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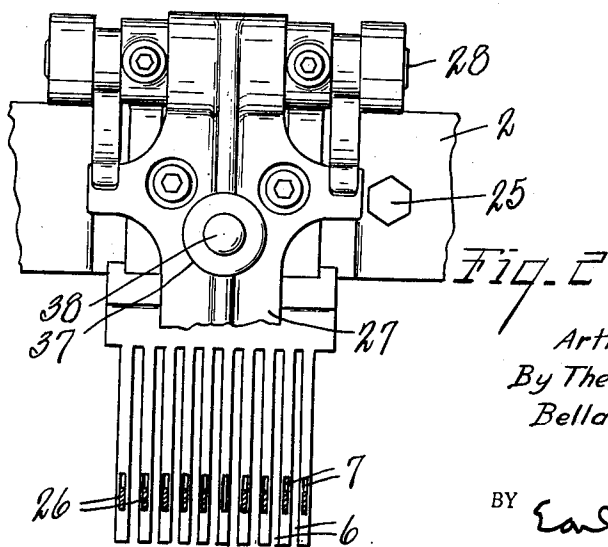
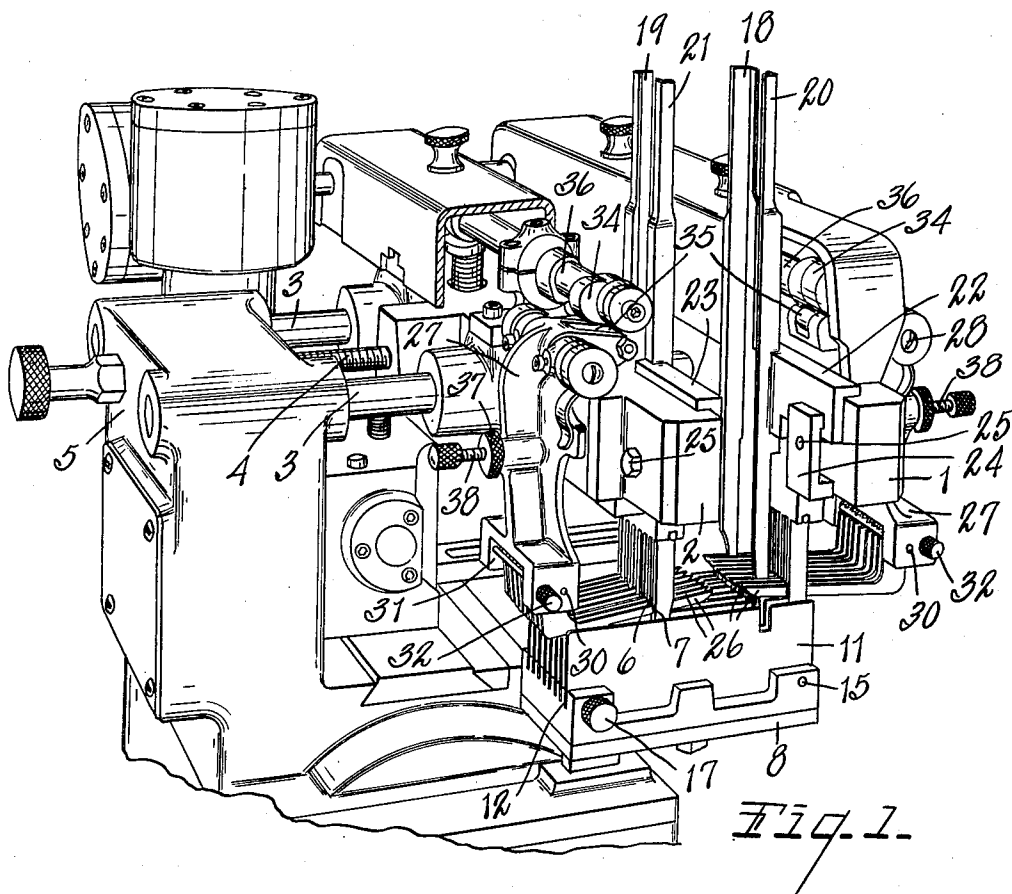
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2,248,122

PACKING MEANS FOR LABEL CUTTING AND FOLDING MACHINES

Filed May 8, 1940

3 Sheets-Sheet 1



Inventor

Arthur Rosenthal, deceased,
By The Michiga Trust Co. and,
Bella Jamison, Executors.

BY

Earl + Chappell

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3 Sheets-Sheet 2

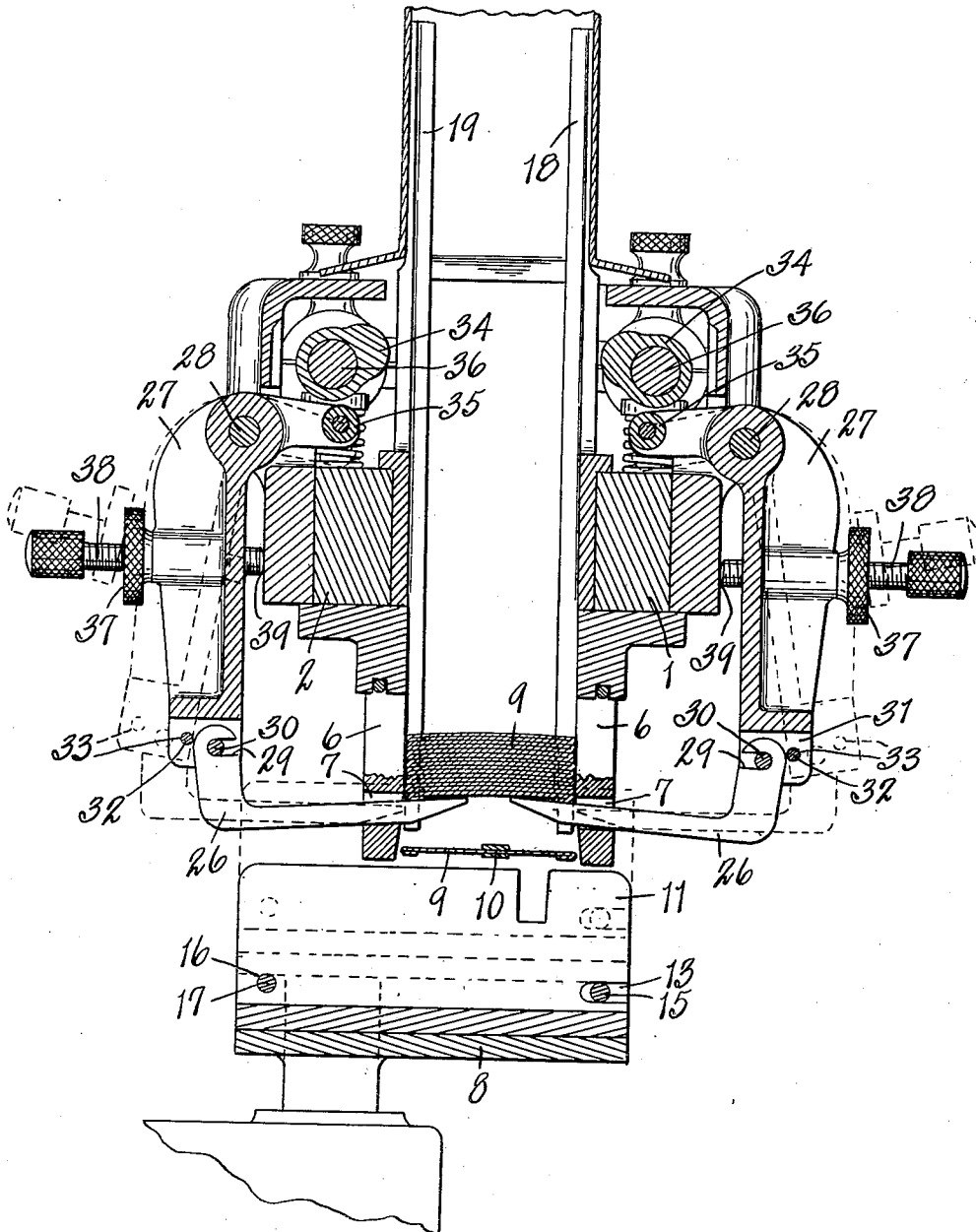


Fig. 3.

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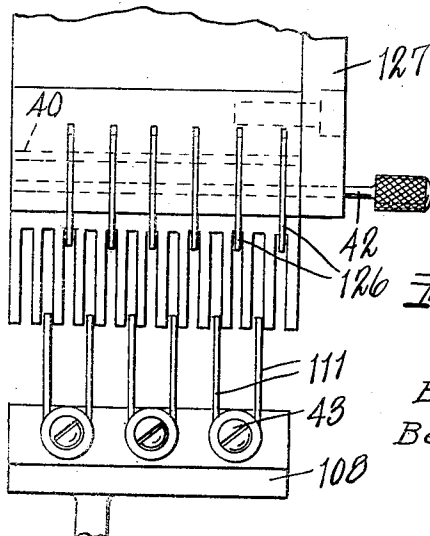
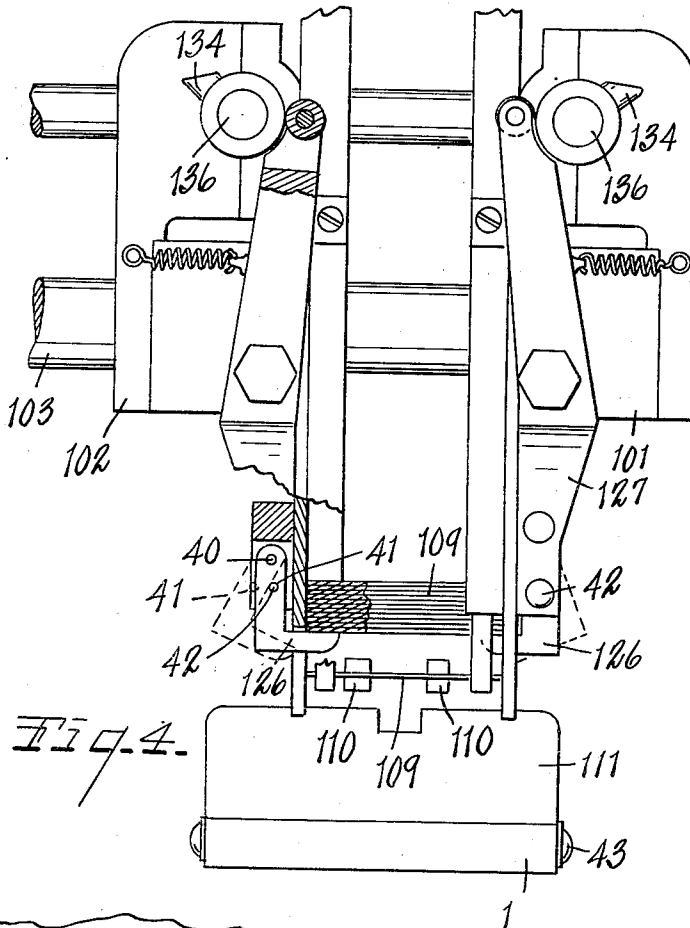
A. ROSENTHAL

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PACKING MEANS FOR LABEL CUTTING AND FOLDING MACHINES

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3 Sheets-Sheet 3



Inventor
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 Bella Jamison Executors
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UNITED STATES PATENT OFFICE

2,248,122

PACKING MEANS FOR LABEL CUTTING AND FOLDING MACHINES

Arthur Rosenthal, deceased, late of Grand Rapids, Mich., by The Michigan Trust Company, Grand Rapids, Mich., and Bella Jamison, Grand Rapids, Mich., executors, assignors to Rose Patch & Label Company, Grand Rapids, Mich., a corporation of Michigan

Application May 8, 1940, Serial No. 333,984

17 Claims. (Cl. 271—87)

This invention relates to packing means for use in connection with label cutting and folding machines or the like and is a continuation in part of application, Serial No. 191,740, filed February 21, 1938, for Apparatus for cutting, 5 folding, and creasing labels.

It has for its objects:

First, to produce a new and improved packing mechanism of the type above mentioned.

Second, to provide such a packing apparatus 10 which may be easily adjusted to receive labels or the like of various sizes.

Third, to provide such an apparatus which is simple in construction and which is positive in its operation.

Other objects and advantages pertaining to details and economies of construction and operation will appear from the description to follow. The invention is defined in the claims. Preferred forms of the invention are illustrated in the 20 accompanying drawings, in which:

Fig. 1 is a perspective view of the packing mechanism forming the invention, showing the mechanism in place on a label cutting and folding machine.

Fig. 2 is a detail view partly in section showing the bottom of one side of the packing mechanism and the label supporting fingers.

Fig. 3 is a detail sectional view through the mechanism showing the operating parts.

Fig. 4 is a view of a different form of the invention showing the operating parts in detail.

Fig. 5 is a fragmentary view showing the bottom of one side of the packer tube and a portion of the plunger and the label retaining fingers. 35

The packing mechanism consists of a stationary support 1 and a support 2 which is mounted on slides 3 to permit movement thereof toward or away from the support 1. The support 2 is moved to and from the support 1 by a screw 4 40 which is rotatably mounted in the base 5 of the machine and is screw threaded in the support 2.

In the bottom of each of the supports 1 and 2 are a plurality of open bottom slots 6 between 45 which are located a plurality of slots 7, the bottoms of which are closed. The slots 6 at the bottoms of the supports 1 and 2 register. Below the supports is a plunger 8 on which labels 9 are deposited by feeding jaws 10 which carry the 50 labels from the cutting and folding mechanism. The plunger reciprocates vertically and has a plurality of removable fins 11 formed of sheet metal or the like. These fins fit in slots 12 in the plunger and each is notched as indicated 55

at 13 to fit over a pin 15 extending transversely of the slots. Each fin is also provided with a hole 16 through which a removable pin 17 extends. The fins 11 are in register with the open 5 bottom slots 6 and provide a plunger of sufficient size to receive labels of various sizes and permit the adjustment of the support 2 toward and from the fixed support 1.

The labels 9 are fed into a packer tube which consists of stationary angle members 18 and 19 and adjustable angle members 20 and 21, which are carried on the supports 1 and 2. The angle members 18, 19, 20 and 21 extend from above the label feeding means 10 vertically in opposed 15 relationship. The adjustable angle members 20 and 21 are mounted respectively on slides 22 and 23 to permit adjustment toward and away from the angle members 18 and 19 along the supports 1 and 2. They are clamped in position by clamping plates 24 which are held in position by bolts 25 screw threaded therein and extending through the supports 1 and 2.

The labels 9 are held in the open bottom packing tube formed by the angle members 18, 19, 25 20 and 21 by fingers 26 which extend through the closed bottom slots 7 and are movable into the space at the bottom of the tube as indicated in full lines in Fig. 3 and may be retracted as shown in dotted lines in the same figure.

The fingers 26 are reciprocated by levers 27 30 pivoted at 28 on the supports 1 and 2. The levers extend downwardly and are slotted at their lower end to receive the fingers which are notched at 29 to fit over pin 30 which extends 35 through the slots 31 at the lower ends of the levers. The fingers are held in place by removable pins 32 which extend through holes 33 in the lower ends of the levers. The levers are reciprocated by cams 34 which engage cam followers 35 on the levers as they rotate on shafts 36.

The levers 27 and the fingers 26 are so disposed with reference to the slots 7 that upon reciprocation of the levers 27 from the dotted line position shown in Fig. 3 to the full line position, the ends 45 of the fingers 26 move upwardly to arch the labels as shown in Fig. 3, which helps to retain the labels momentarily in the packer tube during the time that the fingers 26 are retracted from the bottom of the open tube.

The distance which the fingers 26 move into the opening at the bottom of the tube is controlled by stop means 37 consisting of screws 38 carried by the levers 27 and engaging the supports 1 and 2 as indicated at 39.

The operation of the packer is as follows: The

feeding jaws 10 carry a label to the top of the plunger 8. The plunger then moves upwardly carrying the label thereon into the packer tube. As the plunger carrying the label moves upwardly, the fingers 26 are retracted and the plunger carries the label to a point above the position assumed by the fingers 26 when they move into the space at the bottom of the tube. The fingers 26 are then out of register with the fins 11 on the plunger and move into the packer tube between the fins 11 and engage the bottom of the label and arch it slightly as indicated. These fingers retain the labels in the tube until the plunger receives another label and completes the cycle. The plunger is, of course, retracted after the fingers 26 move into label supporting position.

It will be apparent that the packer can be adjusted to fit labels of various sizes in a very few moments. The adjustment for length can be easily accomplished by merely moving the support either to or away from the support 1. The stops 37 may be adjusted to permit the fingers 26 to move farther into the open space at the bottom of the packer tube for long labels and can be adjusted to permit less movement into the space for short labels to avoid clash between the fingers 26 on opposite sides of the tube. Adjustment for width is easily effected by moving the angle members 20 and 21 to or away from the stationary angle members 18 and 19. It may be that this adjustment will bring the angle members 20 and 21 to a position which would clash with either certain of the fingers 26 or fins 11. By the simple manipulation above described, the fingers or fins which would clash with the angle members 20 and 21 are removed and the machine is ready to receive labels.

In Figs. 4 and 5, a different form of the invention is shown. The stationary support 101 and the movable support 102 correspond to the supports 1 and 2 in the form of invention shown in Figs. 1-3. The slides 103 support the movable support 102 and the adjustment of the members toward and away from one another is effected in the same way. The packer tube is formed in the same way with angle members and the fingers 126 corresponding to the fingers 26 are mounted on levers 127 pivotally carried on the supports 101 and 102. The reciprocation of the levers is brought about by cams 134 on shafts 136. The fingers 126 are not removable from the levers although they are pivotally mounted at 40 and are provided with apertures 41 which may be engaged by removable pin 42 to hold the fingers in position to engage the labels when inserted through the openings 41 or may serve to hold the fingers 126 in a retracted position by engaging the edge thereof as indicated in Fig. 4.

The plunger 108 is substantially the same as the plunger 8. It has removable fins 111 which are clamped in position by screws 43. The operation is substantially the same, the plunger receiving the label 109 from the feeding jaws 110 and carrying the label up to the bottom of the packer tube. During this movement, the fingers 126 are retracted from the space at the bottom of the tube and then return beneath the label between the fins 111 on the plunger 108. The slots 106 receive the fins 111 on upward movement of the plunger and the slots 107, which in this instance need not have a closed bottom, serve as passageways for the fingers 126.

The terms and expressions which have been herein employed are used as terms of description

and not of limitation, and there is no intention, in the use of such terms and expressions, of excluding any equivalents of the features shown and described, or portions thereof, but it is recognized that various modifications are possible within the scope of the invention claimed.

Having thus described the invention, what we claim as new and desire to secure by Letters Patent is:

1. Apparatus of the class described comprising a pair of opposed supports each having a plurality of vertical open bottom slots in the bottom portion thereof and carrying opposed vertical means extending above said slots and forming opposed walls of a packer tube, a plunger comprising a plurality of vertical fins spaced to register with said open bottom slots, plunger actuating means for moving said plunger upwardly in said slots and for retracting the same, means for holding labels in the packer tube comprising vertically disposed levers pivoted on horizontal axes on said supports, closed bottom slots between said open bottom slots in the bottom portion of said supports, a plurality of individually removable fingers pivoted on each of said levers, said levers and fingers being so disposed that said fingers ride in the bottoms of said closed bottom slots and are moved through said slots and in an upward direction into the space at the bottom of said packer tube whereby labels in said packer tube are arched, and means for oscillating said levers to move said fingers into the space at the bottom of the tube and to retract them therefrom timed to retract said fingers as the plunger moves upwardly to carry a label to said packer tube and to move into the space at the bottom of the tube between the fins of the plunger before retraction of the plunger, and adjustable stops for said levers to adjustably limit the movement thereof into the space at the bottom of said tube and means to move said supports toward or away from one another.

2. Apparatus of the class described comprising a pair of opposed supports each having a plurality of vertical open bottom slots in the bottom portion thereof and carrying opposed vertical means extending above said slots and forming opposed walls of a packer tube, a plunger comprising a plurality of vertical fins spaced to register with said open bottom slots, plunger actuating means for moving said plunger upwardly in said slots and for retracting the same, means for holding labels in the packer tube comprising vertically disposed levers pivoted on horizontal axes, closed bottom slots between said open bottom slots in the bottom portion of said supports, a plurality of individually removable fingers pivoted on each of said levers said levers and fingers being so disposed that said fingers ride in the bottoms of said closed bottom slots and are moved through said slots and in an upward direction into the space at the bottom of said packer tube whereby labels in said packer tube are arched, and means for oscillating said levers to move said fingers into the space at the bottom of the tube and to retract them therefrom timed to retract said fingers as the plunger moves upwardly to carry a label to said packer tube and to move into the space at the bottom of the tube between the fins of the plunger before retraction of the plunger.

3. Apparatus of the class described comprising a pair of opposed supports each having a plurality of vertical open bottom slots in the bottom portion thereof and carrying opposed vertical means

extending above said slots and forming opposed walls of a packer tube, a plunger comprising a plurality of vertical fins spaced to register with said open bottom slots, plunger actuating means for moving said plunger upwardly in said slots and for retracting the same, means for holding labels in the packer tube comprising vertically disposed levers pivoted on horizontal axes on said supports, closed bottom slots between said open bottom slots in the bottom portion of said supports, a plurality of fingers pivoted on each of said levers, said levers and fingers being so disposed that said fingers ride in the bottoms of said closed bottom slots and are moved through said slots and in an upward direction into the space at the bottom of said packer tube whereby labels in said packer tube are arched, and means for oscillating said levers to move said fingers into the space at the bottom of the tube and to retract them therefrom timed to retract said fingers as the plunger moves upwardly to carry a label to said packer tube and to move into the space at the bottom of the tube between the fins of the plunger before retraction of the plunger, adjustable stops for said levers to adjustably limit the movement thereof into the space at the bottom of said tube, and means to move said supports toward or away from one another.

4. Apparatus of the class described comprising a pair of opposed supports each having a plurality of vertical open bottom slots in the bottom portion thereof and carrying opposed vertical means extending above said slots and forming opposed walls of a packer tube, a plunger comprising a plurality of vertical fins spaced to register with said open bottom slots, plunger actuating means for moving said plunger upwardly in said slots and for retracting the same, means for holding labels in the packer tube comprising vertically disposed levers pivoted on horizontal axes, closed bottom slots between said open bottom slots in the bottom portion of said supports, a plurality of fingers pivoted on each of said levers, said levers and fingers being so disposed that said fingers ride in the bottoms of said closed bottom slots and are moved through said slots and in an upward direction into the space at the bottom of said packer tube whereby labels in said packer tube are arched, and means for oscillating said levers to move said fingers into the space at the bottom of the tube and to retract them therefrom timed to retract said fingers as the plunger moves upwardly to carry a label to said packer tube and to move into the space at the bottom of the tube between the fins of the plunger before retraction of the plunger.

5. Apparatus of the class described comprising a pair of opposed supports each having a plurality of vertical slots in the bottom portion thereof, opposed vertical angle members carried by said supports and adjustable toward or away from one another along said supports and extending above said slots to form opposed walls of a packer tube and below the tops of said slots to form guides for labels or the like passing to said packer tube, a plunger comprising a plurality of individually removable vertical fins spaced to register with slots in the bottom of said supports, plunger actuating means for moving said plunger upwardly in said slots and for retracting the same, means for holding labels in the packer tube comprising oscillatable members on said supports having individually removable fingers extending through slots in said supports and out of register with

the fins on said plunger and means for oscillating said oscillatable members to move said fingers through the slots in the bottom of the support into the space at the bottom of the packer tube and for retracting them therefrom timed to retract said fingers when said plunger moves upwardly to carry a label to said packer tube and to move them into the space at the bottom of the said tube between the fins of said plunger to support labels before the plunger is retracted, and means for moving one of said supports toward or away from the other.

6. Apparatus of the class described comprising a pair of opposed supports each having a plurality of slots in the bottom portion thereof and carrying opposed vertical means extending above said slots and forming opposed walls of a packer tube, a plunger comprising a plurality of vertical fins in register with slots in the bottom of said supports, plunger actuating means for elevating and lowering said plunger, means for holding labels in said packer tube comprising vertically disposed levers pivoted on horizontal axes on said supports and having on their lower ends a plurality of laterally extending fingers out of register with the fins of said plunger and in register with slots in the bottom of said supports, and means carried on said supports to oscillate said levers to move said fingers through said slots into the space beneath said packer tube and to retract them therefrom timed to retract said fingers when said plunger is elevated and to move them into the space below said packer tube and between the fins of the plunger before lowering thereof, adjustable stop means to limit movement of said levers, and means to move said supports to and from one another.

7. Apparatus of the class described comprising a pair of opposed supports each having a plurality of slots in the bottom portion thereof and carrying opposed vertical means extending above said slots and forming opposed walls of a packer tube, a plunger comprising a plurality of vertical fins in register with slots in the bottom of said supports, plunger actuating means for elevating and lowering said plunger, means for holding labels in said packer tube comprising vertically disposed levers pivoted on horizontal axes on said supports and having on their lower ends a plurality of laterally extending fingers out of register with the fins of said plunger and in register with slots in the bottom of said supports, and means carried on said supports to oscillate said levers to move said fingers through said slots into the space beneath said packer tube and to retract them therefrom timed to retract said fingers when said plunger is elevated and to move them into the space below said packer tube and between the fins of the plunger before lowering thereof, and means to move said supports to and from one another.

8. Apparatus of the class described comprising a pair of opposed supports each having a plurality of slots in the bottom portion thereof and carrying opposed vertical means extending above said slots and forming opposed walls of a packer tube, a plunger comprising a plurality of vertical fins in register with slots in the bottom of said supports, plunger actuating means for elevating and lowering said plunger, means for holding labels in said packer tube comprising vertically disposed levers pivoted on horizontal axes on said supports and having on their lower ends a plurality of laterally extending fingers out of register with the fins of said plunger and in register with

slots in the bottom of said supports, and means carried on said supports to oscillate said levers to move said fingers through said slots into the space beneath said packer tube and to retract them therefrom timed to retract said fingers when said plunger is elevated and to move them into the space below said packer tube and between the fins of the plunger before lowering thereof.

9. Apparatus of the class described comprising a pair of opposed supports each having a plurality of vertical slots in the bottom portion thereof and carrying opposed vertical means extending above said slots and forming opposed walls of a packer tube, a plunger comprising a plurality of vertical fins spaced to register with slots in the bottom of said supports, plunger actuating means for moving said plunger upwardly in said slots and for retracting the same, means for holding labels in the packer tube comprising a plurality of fingers carried by each support and movable through slots in the bottom of said supports into the space at the bottom of said packer tube and out of register with the fins of said plunger, means for advancing said fingers through said slots across the bottom of said tube and for retracting said fingers timed to retract said fingers as said plunger moves upwardly to carry a label to said packer tube and to move into the space at the bottom of said tube between the fins of said plunger to support labels before the plunger is retracted, and means for moving one of said supports toward or away from the other.

10. Apparatus of the class described comprising a pair of opposed supports each having a plurality of vertical slots in the bottom portion thereof, opposed vertical angle members carried by said supports and adjustable toward or away from one another along said supports and extending above said slots to form opposed walls of a packer tube, a plunger comprising a plurality of vertical fins spaced to register with slots in the bottom of said supports, plunger actuating means for moving said plunger upwardly in said slots and for retracting the same, means for holding labels in the packer tube comprising a plurality of fingers carried by each support and movable through slots in the bottom of said supports into the space at the bottom of said packer tube and out of register with the fins of said plunger, means for advancing said fingers through said slots across the bottom of said tube and for retracting said fingers timed to retract said fingers as said plunger moves upwardly to carry a label to said packer tube and to move into the space at the bottom of said tube between the fins of said plunger to support labels before the plunger is retracted, and means for moving one of said supports toward or away from the other.

11. Apparatus of the class described comprising a pair of opposed supports each having a plurality of vertical slots in the bottom portion thereof, and carrying opposed vertical means extending above said slots and forming opposed walls of a packer tube, a plunger comprising a plurality of vertical fins spaced to register with slots in the bottom of said supports, plunger actuating means for moving said plunger upwardly in said slots and for retracting the same, means for holding labels in the packer tube comprising a plurality of fingers carried by each support and movable through slots in the bottom of said supports into the space at the bottom of said packer tube and out of register with the

fins of said plunger, and means for advancing said fingers through said slots across the bottom of said tube and for retracting said fingers timed to retract said fingers as said plunger moves upwardly to carry a label to said packer tube and to move into the space at the bottom of said tube between the fins of said plunger to support labels before the plunger is retracted.

12. Apparatus of the class described comprising a pair of opposed supports each having a plurality of vertical slots in the bottom portion thereof, opposed vertical angle members carried by said supports and adjustable toward or away from one another along said supports and extending above said slots to form opposed walls of a packer tube, a plunger comprising a plurality of vertical fins spaced to register with slots in the bottom of said supports, plunger actuating means for moving said plunger upwardly in said slots and for retracting the same, means for holding labels in the packer tube comprising a plurality of fingers carried by each support and movable through slots in the bottom of said supports into the space at the bottom of said packer tube and out of register with the fins of said plunger, and means for advancing said fingers through said slots across the bottom of said tube and for retracting said fingers timed to retract said fingers as said plunger moves upwardly to carry a label to said packer tube and to move into the space at the bottom of said tube between the fins of said plunger to support labels before the plunger is retracted.

13. Apparatus of the class described comprising a pair of opposed supports each having a plurality of vertical slots in the bottom portion thereof and carrying opposed vertical means extending above said slots and forming opposed walls of a packer tube, a plunger comprising a plurality of vertical fins spaced to register with slots in the bottom of said supports, plunger actuating means for moving said plunger upwardly in said slots and for retracting the same, means for holding labels in the packer tube comprising a plurality of fingers carried by each support and movable through slots in the bottom of said supports into the space at the bottom of said packer tube and out of register with the fins of said plunger, means for advancing said fingers through said slots across the bottom of said tube and in an upward direction to arch labels in said packer tube and for retracting said fingers timed to retract said fingers as said plunger moves upwardly to carry a label to said packer tube and to move into the space at the bottom of said tube between the fins of said plunger to support labels before the plunger is retracted, and means for moving one of said supports toward or away from the other.

14. Apparatus of the class described comprising a pair of opposed supports each having a plurality of vertical slots in the bottom portion thereof and carrying opposed vertical means extending above said slots and forming opposed walls of a packer tube, a plunger comprising a plurality of vertical fins spaced to register with slots in the bottom of said supports, plunger actuating means for moving said plunger upwardly in said slots and for retracting the same, means for holding labels in the packer tube comprising a plurality of fingers carried by each support and movable through slots in the bottom of said supports into the space at the bottom of said packer tube and out of register with the fins of said plunger, and means for advancing said fingers

through said slots across the bottom of said tube and in an upward direction to arch labels in said packer tube and for retracting said fingers timed to retract said fingers as said plunger moves upwardly to carry a label to said packer tube and to move into the space at the bottom of said tube between the fins of said plunger to support labels before the plunger is retracted.

15. Apparatus of the class described comprising an open bottom packer tube, a vertically movable plunger to carry labels or the like into said tube and means for supporting said labels when said plunger is retracted comprising label supporting means movable into the space at the bottom of the tube and means for supporting and moving said label supporting means into the space at the bottom of the tube and diagonally upwardly from opposite sides of said tube to engage and arch labels in said tube and retractable therefrom comprising a plurality of fingers, and means for retracting said label supporting means upon upward movement of said plunger and for moving said supporting means to label supporting position when the plunger is retracted.

16. Apparatus of the class described comprising an open bottom packer tube, a vertically movable plunger to carry labels or the like into said tube, and means for supporting said labels when said plunger is retracted comprising label supporting means movable into the space at the bottom of the tube and means for supporting and

moving said label supporting means into the space at the bottom of the tube and diagonally upwardly from opposite sides of said tube to engage and arch labels in said tube and retractable therefrom, and means for retracting said label supporting means upon upward movement of said plunger and for moving said supporting means to label supporting position when the plunger is retracted.

17. Apparatus of the class described comprising an open bottom packer tube, a vertically movable plunger to carry labels or the like into said tube and means for supporting said labels when said plunger is retracted comprising label supporting means movable into the space at the bottom of the tube and means for supporting and moving said label supporting means into the space at the bottom of the tube and upwardly to engage and arch labels in said tube and retractable therefrom, and means for retracting said label supporting means upon upward movement of said plunger and for moving said supporting means to label supporting position when the plunger is retracted.

THE MICHIGAN TRUST COMPANY,
By IVAN M. DENNIS,
Assistant Secretary.

BELLA JAMISON,
30 *Executors of the Estate of Arthur Rosenthal,
Deceased.*