Dec. 18, 1956 H. A. SMATHERS 2,774,203

METHOD OF FILLING TUBULAR COIN WRAPPERS

Filed June 21, 1954

Fig. 1.

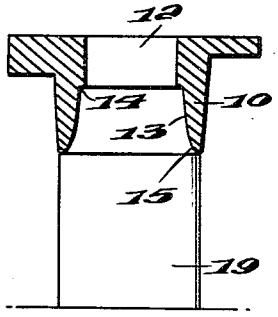


Fig. 3.

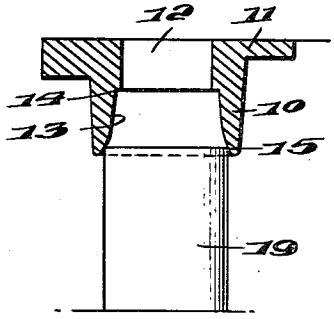


Fig. 5.

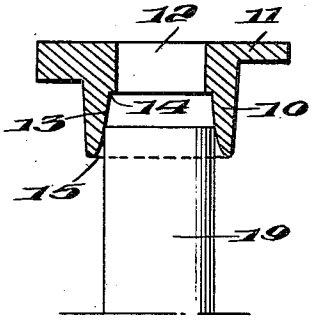


Fig. 2.

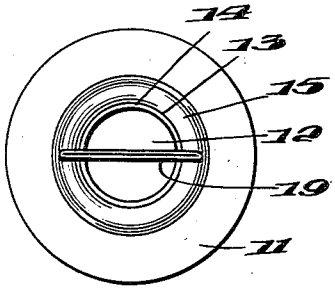


Fig. 4.

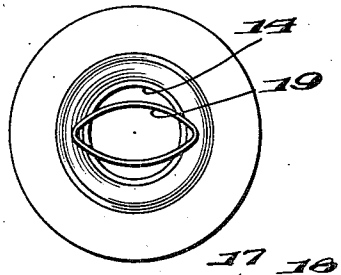


Fig. 6.

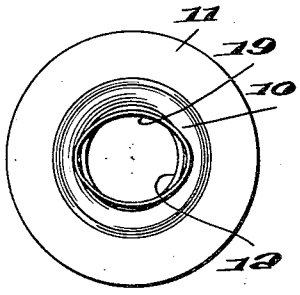


Fig. 7.

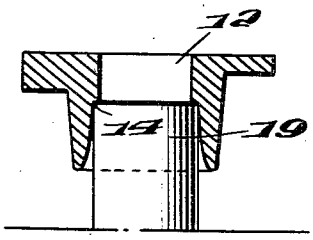


Fig. 9.

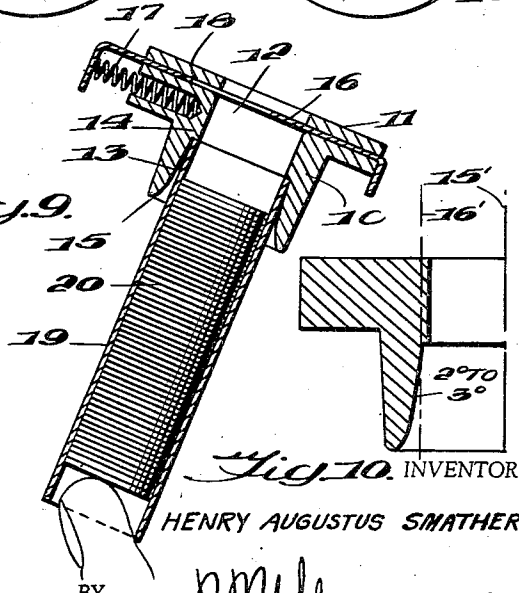


Fig. 8.

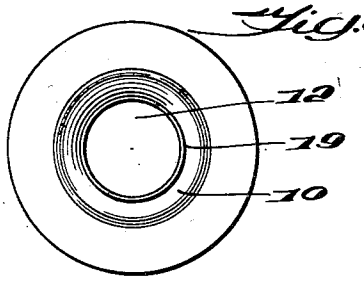


Fig. 10.

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United States Patent Office 2,774,203 Patented Dec. 18, 1956

2,774,203

METHOD OF FILLING TUBULAR COIN WRAPPERS

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Application June 21, 1954, Serial No. 437,931

4 Claims. (Cl. 53—29)

My invention relates to a method of opening and filling flat tubular coin wrappers.

Expanded cylindrical tubular coin wrappers are in general use and are easy to fill with coins. The disadvantage of this type of coin wrappers is that they take up too much space in shipment or storage.

Tubular coin wrapers are also made flat or collapsed, and the advantage is that a great deal of space is saved in shipment and storage. However, it is very difficult to expand a flat or collapsed tubular coin wrapper into a true cylindrical shape for properly receiving the coins.

I provide a device for use in the practice of the method. This device includes a rigid body portion having a cylindrical recess, and a slightly tapered recess leading into the discharge end of the cylindrical recess. The body portion has an outer recess which has a high degree of taper and leads into the discharge end of the slightly tapered portion or recess. A flat or collapsed tubular coin wrapper is manually operated to radially compress the same to partly open it sufficiently so that its end may be introduced into the outer highly tapered portion, and by manipulation of the wrapper, it is completely expanded and will become truly cylindrical when its free end reaches the cylindrical recess. This will render the quick and convenient insertion of the coins into the expanded originally flat tubular wrapper.

In the drawings, forming a part of this application and in which like numerals are employed to designate like parts throughout same,

Figure 1 is a diagrammatic view, in side elevation, illustrating the first step of the method,

Figure 2 is an end elevation of the same,

Figure 3 is a view similar to Figure 1 showing the next step in the method,

Figure 4 is an end elevation of the same,

Figure 5 is a view similar to Figure 1 showing a further step in the method,

Figure 6 is an end elevation of the same,

Figure 7 is a view similar to Figure 1 showing the next and final step of the method,

Figure 8 is an end elevation of the same,

Figure 9 is a central vertical longitudinal section through a device used in the practice of the method,

Figure 10 is an enlarged vertical section through the tubular tapered member, indicating the degree of taper of the slightly tapered recess.

In the drawings, the numeral **10** designates a rigid body portion, which may be formed of plastics or any suitable material. This body portion **10** includes a flange **11**, at its top. The body portion **10** is arranged in an upstanding position, in use, and is held stationary upon a suitable supporting frame, not shown.

The body portion **10** has a cylindrical recess **12** which is vertically inclined to correspond to the inclination of the body portion **10**. The cylindrical recess **12** has its discharge end leading into a slightly tapered recess **13**, increasing in diameter downwardly. The recess **13** is circular in cross section and its upper reduced end terminates at the shoulder **14**. The taper of the recess **13** is slight

and is preferably at 2° to 3° with respect to the central longitudinal axis of the recess **12**. The recess **13** is concentric with the recess **12**. The body portion **10** is provided with a highly tapered recess **15**, leading into the lower end of the recess **13**. The recess **15** is circular in cross section and is concentric with the recesses **12** and **13**.

The numeral **16** designates a slide or valve which is held in a closed position by a spring **17**. The slide **16** has a coin opening **18**, and when the slide **16** is shifted to the open position, opening **18** will register with recess **12**, and coins from the holder or hopper, not shown, will pass into and through the cylindrical recess **12**.

The numeral **19** designates an originally flat or collapsed coin wrapper, which is tubular and formed of paper or the like. The numeral **20** designates the coins.

In the practice of the method, the tubular coin wrapper **19** in its collapsed condition, has its intake end brought into contact with the lower end of the body portion **10**, Figures 1 and 2. The collapsed coin wrapper is arranged radially of the recess **15**, and the edges of the coin wrapper are slightly pressed inwardly by the fingers and the coin wrapper is partly expanded, Figures 3 and 4, and the expanding is gradually increased as the partly expanded wrapper is forced upwardly into the sharply tapered recess **15**, Figures 3 and 4. The partly expanded wrapper **19** is now moved upwardly further and enters the lower end of the slightly tapered recess **13**, and the expanding of the partly expanded wrapper at its upper end gradually continues to circumferentially expand, and is approaching the cylindrical shape. When the upper end of the wrapper **19** reaches the shoulder **14**, the wrapper **19** will be truly cylindrical. While the partly expanded wrapper is having its upper end inserted into the recesses **15** and **13**, the wrapper may be turned slowly upon its longitudinal axis, thus ironing the wrapper so that its intake end will be truly cylindrical when it contacts with the shoulder **14**. The shoulder **14** is slightly wider than the thickness of the wall of the wrapper **19**, so that the inner face of the wrapper will be substantially flush with the inner face of the recess **12**, and will not extend beyond the inner face of the recess **12**.

After the wrapper has been inserted into the recess **13** and its upper end contacts with the shoulder **14**, the finger may be inserted into the lower end of the wrapper, Figure 9. It is essential that the intake end or portion of the wrapper be held cylindrical, and that the wrapper be held at least partly expanded throughout its entire length, during the filling process. However, the wrapper need not be expanded to a truly cylindrical form throughout its entire length, before the coins are introduced therein.

When the wrapper has its upper end expanded to the truly cylindrical form, Figure 9, and the wrapper is held in the position shown in Figure 9, the valve **16** is shifted to the open position and the coins will drop through the opening **18** into the cylindrical recess **12**, and drop into the wrapper **19**. The action of these coins, by gravity, completes the expanding of the wrapper throughout its entire length, and the stack of coins are illustrated in Figure 9. The finger may remain in the lower end of the wrapper **19** and the wrapper separated from the body portion **10**, at which time, the ends of the wrapper are folded over the stack of coins, and the method is complete.

The interior diameter of the tapered recess **13**, at its reduced end, is the same as the exterior diameter of the completely expanded tubular coin wrapper **19**. The recess **13** is slightly tapered, as stated, and the taper of this recess is from 2° to 3° with respect to the central vertical longitudinal axis of the recess **12** or with respect to a line **16'** parallel with the axis **15'**. If this taper were too abrupt, the action of the tapered recess would roll or fold the free end of the tubular wrapper **19**, which does not occur with the slight taper.

Having thus described my invention, I claim:

1. The method of expanding and filling flattened open ended tubular coin wrappers comprising holding the wrapper while flat between the fingers and positioning one end of the wrapper adjacent the entrance of a downwardly opening and downwardly flared recess, compressing the wrapper edgewise between the fingers for partially expanding it so that the end thereof may be inserted into said recess, inserting said end of the partly expanded wrapper upwardly within the flared recess and toward the reduced end of the recess to gradually impart to the wrapper a substantially truly cylindrical shape, introducing a finger into the lower end of the expanded wrapper to form a support for a stack of coins of known height to be introduced into the wrapper so that the stack of coins when introduced will be positioned approximately centrally with respect to the length of the wrapper, and then introducing the stack of coins downwardly through the top of the wrapper so that the stack is supported within the wrapper by the finger.

2. A method of packaging coins comprising holding a flattened open ended tubular coin wrapper between the fingers in a generally upright position with the upper end of the wrapper adjacent the entrance of a downwardly opening and downwardly flared recess, compressing the wrapper between the fingers for partially expanding it so that its upper end may be started into the flared end of said recess, inserting the upper end of the partly expanded wrapper upwardly within the recess to gradually fully expand same and impart to the wrapper a substantially cylindrical shape, continuing the upward insertion of the wrapper into the recess until the upper end of the wrapper engages a shoulder within the recess to positively limit its upward movement, introducing a finger into the lower end of the expanded wrapper a proper distance to engage the lower end of a stack of coins of known height for positioning the stack substantially centrally within the wrapper and with the ends of the stack spaced substantially equidistantly from the ends of the wrapper, introducing the stack of coins downwardly into the wrapper and through the upper end of the wrapper until the stack is supported within the wrapper by said finger, and then removing the wrapper containing the stack of coins from said recess and folding the open end portions of the wrapper over the ends of the stack for completing the package.

3. A method of packaging coins comprising holding a flattened open ended tubular coin wrapper between the fingers in an inclined position with the upper end of the wrapper adjacent the entrance of an inclined downwardly opening and downwardly flared recess, compressing the wrapper between the fingers for partly expanding it so that its upper end may be started into the flared recess, inserting the upper end of the partly expanded wrapper axially upwardly within the recess to gradually fully expand the same and impart to the wrapper a substantially cylindrical shape, continuing the upward movement of the wrapper into the recess until the upper end of the wrapper engages a shoulder of the recess and the bore of the expanded wrapper substantially registers with a cylindrical bore above the shoulder of the recess, introducing a finger into the lower end of th expanded wrapper a proper distance to engage the lower end of a stack of coins of known height to be introduced into the wrapper for positioning the stack substantially centrally therein and with the ends of the stack spaced from the ends of the wrapper, allowing the stack of coins to slide downwardly from the bore above said shoulder and through the upper end of the wrapper and into the wrapper until the lower end of the stack rests upon the said finger, and then removing the wrapper containing the stack of coins from said recess and folding the end portions of the wrapper over the ends of the stack for completing the package.

4. The method of expanding and filling a flattened open ended tubular coin wrapper comprising holding the wrapper while flat between the fingers in a generally upright position and placing the upper end of the wrapper adjacent the entrance of a downwardly opening recess which is circular in cross section and flaring abruptly near its lower end and more gradually above its lower end, compressing the wrapper between the fingers for partially expanding it so that the upper end of the wrapper may be inserted within the abruptly flaring portion of said recess, inserting the partly expanded wrapper axially upwardly within the recess so that the wrapper in passing over the abruptly flared and gradually flared portions of the recess will have gradually imparted to it a substantially cylindrical shape, continuing the upward movement of the wrapper within the recess until the upper end of the wrapper engages a shoulder of the recess at the upper end of the gradually flared portion of the recess and with the bore of the fully expanded wraper substantially flush with a cylindrical bore above said shoulder, and then introducing a stack of coins downwardly from the bore above said shoulder and into the wrapper while supporting the lower end of the coin stack spaced from the lower end of the wrapper.

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