A. L. WEISSENHANNER.
SHEET METAL STOPPER.
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SHEET-METAL STOPPER.

1,118,606.


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To all whom it may concern:

Be it known that I, ALFRED L. WEISSENTANNER, a citizen of France, and resident of Bayonne, in the county of Hudson and State of New Jersey, have invented certain new and useful Improvements in Sheet-Metal Stoppers, of which the following is a specification.

In my Letters Patent of the United States No. 801,283, dated October 10, 1905, is described a sheet-metal stopper comprising a top or crown portion having a depending circumferentially cut or weakened flange which is constructed and arranged to be forced into circumferential gripping relation with the exterior surface of a receptacle, near its mouth, by the operation of pressing the stopper down upon the receptacle.

The present invention may be described as an improvement on the said patented stopper; and, as generally stated, the invention comprehends certain novel features of construction whereby a uniform and positive gripping and sealing action of the flange and cover upon and around the contiguous portions of the receptacle is insured without circumferentially cutting or weakening the flange, as will be hereinafter particularly described and claimed.

In the drawings—Figure 1 is a plan of my improved stopper. Fig. 2 is a side elevation thereof. Fig. 3 is a transverse vertical section of the same as applied to a receptacle. Fig. 4 is a transverse horizontal section, as on the line 4–4 of Fig. 3.

The stopper comprises a body of sheet-metal struck up to form the circular top portion 1 having a circumferential depending flange 2, which is designed to encircle and grip the head of the receptacle (A) when the stopper is applied thereto. The underside of the top portion is provided with the usual gasket or packing ring 3 which bears upon the upper edge of the receptacle. The flange 2 is an imperforate body provided at intervals with in-punched teats 4 which are adapted to bear upon the exterior surface of the receptacle, adjacent the upper edge of the latter, when the stopper is first applied, so that when the stopper is bodily forced hard down upon the mouth of the receptacle the portions 5 of the flange between adjacent teats are stretched circumferentially into intimate gripping contact with the outer surface of the head of the receptacle, as indicated in Fig. 4. These teats thus constitute, in effect, tensioning posts or struts.

The flange is provided immediately below the teats with a substantially continuous rib 6 which performs the important function of a stiffening member to prevent the buckling or distortion of the lower portion of the flange when the gripping strain is exerted upon the metal between the bearing points. In the absence of the stiffening member the lower portion of the flange, when the same is devoid of circumferential slits, becomes vertically waved or distorted by the circumferential strain on the metal incident to the gripping operation, and in consequence the distortion is imparted to the periphery of the cover with impairment of the sealing efficiency of the stopper.

The cover is provided at and adjacent its circumference with a plurality of circular ribs 7. These ribs reinforce the upper edge of the flange as well as the top of the cover, and, in conjunction with the rib 6 on the flange, effectually prevent the distortion or twisting of the cover when pressure is brought to bear on the latter during the operation of forcing the stopper down upon the receptacle—that is to say, the ribs ensure the uniform level of the top irrespective of the irregular form that the body of the flange may be caused to assume by the co-action of the alternating bearing and gripping portions thereof with the surface of the receptacle. It is essential that a plurality of these reinforcing ribs be employed, as a single annular rib will not suffice to counteract the twisting strain upon the top of the stopper.

In Fig. 2 I have shown the flange of the stopper as provided with a depending stiffened tongue 8 which is adapted to be operated as a lever to effect the removal of the stopper from the receptacle, but it is to be understood that this tongue may be omitted without departure from my invention.

In the construction described in Letters Patent No. 801,283, above referred to, it was necessary to provide the flange of the cap with horizontally-extending cuts so as to permit the circumferential gripping operation of such flange upon the wall of the receptacle, without disturbing the roof of the cap, as any distortion of the roof produces spots where tightness of the seal is
absent. The present construction, however, with the stiffened top edge and with the circumferentially stiffened lower edge of the flange, permits the manufacture of the cap without horizontal cuts and yet insures a uniform and positive sealing of the receptacle to which the cap is applied as hereinbefore described.

I claim—

1. A sheet-metal stopper comprising a top and a circumferential securing flange, said flange having at extended intervals on its inner side inward projections which constitute posts or struts to tension longitudinally the portions of the flange between said projections when the stopper is applied to a receptacle, and having also a substantially continuous stiffening rib located below said projections and the portions of the flange tensioned thereby.

2. A sheet-metal stopper comprising a top having a circumferential stiffening rib and a circumferential securing flange, said flange having at extended intervals on its inner side inward projections which constitute posts or struts to tension longitudinally the portions of the flange between said projections when the stopper is applied to a receptacle, and having also a substantially continuous stiffening rib located below said projections and the portions of the flange tensioned thereby.

3. A sheet-metal stopper comprising a top and a circumferential securing flange, said flange being provided at extended intervals with in-punched teats which constitute posts or struts to tension longitudinally the portions of the flange between said teats when the stopper is applied to a receptacle, and having also a substantially continuous stiffening rib located below said projections and the portions of the flange tensioned thereby, and the said top having at and adjacent its circumference a plurality of continuous stiffening ribs.

Signed at New York, in the county and State of New York this 23d day of January A. D. 1913.

ALFRED L. WEISSENTHANNER.

Witnesses:

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