arm for supporting a sealing tape roll with the sealing tape maintained under predetermined uniform tension, means for detachably securing containers on said table including a stationary jaw member, a mechanically operated jaw member opposed to said stationary jaw member and normally yieldingly urged toward container gripping position, and means for manually retracting said mechanically operated jaw member from container gripping position from a point spaced from said base and said table.

2. In a device of the character described, a base, a hollow bearing member fixed to said base and extending upward therefrom, a container supporting table secured to said bearing member and spaced upwardly from said base, a swivel arm pivotally supported by said bearing member between said base and said table and extending radially therefrom beyond the confines of said table, an upright swivel post extending upwardly from the outer end portion of said swivel arm and freely swingable about said table outside the confines thereof, means adjustable heightwise of said swivel arm for supporting a sealing tape roll, means for detachably securing containers on said table including a stationary jaw member, a mechanically operated jaw member opposed to said stationary jaw member and normally yieldingly urged toward container grip-

ping position, and means for manually retracting said mechanically operated jaw member from container gripping position from a point spaced from said base and said table, said last means comprising a foot treadle device and flexible cable means extending from said treadle device through said hollow bearing member to operative connection with said automatic jaw member, whereby free swinging of said swivel arm and tape roll supporting means about said table and containers thereon is unaffected by said automatic jaw retracting means in any position of said treadle device.

3. In a device of the character described, a base, a hollow bearing member fixed to said base and extending upward therefrom, a container supporting table secured to said bearing member and spaced upwardly from said base, a swivel arm pivotally supported by said bearing member between said base and said table and extending radially therefrom beyond the confines of said table, an upright swivel post extending upwardly from the outer end portion of said swivel arm and freely swingable about said table outside the confines thereof, means adjustable heightwise of said swivel arm for supporting a sealing tape roll with the sealing tape maintained under predetermined uniform tension, means for detachably securing containers on said table including a stationary jaw member, a mechanically operated jaw member opposed to said stationary jaw member and normally yieldingly urged toward container gripping position, means for manually retracting said mechanically operated jaw member from container gripping position from a point spaced from said base and said table, and bead engaging means on one of said jaw members comprising a knurled angularly set back surface of limited height extending from the lower edge of the jaw front surface and adapted for engagement with beads at the lower ends of containers while avoiding contact of said jaw member with other portions of said containers.

4. In a container sealing device of the character described, a container supporting table adapted to support containers terminating at their lower ends in annular beads extending outwardly beyond their side walls, tape roll supporting means for supporting and swinging freely about a said table beyond the confines thereof a roll of sealing tape in sealing relation with said containers, and means for detachably securing said containers to said table for sealing by application of tape from said tape roll comprising a stationary jaw adjustable radially on said table and a retractible normally operative jaw opposed to said stationary jaw and normally yieldingly urged toward said stationary jaw and cooperating therewith for yieldingly clamping a container therebetween, at least one of said jaws having an angularly cut back knurled surface at the lower end of its face engageable with the beads of said containers without engagement with other surfaces thereof.

5. The structure defined in claim 4, the other jaw having a resilient leaf spring facing rendering it yielding to a predetermined degree.

6. The structure defined in claim 5, said retractible normally operative jaw being provided with said cut back knurled surface and said stationary jaw being provided with said leaf spring facing.

7. In a container sealing device of the character described, a container supporting table adapted to support containers, tape roll supporting means for supporting and swinging freely about said table beyond the confines thereof rolls of sealing tape under predetermined uniform tension in sealing relation with said containers, said tape rolls comprising annular cores having continuous strips of sealing tape wound thereabout in multiple layers, and means for detachably securing said containers to said table for sealing by application of tape from said tape roll comprising a pair of jaws normally yieldingly urged toward one another to clamp containers on said table and retractible for releasing said containers from said table, said tape roll supporting means including a spool member supported for rotation under predetermined resistance, said spool member comprising a core supporting flange portion and an upwardly extending tubular sleeve portion adapted for disposition within said core, said sleeve portion having a pointed pin member extending radially from the outer surface thereof and adapted to penetrate the core of a supported tape roll for preventing slippage between said supporting spool member and a tape roll supported thereby.

8. The structure defined in claim 7, the core supporting flange portion of said spool member being scalloped to provide access to the lower portion of tape cores supported by the finger tips of an operator lifting a core of a seated tape roll therefrom.

9. In a device of the character described, a base attachable to a permanent support, a tubular swivel bearing extending upwardly from said base, a container supporting table secured to said swivel bearing and spaced upwardly from said base, a swivel arm supported on said swivel bearing between said base and said table and extending radially therefrom beyond the confines of said table, an upright swivel post extending upwardly from the outer end portion of said swivel arm and freely swingable about said table outside the confines thereof, means adjustable heightwise of said swivel arm for supporting a sealing tape roll under predetermined uniform drag, means for detachably securing a container on said table comprising a stationary jaw member detachably secured to said table for adjustment thereon radially of the axis defined by said swivel bearing, a mechanically operated jaw device opposed to said stationary jaw and adjustable radially of the axis defined by said swivel bearing, said mechanically operated jaw device having a container engaging jaw plate normally yieldably urged toward container engaging position, means for retracting the jaw plate of said mechanically operated jaw device from said position comprising a treadle device spaced from said base and attachable to a support at desired locations, flexible cable means connecting said treadle device with said automatic jaw device for retraction of the jaw plate thereof, said flexible cable means extending from said treadle device through said tubular swivel bearing whereby it is unaffected by swinging motion of said swivel post with respect to said table and the container secured thereto.

10. The structure defined in claim 9, said stationary jaw member having a resilient spring steel facing yieldable within predetermined limits for engaging a container to be secured to said table.

11. The structure defined in claim 9, said tape roll supporting means comprising a hub having a sleeve portion engaging said swivel post and adjustable axially thereon, means for securing

said hub in adjustment on said post, an annular groove forming a ball race in the exterior wall of the sleeve portion of said hub, a tension spool supported for rotation on said hub member and adapted to provide a supporting seat for a tape roll, a radial bore in said tension spool leading inwardly toward the groove in said hub, a ball member supported in the inner end portion of said bore engaging said groove, a compression spring in said bore urging said ball member into frictional engagement with said groove and a set screw urging said spring member against said ball member for adjusting the drag applied between said hub and said spool.

12. The structure defined in claim 11, and means for preventing relative rotation between said spool and a supported tape roll comprising a pin member fixed to said tension spool and adapted for penetrating engagement with the core of said tape roll.

13. The structure defined in claim 4, both said jaws being provided with cut back knurled container bead engaging surfaces as defined therein.

14. In a container sealing device of the class described including a container supporting table, sealing tape supporting means movable about a container supported on said table, and jaw means normally yieldingly clamping a container on said table, said jaw means comprising a stationary jaw member and an opposed mechanically operated retractible jaw device, said jaw device comprising a jaw plate adapted to engage containers to be sealed, a guide pin extending rearwardly from each end portion of said jaw plate, a plunger extending rearwardly from the mid-portion of said jaw plate between said guide pins, said plunger having a longitudinal slot extending for a substantial distance from its rear end and having a pivot pin extending transversely therethrough across said slot, a frame adapted to be secured to said table in any one of a plurality of positions of adjustment and slidably supporting said guide pins and said plunger, means normally urging said jaw plate, said guide pins and said plunger toward advanced container clamping position and comprising compression springs having their rear ends in abutment with a portion of said frame, a spring backing plate engaging the forward ends of said springs and supported slidably on said guide pins and said plunger, a stop member secured to the rear end of said plunger and engageable with a portion of said frame for defining the limit of advance of said jaw plate, said guide pins and said plunger, and means connecting said spring backing plate and said stop member whereby the force of said springs is applied through said spring backing plate and said plunger for yieldingly urging said jaw plate toward container engaging and clamping position.

15. The structure defined in claim 14, said last named means comprising screw means manually adjustable for varying the yielding thrust applied by said springs through said backing plate, said screw means, said stop, and said plunger to urge said jaw plate toward container clamping position.

16. In combination with the structure defined in claim 15, means for retracting said jaw plate from container engaging position against the thrust of said springs comprising a lever pivoted intermediate its ends to said frame, the upper end portion of said lever being disposed in the slot in said plunger and pivotally connected with said plunger by the pin extending through said plunger across said slot, and remotely operable flexible cable means connected with the lower end of said lever and operable to swing said lever and move said plunger in jaw plate retracting direction against the thrust exerted on said plunger by said springs.

17. In a container sealing device of the class described including a container supporting table, sealing tape supporting means movable about a container supported on said table, and jaw means normally yieldingly clamping a container on said table, said jaw means comprising a stationary jaw member and an opposed normally yieldingly operative retractible jaw device, said jaw device comprising a jaw plate adapted to engage containers to be sealed, a plurality of guide pins extending rearwardly from said jaw plate, a plunger extending rearwardly from said jaw plate, said plunger having a slot extending for a substantial distance from its rear end and having a pivot pin extending transversely therethrough across said slot, a frame on said table adjustable in the direction of said plunger and said guide pins and slidably supporting said guide pins and said plunger, means including compression springs surrounding each of said guide pins with their rear ends abutting a portion of said frame and normally urging said jaw plate, said plunger, and said guide pins yieldably in forward direction to advance said jaw plate to container engaging and clamping position, means for limiting the advance of said jaw plate comprising a stop member fixed to the rear end portion of said plunger and engageable with a portion of said frame for that purpose, and means for adjusting the force exerted by said springs comprising a cross-head member engaging the forward ends of said springs and slidably supported by said guide pins and said plunger, said adjusting means comprising a stud adjusting the relative separation of said stop member and said cross-head member.

18. The structure defined in claim 17 and means for retracting said jaw plate from container engaging and clamping position, comprising a lever pivoted to said frame intermediate its ends, with its upper end portion disposed in the slot in said plunger and pivotally connected with the pivot pin extending across said slot, a flexible control cable having one end pivotally connected to the lower end of said lever and a treadle device remote from said container supporting cable and operatively connected with the other end of said flexible cable and operatable to apply tension through said flexible cable to the lower end of said lever to swing said lever and retract the jaw plate against the force applied by said compression springs.

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