Nov. 29, 1938. L. FRANCIS 2,138,696

CALKING UNIT

Filed Feb. 25, 1937 2 Sheets-Sheet 1

Fig. 1.

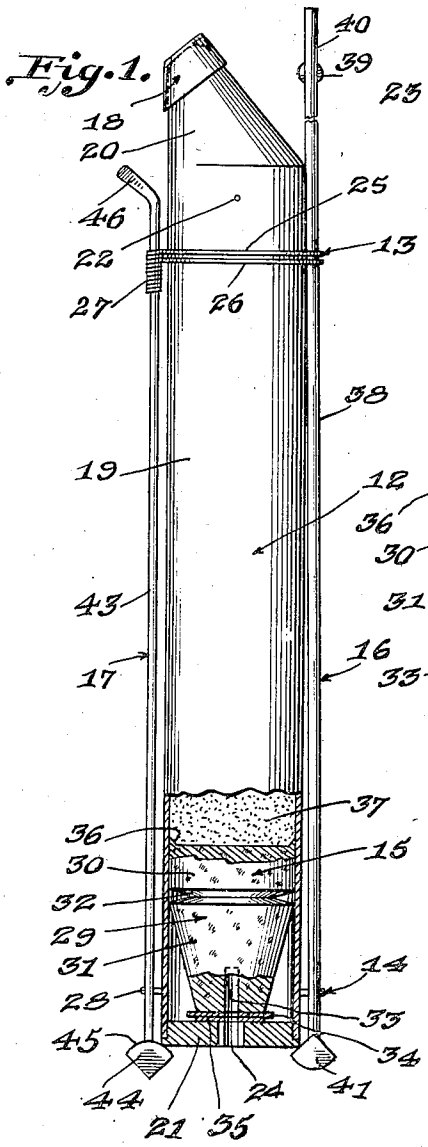


Fig. 2.

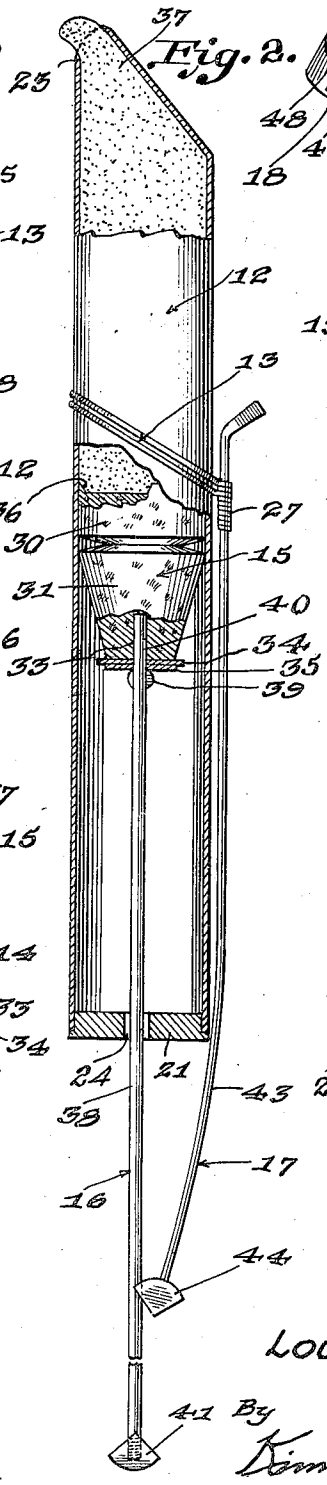


Fig. 3.

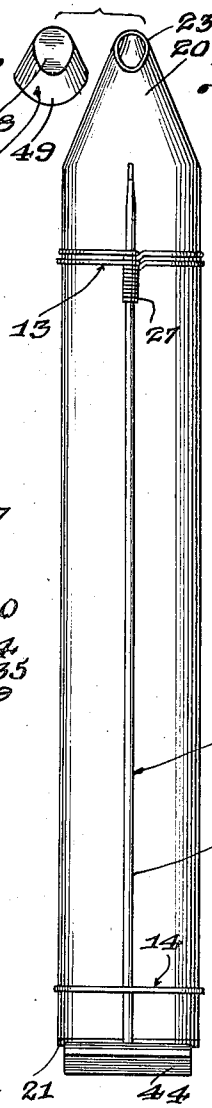


Fig. 4.



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Fig. 5.

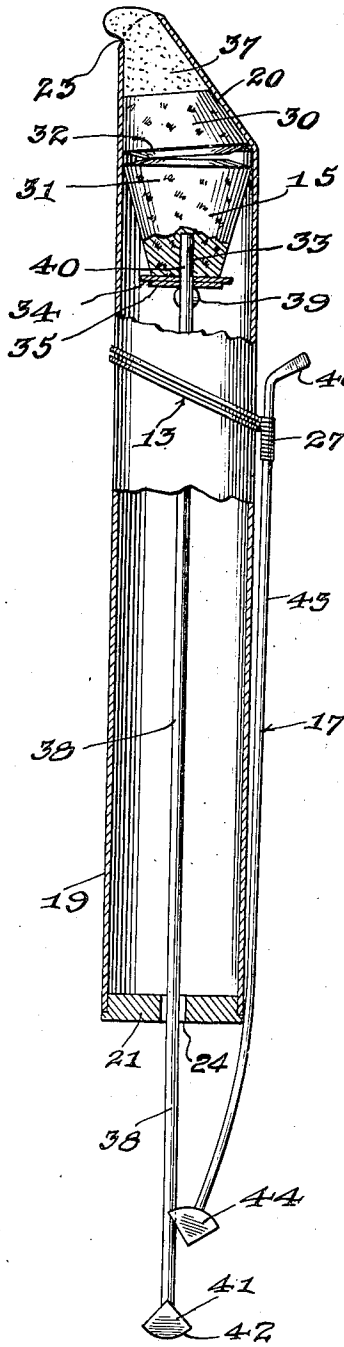


Fig. 6.

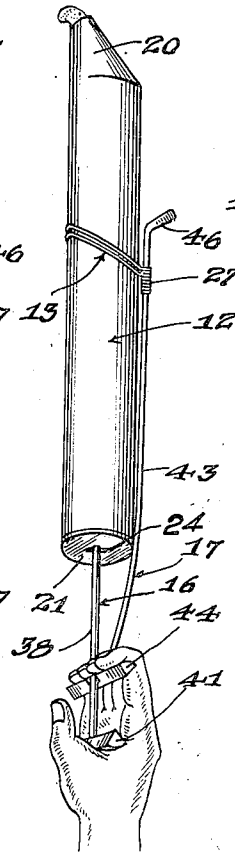


Fig. 7.

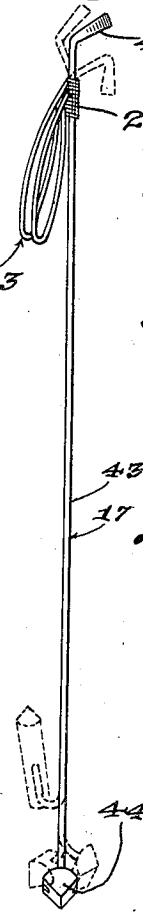


Fig. 8.

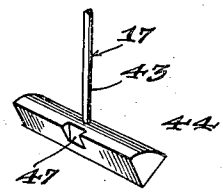


Fig. 9.

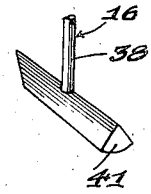
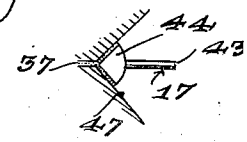


Fig. 10.



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2,138,696

CALKING UNIT

Louis Francis, Miami, Fla.

Application February 25, 1937, Serial No. 127,795

12 Claims. (Cl. 18—3.5)

This invention relates to a calking unit designed primarily for the carrying out of calking operations, but it is to be understood that a calking unit, in accordance with this invention is for use in any connection for which it may be found applicable.

The object of the invention is to provide, in a manner as hereinafter set forth, a unit of the class referred to whereby calking compounds, putty, paint, paste or other compounds will be directed in a manner to be delivered only at the desired point of reception therefor thereby overcoming waste.

A further object of the invention is to provide, in a manner as hereinafter set forth a calking unit capable of being operated manually by one or both hands for the delivery of a calking compound or other composition at the point desired.

A further object of the invention is to provide, in a manner as hereinafter set forth, a calking unit including a gun from which a calking compound or other composition may be expelled and with the gun including a discharge spout capable of being bent to various angles and the outlet opening of the discharge spout capable of being selectively shaped to the desired contour and contracted and expanded.

A further object of the invention is to provide, in a manner as hereinafter set forth, a calking unit including a calking gun formed of a container element for the compound and having an outlet, an expeller element within the container element, a shifting element for the expeller element operated from the palm of the hand, and an anchoring element for the fingers coupled with the container element and coacting with the shifting element to provide for operating the gun to expel the contents of the container element by using but one hand.

A further object of the invention is to provide, in a manner as hereinafter set forth the shifting and anchoring elements aforesaid respectively with an abutment part and a gripper part shaped in a manner to be used as compressors and smoothers for the expelled portion of the compound from the container element and with said gripper part capable of being adjusted to various inclinations with respect to the remaining part of the anchoring element for the purpose of conveniently employing it at the place to which the compound has been deposited.

A further object of the invention is to provide the aforesaid abutment and gripper part of substantially triangular contour in cross section.

A further object of the invention is to provide the aforesaid container element with removable means for detachably connecting the aforesaid shifting and anchoring elements thereto.

A further object of the invention is to provide, in a manner as hereinafter set forth a removable cap element in the form of a thimble for closing the outlet of the aforesaid container element and when removed capable of being employed as a compressor and shaper for the expelled portion of the compound.

Further objects of the invention are to provide, in a manner as hereinafter set forth a calking unit which is simple in its construction and arrangement, compact, conveniently employed, thoroughly efficient for the purpose intended thereby, readily assembled, and inexpensive to manufacture.

To the above ends essentially and to others which may hereinafter appear, the invention consists of the novel construction, combination and arrangement of parts as will be more specifically described and as are illustrated in the accompanying drawings wherein is shown an embodiment of the invention, but it is to be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention as claimed.

In the drawings:

Figure 1 is a side elevation, broken away at its lower end of the calking unit closed,

Figure 2 is a longitudinal sectional view of the calking unit open and arranged for expelling the calking compound by the employment of but one hand of the user,

Figure 3 is a front elevation of the unit with the cap for closing the outlet of the container element removed from the latter, but illustrated,

Figure 4 is a front elevation of the outlet of the container element and showing in full lines the normal shape of the outlet and in dotted lines other shapes which said outlet may be formed,

Figure 5 is a view similar to Figure 2 with the expelling element at the limit of its expelling function,

Figure 6 is a perspective view of the unit in position for expelling the compound or composition therefrom by the use of one hand,

Figure 7 is a perspective view of the anchoring and coupling elements of the device and illustrating in full lines the normal position of the gripper of the anchoring element and in dotted lines several adjusted positions of said gripper,

Figure 8 is a fragmentary view, in perspective, of the anchoring element,

Figure 9 is a view similar to Figure 8 of the shifting element, and

Figure 10 is an end elevation of the gripper of the anchoring element illustrating said gripper in compound compressing and shaping position.

The unit includes a container element 12 for the compound or composition, an outer coupling element 13, an inner coupling element 14, an expelling element 15 operating in the container element 12, a shifting element 16 for the expelling element 15, an anchoring element 17 for the fingers of a hand, and a cap element 18 for removably closing the outlet of the container element 12.

The container element includes a tubular body part 19, a spout 20, a removable plug 21, and a sample delivery outlet 22 adjacent the forward end of the body part 19. The body part 19 and spout 20 may be formed of separate parts and with the spout 20 connected to the forward end of body part 19. The latter and the spout 20 may be an integral body formed of any suitable material. The spout 20 however must be made of a material permitting of its being bent in any desired manner relative to body part 19. The spout 20 is substantially of tapered formation and by way of example is shown as having its front straight, its rear inclined inwardly and forwardly and each of its sides inclined inwardly from its lower end. The outlet 23 of the spout 20 is normally to be of ovoidal contour. The spout 20 should be formed of a material whereby the contour of the outlet 23 may be changed, such as is shown in dotted lines in Figure 4. The plug 21 extends into the inner end of the body part 19 and is formed with an axial opening 24.

The outer coupling 13 consists of superposed spaced ring-like portions 25, 26 merging at one side into a tubular part 27 which extends inwardly from the ring 26. The outer coupling 13 is formed from a single length of wire bent in a manner to provide the rings 25, 26 and the part 27. The rings 25, 26 are termed the body part of the outer coupling 13 and are of greater diameter than the body part 19. The outer coupling 13 is to be arranged in encompassing spaced relation with respect to the body part 19 in proximity to the spout 20. The part 27 is to be disposed in parallel spaced relation to and disposed lengthwise with respect to body part 19. The purpose of the outer coupling element 13 will be hereinafter referred to.

The inner coupling element 14 consists of a ring 28 disposed in encompassing spaced relation with respect to the body part 19 in proximity to the inner end of the latter. The purpose of the inner coupling element 14 will be presently referred to.

The expelling element 15 includes a body part 29 of any suitable material, preferably cork. The body part 29 is formed of a circular leading portion 30 of a diameter to snugly engage the inner face of the body part 19 and a follower portion 31 which gradually decreases in diameter from its forward to its rear end. The portions 30 and 31 of the body part 29 are separated by an annular groove 32 of V-shaped cross section, or in other words, the body part 29 has a peripheral endless incut to facilitate the separation of the leading portion 30 from the follower portion 31 so that the leading portion 30 will assume the position shown in Figure 5 when said leading portion enters the spout 20. The follower portion 31 is formed with an axially arranged socket 33 opening at its rear end. Secured against the rear end of the follower portion 31 is a washer 34 having its inner edge registering with the wall of the socket 33. The washer 34 is of greater diameter than that of the rear end of portion 31. Secured to the washer 34 is a washer 35 of less diameter than the washer 34. The inner edge of washer 35 registers with the inner edge of washer 34. The leading end of the leading portion 30 is provided with a cavity 36 having a bevelled side wall to facilitate the compound or composition 38 which is arranged in the container element 12, to enter into the leading end of the expeller element 15 and by this arrangement the expelling action is somewhat facilitated.

The shifting element 16 for the expeller element 15 consists of an elongated substantially rigid rod or bar 38 formed in proximity to its forward end with a lateral enlargement 39 of a diameter to permit it to pass through opening 24 in the spider 21. When the element 16 is used the portion 40 thereof, forwardly of the enlargement 39 is extended through the washers 34, 35 and into the socket 33. The enlargement 39 abuts the washer 35. The rod 38 is termed the shank of the element 16 and is secured at its inner end to the apex of a substantially triangular shaped abutment member 41. The point at which rod 38 is secured to abutment 41 is substantially central of the apex of the latter. The wide side or base 42 of the abutment 41 is of segmental contour. When the element 16 is not in use it is disposed parallel to the element 12 and coupled to the latter by the coupling elements 13 and 14. The element 16 is employed for shifting the element 15 whereby the latter will expel the compound or composition 37 from the outlet of the spout 20.

The anchoring element 17 includes an elongated bendable bar 43 of less length than the rod 38 and which is termed the shank of the element 17. Secured to the inner end of the bar 43 is a gripper member 44 of substantially triangular cross section. The base 45 of the gripper 44 is of segmental contour. The rear end of bar 43 is secured to the base 45 of the gripper 44 centrally thereof. The forward or outer end 46 of bar 43 is angularly disposed. The element 17 is connected to the coupling element 13 and in this connection the bar 43 of element 17 extends through and is soldered to part 27.

The gripper 44 is formed with a groove 47 centrally of one corner thereof (Figure 8). One of the functions of the element 17 is to associate with the coupling member 13 and the shifting element 16 to provide for the operation of the shifting element 16 by one hand causing the moving of the expelling element 15 forwardly resulting in the discharge of the compound or composition from the container element 12. When the element 17 is associated with the coupling element 13 and shifting element 16 for the purpose aforesaid, the gripper member 44 of element 17 is gripped by the fingers of the hand and the abutment member 41 is engaged by the palm of the hand such as shown in Figure 6, whereby on the application of finger pressure and hand palm pressure the expelling action aforesaid will be accomplished. When element 17 is associated with element 16 it extends rearwardly from the container section 12 and bar 43 is bent inwardly to an extent whereby rod 38 will seat in groove 47 of gripper 44. The cou-

pling element 14 is removed from the coupling position relative to elements 16 and 17 when the unit is to be employed in the foregoing particular. In fact, when the unit is used for any purpose the coupling element 14 is removed. When the element 17 is employed for a purpose not associated with element 16 the coupling element 13 and element 17 are bodily removed from container element 12.

The segmental face of the abutment member 41 of the element 16 may be employed for smoothing the deposited compound or composition and also for compressing the latter.

The gripper member 44 of element 17 may be employed for applying pressure to the deposited compound or composition and also for shaping the same, and in this connection attention is directed to Figure 10. The gripper member 44 may be disposed in different angular relations relative to bar 43 to facilitate the positioning thereof at the point where the compound or composition has been deposited. The end terminal portion 46 may also be employed as a pressure applying means and a shaper for the compound or composition and said terminal portion may be disposed at various inclinations with respect to bar 43 such as shown by the dotted line positions of Figure 7.

The compound or composition may be expelled from the container element 13 solely by the use of the shifting element 16 and when so doing the element 16 is engaged with the element 15, after which the operator grips the container element 12 by one hand and element 16 by the other hand for the purpose of shifting element 16 forwardly. On the shifting of element 16 forwardly the expelling element 15 will be carried therewith and act in a manner to discharge the contents or a portion of the contents of the container element 12.

In Figure 10 the work operated upon is indicated at 47, the compound applied to the work at 37. Figure 10 shows the gripper 44 of element 17 acting upon the compound 37.

The cap element 18 includes a head 48 of ovoidal contour which is integral with a rim 49 of ovoidal contour. The rim is substantially of frustro-tapered contour. As before stated the element 18 is of thimble-like form and is capable of smoothing, compressing and shaping the deposited compound or composition. The rim of element 18 is capable of conforming in contour to the outer end terminal portion of the spout 20 to frictionally engage the latter when in position to close outlet 23.

A unit in accordance with this invention may be constructed so cheaply as to render it practicable to discard the entire construction when the container is once emptied.

What I claim is:

1. In a calking unit, a calking material container including a cylindrical body part and a spout of substantially triangular contour in lengthwise section, a compressible calking material expelling element of cross sectional contour corresponding to that of said body part, said element operating within the container and being formed of a leading part and a follower part disposed in severable relation to provide for said leading part operating in the spout under a state of compression when conforming to the shape of the spout.

2. In a calking unit, a calking material container including a hollow body part open at each end and a spout of a contour different from that of said body part, and a compressible calking material expelling element operating within the container and of a cross sectional contour corresponding to that of said body part, said element being formed of a leading part and a follower part disposed in severable relation to provide for said leading part operating in the spout under a state of compression when conforming to the shape of the spout.

3. In a calking unit, a calking material container including a hollow body part open at each end and a spout of a contour different from that of said body part, and a compressible calking material expelling element operating within the container and of a cross sectional contour corresponding to that of said body part, said element being formed of a leading part and a follower part disposed in severable relation to provide for said leading part operating in the spout under a state of compression to conform to the shape of the spout, said spout being formed of a material possessing a characteristic to provide for bending it at an angle with relation to said body part and for changing the contour of its body and the contour of its discharge opening.

4. In a calking unit, a calking material container including a body part and a spout, a compressible calking material expelling element operating within said body part and spout, a shifting element for said expelling element having its rear end provided with an abutment member, a bendable bar exteriorly of and coupled to one side of said body part, and said bar provided at its rear end with a gripper member for coacting with said abutment member.

5. A calking unit comprising a calking material container formed of a body part and a spout, a compressible calking material expelling element operating in the container, a shiftable element adapted for engaging in and for shifting the expelling element, a bendable bar positioned exteriorly of the container, means for slidably connecting the said bar to the container, said shifting element having its rear end provided with an abutment member for the hand of a person, and said bar having its rear end provided with a member to be gripped by the hand of a person, said members coacting when engaged by the hand of a person to provide for the operating of the shiftable element to make said expelling element active.

6. A calking unit comprising a calking material container formed of a body part and a spout, a compressible calking material expelling element operating in the container, a shiftable element adapted for engaging in and shifting the expelling element, a bendable bar positioned exteriorly of the container, means for slidably connecting the said bar to the container, said shiftable element having its rear end provided with an abutment member for the hand of a person when such element is engaged in said expelling element, said bar having its rear end provided with a member to be gripped by the hand of a person, said members coacting when engaged by the hand of a person to provide for the operating of the shiftable element to make said expelling element active, said members being of substantially triangular cross section and oppositely disposed, said abutment member being secured at its transverse median to said expelling element, and said gripper member being secured at its transverse median to said bar.

7. In a calking unit, a gun including a container formed of a tubular body part open at each

end and a conducting off spout for the contents of said body part, said spout communicating at its inner end with one end of said body part and the said communicating ends being of like diameter, the other end of said spout constituting a discharge opening at the outer end of the gun, said spout in lengthwise section being of substantially triangular contour and formed of a material possessing a characteristic to provide for bending it at an angle to said body part and for changing its shape and the contour of its discharge opening.

8. In a calking unit, a gun including a calking material container formed of a tubular body part open at each end and a spout communicating with said body part and having a permanently opened outlet, said spout in lengthwise section being of substantially triangular contour and formed of a material possessing a characteristic to provide for bending it at an angle to said body part and for changing its shape and the contour of its discharge outlet, and a shiftable compressible calking material expelling element operating in said body part and spout and formed of a leading part and a follower part arranged in severable relation to provide for the leading part travelling in a direction at an angle to said follower part.

9. In a calking unit, a calking material container, a spout element carried by the container at one end of the latter and having one of its sides extending inwardly at an upward inclination from the container to the opposite side of said element to provide the latter with a reduced outlet, a compressible expeller element for the material formed of a leading and a follower part disposed in severable relation for operating respectively in said spout and container, a shiftable element for the expeller element formed at its inner end with a hand abutment member, a bendable bar formed at its inner end with a hand grip member, means for detachably connecting said shiftable element to said container, said means having a part for connecting the outer terminal portion of said bar thereto and said means providing for shiftably connecting the bar to the container.

10. In a calking unit, a calking material container open at each end, a spout element carried by and having the direction of travel therethrough of the calking material disposed at an angle to the direction of passage of such material through said container, said spout having its transverse cross sectional area gradually decreasing from its inner to its outer end, said element having its outlet end disposed at an inclination with respect to the plane of the container, one of its sides disposed in a plane forming a continuation of the plane of the carrier and the other of its sides disposed inwardly at an upward inclination with respect to the plane of the container and towards the said other side to form a reduced outlet end, said spout in lengthwise section being of substantially triangular contour and formed of a material possessing a characteristic to provide for bending it at an angle to said body part and for changing its shape and the contour of its discharge outlet, and a shiftable compressible calking material expelling element operating in said body part and spout and formed of a leading part and a follower part arranged in severable relation to provide for the leading part travelling in a direction at an angle to said follower part.

11. In a calking unit, a calking material container, a spout element carried by the container at one end of the latter and having one of its sides extending inwardly at an upward inclination from the container to the opposite side of said element to provide the latter with a reduced outlet, an expeller element for the material formed of a leading and a follower part for operating respectively in said spout and container, a shiftable element for the expeller element formed at its inner end with a hand grip member, a bendable bar positioned exteriorly of the container, said shiftable element and bar having their rear ends provided with hand engaging means, means for slidably connecting the outer terminal portion of said bar to the container, said spout in lengthwise section being of substantially triangular contour and formed of a material possessing a characteristic to provide for bending it at an angle to said body part and for changing its shape and the contour of its discharge outlet.

12. A calking unit comprising a calking material container formed of a body part and a distortable spout at one end of the latter, a calking material expeller element within said body part, a shifting element for said expeller element, a bendable rod arranged exteriorly of said body part, means for slidably connecting said bar to said body part, said shifting element being formed at one end with a hand abutment, and said bar being formed at an end corresponding to the said end of the expelling element with a hand grip.

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