

(No Model.)

T. G. F. DOLBY.

METHOD OF UNITING SOLDERABLE SURFACES WITH ALUMINUM.

No. 459,611.

Patented Sept. 15, 1891.

Fig. 1.

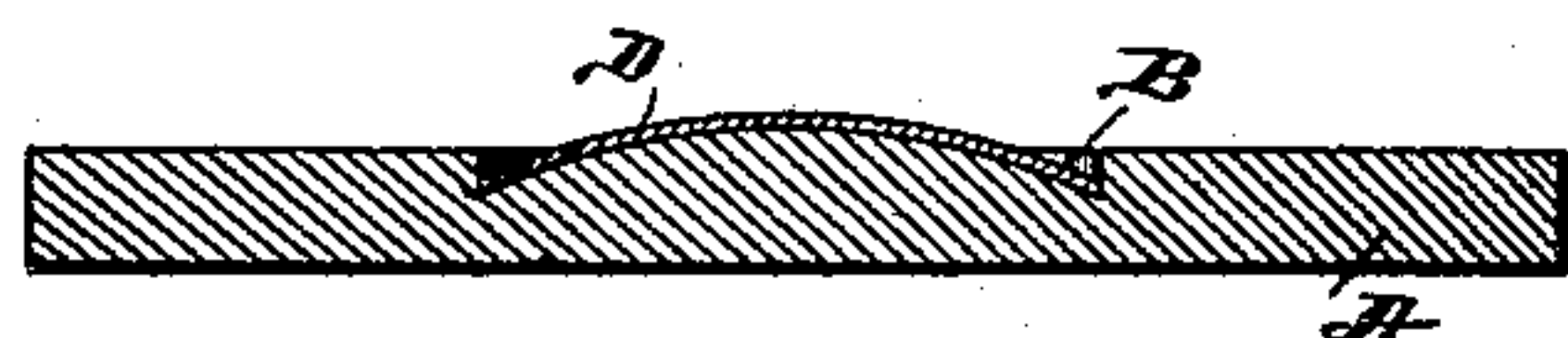


Fig. 2.

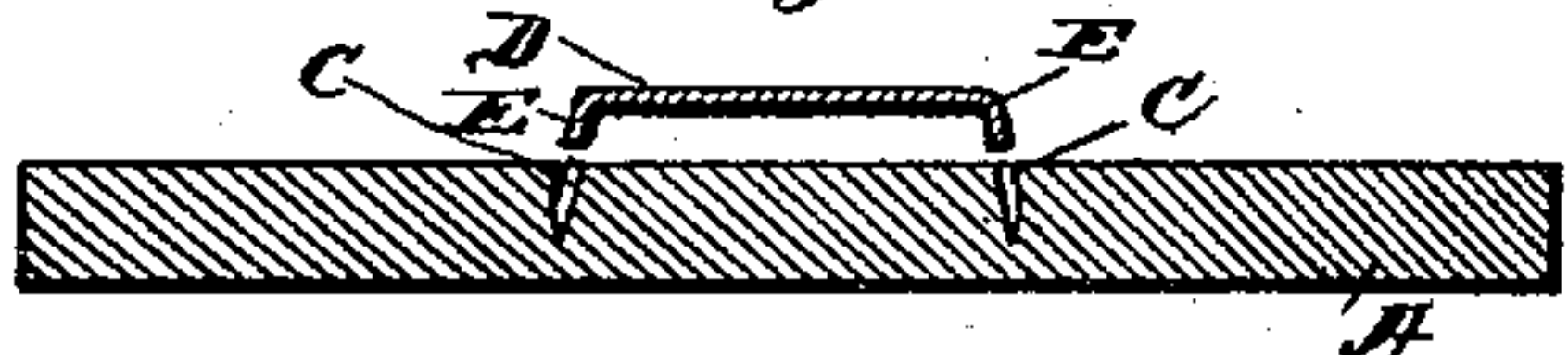


Fig. 3.



Fig. 4.

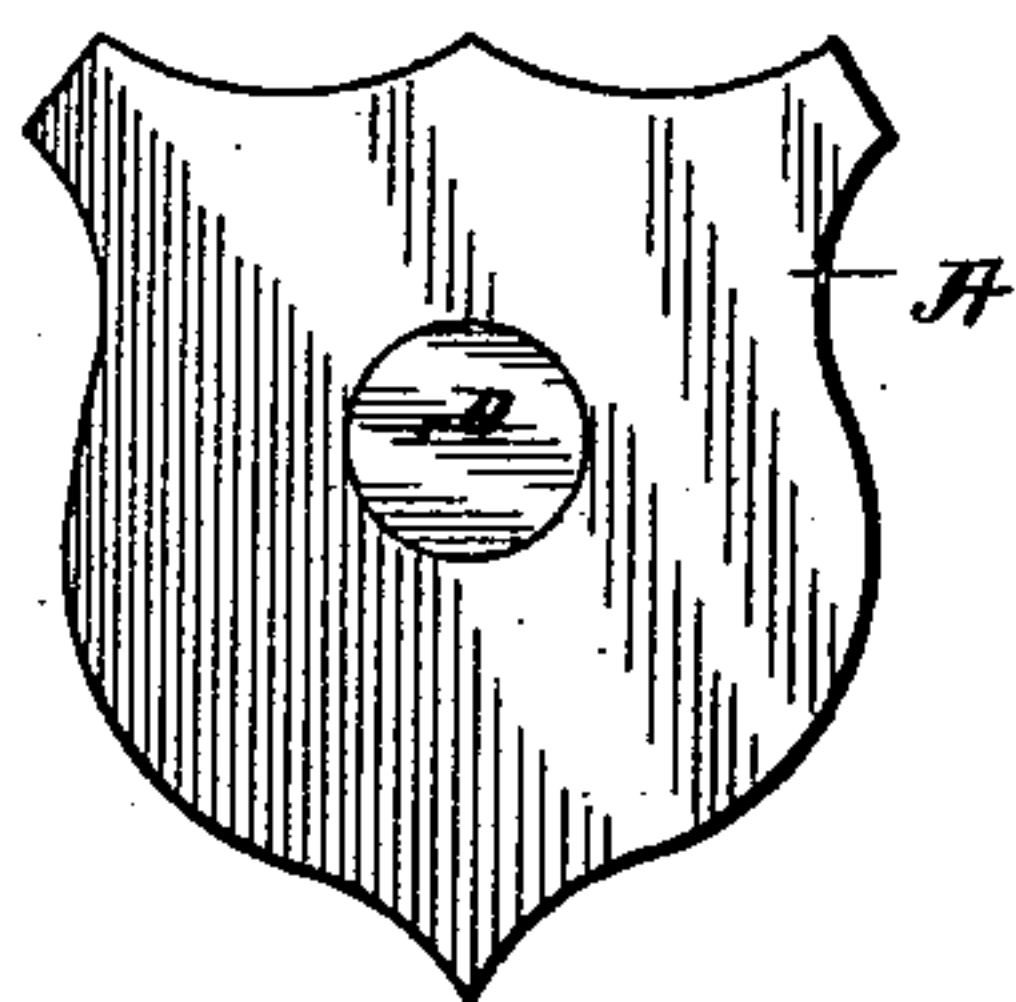
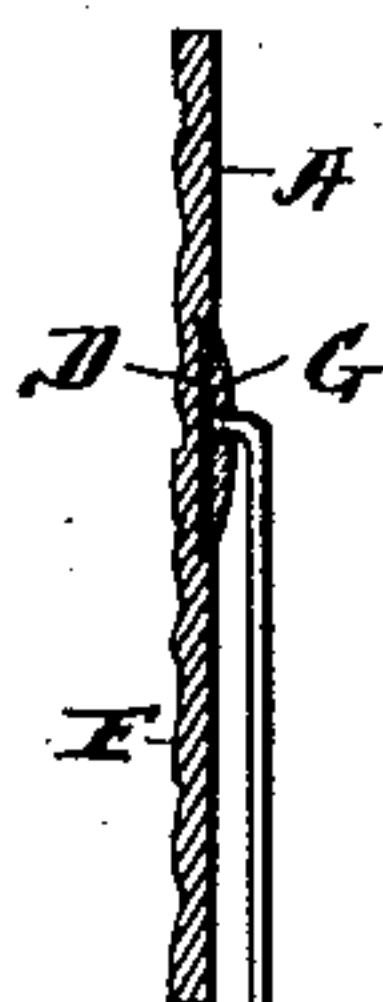


Fig. 5.



Witnesses.

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UNITED STATES PATENT OFFICE.

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METHOD OF UNITING SOLDERABLE SURFACES WITH ALUMINUM.

SPECIFICATION forming part of Letters Patent No. 459,611, dated September 15, 1891.

Application filed February 10, 1891. Serial No. 380,954. (No model.)

To all whom it may concern:

Be it known that I, THOMAS G. F. DOLBY, a subject of the Queen of Great Britain, and a resident of the city of Elgin, county of Kane, and State of Illinois, have invented certain new and useful Improvements in Methods of Uniting a Solderable Surface with Aluminum, of which the following is a specification.

This invention has for its object to provide a cheap, simple, and effective method of providing aluminum with a solderable surface for the purpose of attaching pins, joints, catches, and similar devices, so as to promote the manufacture of various articles out of aluminum. The use of this metal heretofore for the manufacture of scarf and other pins, brooches, badges, buttons, and ornaments of a similar nature has been extremely limited, and in fact almost prohibited, by the fact that aluminum is not solderable—that is to say, solder will not adhere thereto—and consequently pins, joints, and catches, such as are necessary for securing this class of articles to the person, could not be attached to such articles when made of aluminum, except by such expensive and objectionable methods as headed pins passing through the article or by upset tin backings similar to those used in the manufacture of buttons; and the same is true of other articles of wholly dissimilar character which could and would be made of aluminum if means were provided for securing thereto in a cheap and simple manner, such as by soldering, other metals forming a necessary part of such articles. The use of aluminum in the manufacture of such articles, especially brooches, badges, and like ornaments, is very desirable because of the peculiar characteristics of the metal, such as its non-corrosiveness, its susceptibility to a high degree of polish, and the facility with which the most elaborate ornamental designs may be stamped, imprinted, or otherwise formed upon the surface thereof.

My invention consists in fixing or embedding the edges of a cap or plate of solderable metal in aluminum, so as to furnish a permanent surface, to which pieces of other metal may be secured by soft-soldering at small expense; and the steps and order of steps of my method will be described in detail farther on, and fully set forth in the claims.

As an example of the application of my invention I have illustrated in the drawings the order of steps pursued in the manufacture of an ordinary pin-badge, which will serve to illustrate the steps and order of steps of my method. I first take a blank A of aluminum and indent or recess a surface thereof, as illustrated at B in Figure 1, or cut the same as illustrated at C in Fig. 2, and then set into such indentation, recess, or cut a cap or plate D of solderable metal—that is, some metal to which soft solder will adhere, such as tin-plate. Where an indentation is made, such as illustrated in Fig. 1, the cap or plate should have the same contour as the indentation or recess, so that when set therein the edges of the cap or plate will lie below the surface of the aluminum; but where the surface of the aluminum is simply cut into shape by some edged tool the plate may have any desired shape, so long as it is provided with an upturned flange or projection E, arranged to enter the cuts in the aluminum. I will say, however, that in practice I have found the first-described method more simple, economical, and effectual, and for this reason preferable. After the cap or plate is set in position, the blank and cap or plate are subjected to sufficient pressure to firmly embed the edges of the plate in the aluminum, which latter will be pressed over and around, so as to embrace the edges of the plate and firmly and permanently fix the same in position, the pressure at the same time serving to flatten the plate and embed it in the aluminum, preferably to a plane flush with the surface of the aluminum, as illustrated in Figs. 3 and 4. When this operation is completed, it will be found that all except the edges of the plate is exposed, furnishing a surface of solderable metal, to which other metals may be secured by soft-soldering. If desirable, the blank with the cap or tin laid in the recess thereof may be set in the die designed for ornamenting the opposite face of the aluminum blank, so that at the same time the pressure is applied which fixes the solderable plate to the aluminum the ornamentation will be impressed in the opposite face thereof, as illustrated by the irregular line F on the under side of Fig. 3. After the plate or cap of solderable metal is fixed in the aluminum, a pin, such as that

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shown in Fig. 5, with a solderable plate G at-
tached thereto, may be secured to the badge
by soft solder in the usual manner, or any other
form of device necessary to complete the ar-
5 ticle may be attached in a similar manner.
For instance, in the manufacture of brooches,
police and society badges, and like articles,
two or more solderable plates will have to be
fixed thereto for the attachment of the joints,
10 pins, and catches usual with such articles, or
if the aluminum be formed into an article of
an entirely dissimilar nature from these by
the employment of my process pieces of other
metals may be attached thereto by soft solder
15 in the manner before described.

Having described my invention, what I
claim, and desire to secure by Letters Patent,
is—

1. The herein-described method of uniting

a solderable surface with aluminum, the same 20
consisting in first cutting, indenting, or re-
cessing the surface of the aluminum, then
setting in said cut, indentation, or recess a
cap or plate of solderable metal, and finally
simultaneously subjecting the aluminum and 25
cap or plate to pressure, whereby the edges
of said cap or plate are embedded in and the
cap or plate is fixed in the aluminum, as and
for the purpose set forth.

2. As a new article of manufacture, an alumi- 30
num scarf-pin, brooch, badge, or other orna-
ment having a plate of solderable metal fixed
or set therein, substantially as described.

THOMAS G. F. DOLBY.

Witnesses:

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WILLIAM G. SUTFIN.