

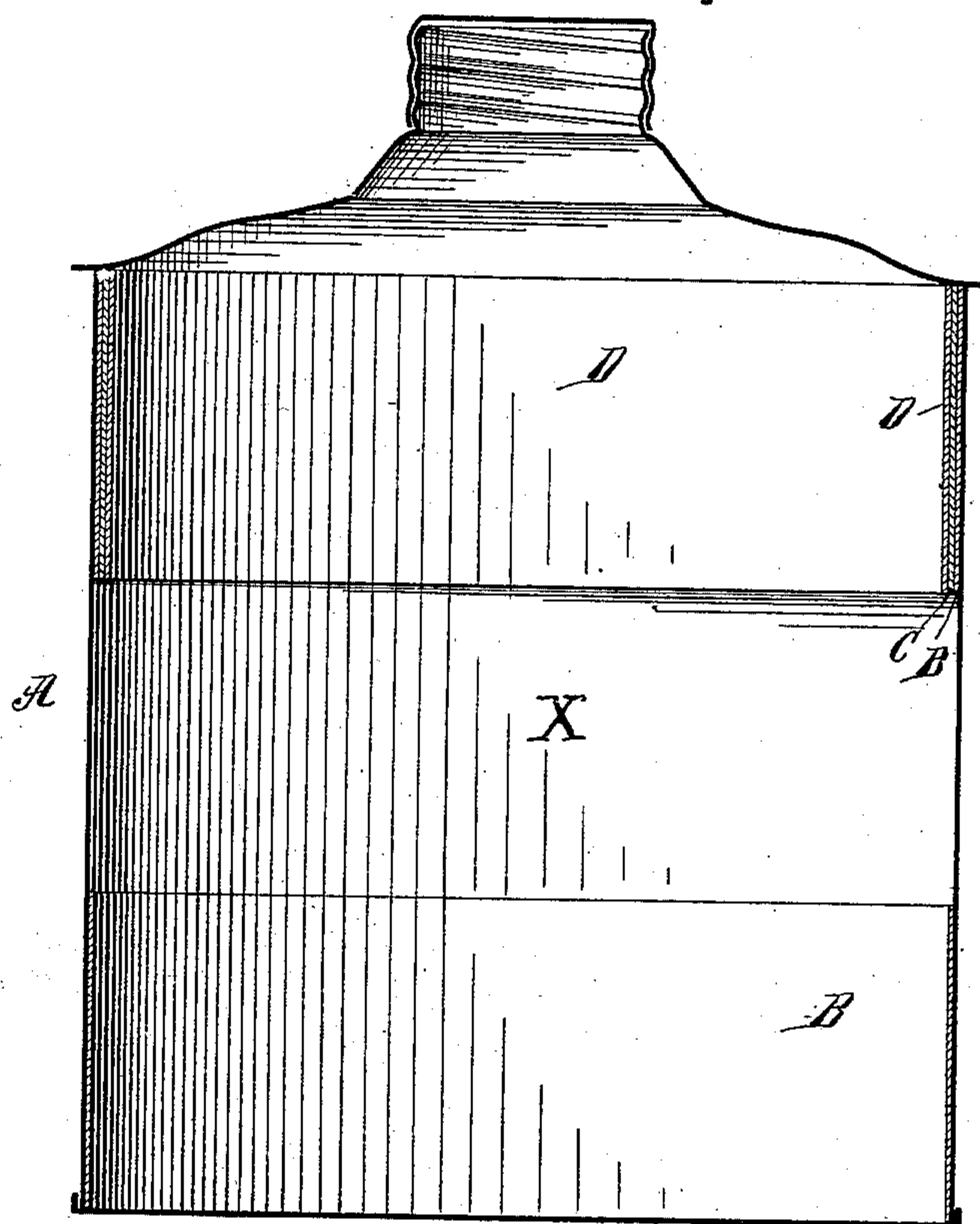
(Model.)

W. F. PEEK.

METHOD OF APPLYING IMPERVIOUS COATINGS TO METALLIC SURFACES.

No. 273,384.

Patented Mar. 6, 1883.



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UNITED STATES PATENT OFFICE.

WILLIAM F. PEEK, OF BROOKLYN, NEW YORK.

METHOD OF APPLYING IMPERVIOUS COATINGS TO METALLIC SURFACES.

SPECIFICATION forming part of Letters Patent No. 273,384, dated March 6, 1883.

Application filed May 1, 1882. (Model.)

To all whom it may concern:

Be it known that I, WILLIAM F. PEEK, residing in the city of Brooklyn and State of New York, a citizen of the United States, have
5 invented a new and useful improvement in the method of applying impervious coatings to metallic surfaces, more particularly to the inner surfaces of metallic oil-cans or packages; and I do hereby declare the following specification to be a full, clear, and accurate description of the same, reference being had to the accompanying drawing.

In the use of metallic vessels for holding or carrying oils or fluids highly charged with gas
15 or volatile in character, the gas penetrates the pores of the metal exposed to its contact, rapidly corroding or oxidizing the surfaces, impairing the strength and efficiency of the metal, frequently perforating and opening the seams
20 or joints of the vessel, causing it to leak; and attempts have been made to obviate these difficulties by applying coatings of impervious materials similar to those used for a like purpose on the interior surfaces of wooden packages, but which have hitherto failed to meet
25 the required purpose, because of the inability of making them adhere to metallic surfaces when applied in the same manner as to wooden packages; and the object of my invention is to overcome this difficulty by the employment
30 of such means and process as will make impervious substances (capable of resisting the action of carbonaceous oils, acids, and gases) permanently adhere to metallic surfaces to which they may be applied; and my invention
35 consists in the application of an acid bath to metallic surfaces as a means for making impervious substances adhere when applied to them.

In the prosecution of my invention I proceed
40 as follows: First, I thoroughly wet and saturate the metallic surfaces to be coated with a strong solution of acid, preferably muriatic acid, and while in that condition slush or cover such surfaces with a coating of glue dissolved
45 in hot water of about the consistency of cream, and allow it to thoroughly dry; and, second, apply to the metallic surfaces prepared in the manner above described one or more coatings of any compound of impervious materials (that
50 will resist the action of carbonaceous oils, gases, or acids, or alkalies) at a temperature of about 80° Fahrenheit, of any required thick-

ness, but preferably about one thirty-second part of an inch thick, and allow it to thoroughly set or dry; third, under the hereinbefore-described process any one of the several well-known impervious compounds used for coating
55 the surfaces of wooden packages may be used on metallic surfaces; but preferably I use a compound made as follows: Combine in proportions five pounds of glue with one pound of glycerine by placing them together in a vessel containing twenty pounds of water and boiling until they thoroughly unite.

In the drawing accompanying this specification, (which is simply an illustration of the model
65 furnished under this application,) the figure A represents a sectional elevation plan of a metallic oil-can, upon which X shows a belt of its inner metallic surface that has been subjected to the action of an acid bath preparatory to
70 the application of a coating of impervious material; and B represents a belt or section of surface that has been prepared in a like manner as X, and upon which, in addition, a coating of impervious materials, compounded as
75 hereinbefore described, has been applied; and D represents a surface prepared in like manner as X, and having a coating, B, of an impervious compound same as B, and, in addition, between it and the prepared metallic surface
80 a lining of muslin, C, and also a lining of paper, D. The linings of muslin and paper are sometimes desirable to cover joints or seams, in order to secure a more efficient result in
85 avoiding abrasion of the impervious coating resulting from expansion or contraction.

I am aware that liquid preparations of glue, glycerine, and other materials combined have
90 been used as impervious compounds for coating wooden packages, and that several of such compounds described in Letters Patent of the United States issued to A. D. Campbell, No. 34,051, July 7, 1862; D. H. Titus, No. 37,018,
95 November 25, 1862, and D. F. Bowker, No. 185,483, dated December 19, 1876, and No. 228,028, dated May 25, 1880, and also others, describe as a part of such compounds the use of small proportionate quantities of acids under
100 claims that broadly cover the application of such compounds to metallic vessels as well as wooden packages; but I am not aware of any one ever having described or claimed the acid bath applied to metallic surfaces as a part

of a process by which impervious compounds
of the character described can be made to per-
manently adhere. The same quantity of acid
required as a bath for wetting metallic surfaces,
5 if combined with the ingredients constituting
the compound, would entirely destroy its life or
elasticity and its efficiency. Therefore in this
respect the process radically differs, and the
distinction between the process claimed under
10 this application and those described under the
several Letters Patent referred to is that, while
under those patents small proportionate quan-
tities of acids were used as a valuable agent
in thoroughly uniting the several elements con-
15 stituting the compounds, in none of these
cases did it perform the special function of
setting or making firmly adhere the compound
when applied to a metallic surface, which spe-
cial function is the distinguishing feature of
20 the invention claimed under this application.
All of the impervious compounds referred to,

when applied to metallic surfaces by the pro-
cess described under said patents, either pro-
duce an oxidation that impairs the efficiency
of the compound, or (as when applied to tin) 25
the compound will blister, dry loose, or scale
off, instead of setting or firmly adhering, which
can only be effectively secured by aid of the
acid bath.

I therefore claim as my invention— 30

The process or method of preparing metallic
surfaces by wetting with acid and then slush-
ing or covering the same with a coating of
thin glue or other adhesive substance, so that
when dry it will form a holding-surface, the 35
object of which is to bind or make adhere any
coating of impervious compound subsequently
applied, substantially as described.

WILLIAM F. PEEK.

Witnesses:

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