

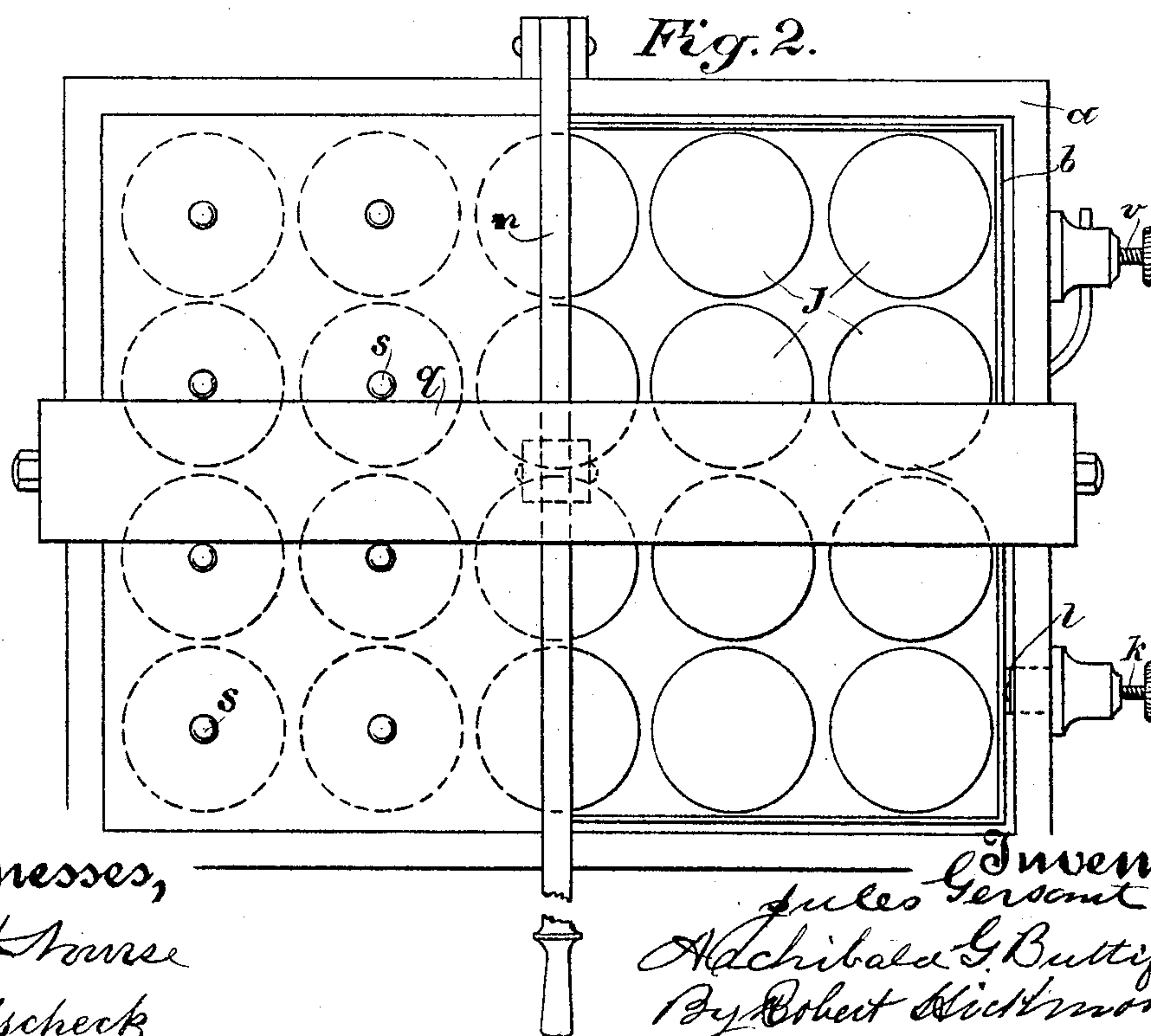
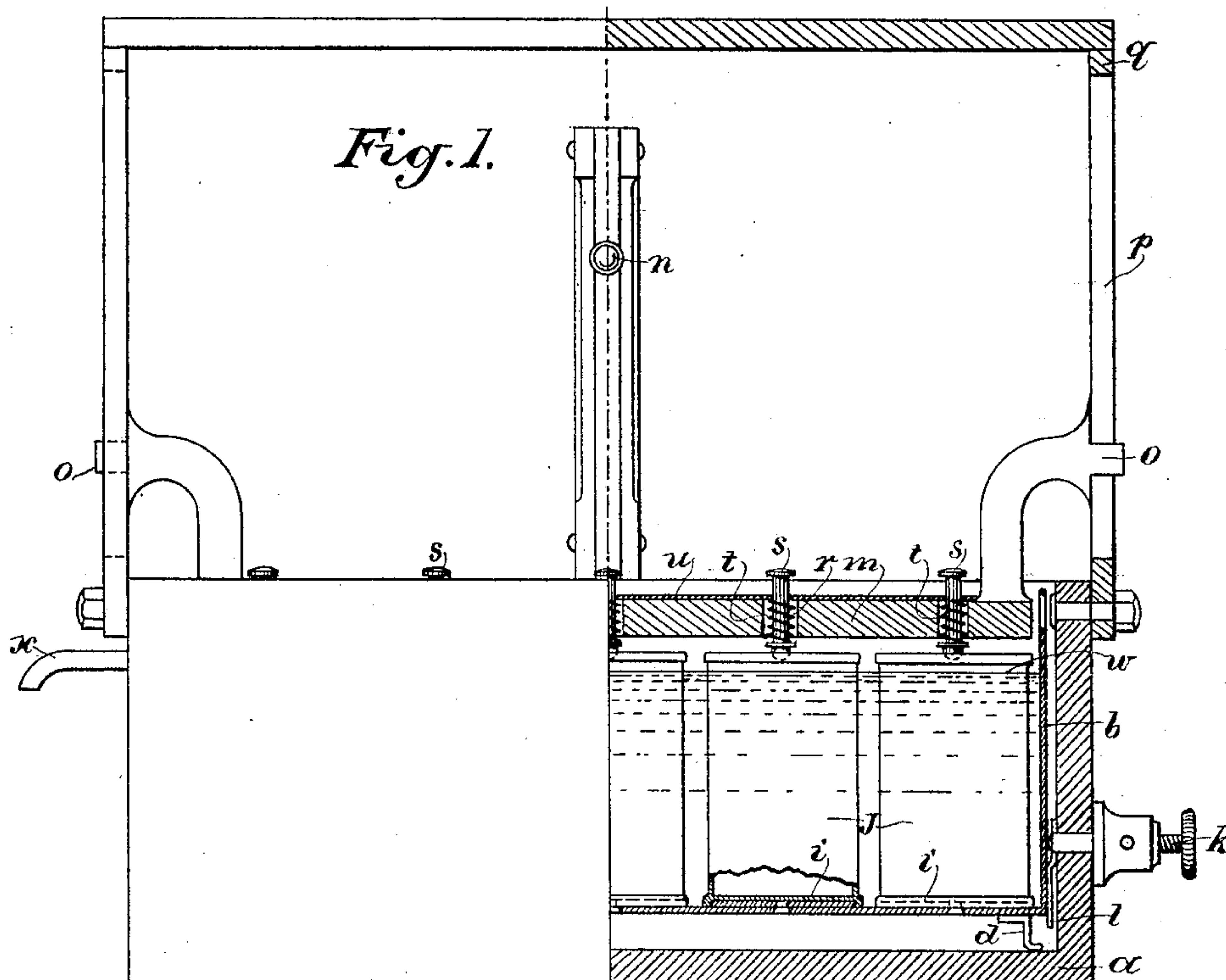
(No Model.)

J. GERSANT & A. G. BUTTIFANT.

MEANS FOR HERMETICALLY SEALING METAL BOXES, &c.

No. 605,604.

Patented June 14, 1898.



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UNITED STATES PATENT OFFICE.

JULES GERSANT, OF DEAL, AND ARCHIBALD GEORGE BUTTIFANT, OF LONDON, ENGLAND.

MEANS FOR HERMETICALLY SEALING METAL BOXES, &c.

SPECIFICATION forming part of Letters Patent No. 605,604, dated June 14, 1898.

Application filed June 29, 1896. Serial No. 597,354. (No model.)

To all whom it may concern:

Be it known that we, JULES GERSANT, residing at 71 College road, Deal, county of Kent, England, and ARCHIBALD GEORGE BUTTIFANT, residing at 8 St. Benet's Place, Gracechurch street, London, E. C., England, citizens of England, have invented an Improvement in a Means for Hermetically Sealing Metal Boxes, Canisters, Tins, or the Like; and we hereby declare the following to be a full, clear, and exact description of the same.

This invention relates to improvements in means for hermetically sealing metal boxes, tins, or cans, such as those intended for preserving alimentary substances and other articles, and in the machinery or apparatus necessary for effecting this result, and relates to such boxes, tins, or cans as are composed of iron, steel, or other plates having a coating or coatings of tin or other fusible metal or material thereupon.

The invention consists of the parts and the construction and combination of parts hereinafter described and claimed.

Referring to the accompanying drawings for a more complete explanation of our invention, Figure 1 is a part sectional front view and elevation. Fig. 2 is a half-sectional plan.

In carrying out our invention we proceed in or in about the following manner—that is to say, we provide a rectangular waterproof box or trough *a*, which can be made of vulcanite, wood, or any other suitable non-conductor of electricity, and within this we place a basket *b* similar in shape to but smaller in dimensions than the waterproof box or trough and having no lid or cover to it and resting on feet *d*. This basket can be made of any good conductor of electricity, such as copper, and should be perforated with numerous holes. We find it convenient to use a basket suitable for holding twenty boxes, tins, or cans; but this number may be increased or diminished, as may be required.

Screwed to the bottom of the interior of the basket are a number of movable copper projections or stands *i* of a suitable size for the purpose of retaining the boxes, tins, or cans *j* in position. Through the side of the outer box or trough is passed a binding-screw *k*,

which by means of a spring *l* or the like, made of copper or any other good conductor of electricity, electrically connects the basket *b* to one pole of a source of electricity of high intensity of heat.

Hinged to or sliding on the trough and guided by pins *o*, moving in slots *p* in supports *q*, is a lid or cover *m*, having in it a number of holes *r* equal to the number of boxes, tins, or cans intended to be contained in the basket, with a plunger or pin *s*, made of copper or any other good conductor of electricity, working in each hole, and each plunger or pin encircled by a spring *t* to allow it a certain margin of upward and downward movement. All these plungers or pins are electrically connected with each other by a plate *u* and also by another binding-screw *v* to the opposite pole of the source of electricity above referred to. The appointed number of boxes, tins, or cans are then placed in the basket, each on one of the copper projections or stands aforesaid, the seams or joints intended to be hermetically sealed having been first brought closely together by means of the ordinary seaming-machine or other machine of a like character, the outer edges or rims having previously been wiped with the usual flux. The lid or cover *m* of the trough is then slid over or shut down, as the case may be, by means of a handle *n*, thus bringing the plungers or pins *s* into electrical contact with the joints or seams intended to be hermetically sealed. A current of electricity is then switched onto the binding-screws, and the intense heat thus produced in contact with the seams or joints intended to be hermetically sealed melts the tin or other fusible coating on the iron, steel, or other plate of which the boxes, tins, or cans are composed, and thereby causes such seams or joints to become hermetically sealed by fusion. In effect we utilize as a substitute for solder the coating of tin or other fusible metal with which the sheet metal of the boxes, tins, or cans is covered.

When it is desired to hermetically seal boxes, tins, or cans having an aperture in the top through which it is intended that they should be subsequently filled, the joints of the tops, bottoms, and sides can be simultaneously sealed by one operation. In like

manner the joints of the bottoms and sides of boxes, tins, or cans intended to be filled before the top or lid is fixed on can be sealed simultaneously.

- 5 Where it is desired to hermetically seal the tops or lids of boxes, tins, or cans which have already been filled, we find it desirable, for the purpose of preventing injury to the contents by reason of the intense heat, to pour
10 water into the trough until it reaches to about three-sixteenths of an inch of the joints, as at *w*, a waste or overflow pipe *x* preventing it rising to a greater height. In all other respects the operation is the same with regard
15 to both empty boxes, tins, or cans and those which have already been filled.

We do not confine ourselves to the precise details, conformation, relative proportions, or disposition of parts described in the specification and exemplified in the drawings, as
20 any or all of them can be varied to suit circumstances and requirements, and although we have described and shown a practical machine, nevertheless we do not restrict ourselves to the one machine for carrying out
25 our process.

Having thus described our invention, what we claim as new, and desire to secure by Letters Patent, is—

- 30 1. In an apparatus for electrically sealing the joints or seams of metal boxes or cans, a trough or receptacle, a basket removably placed therein and composed of conducting material, and a movable cover or lid for the
35 trough or receptacle adapted to be supported

upon the box or can, and carrying a contact, said basket and cover or lid being connected with the opposite poles of an electric circuit.

2. In an apparatus for electrically sealing the joints or seams of metal boxes or cans, 40 the combination of a trough or receptacle, a metallic basket removably supported therein, having a projection or stand for retaining the box or can in position, and a movable lid or cover for the trough having a yielding pin 45 or contact to rest upon the top portion of the box or can, said pin and basket being electrically connected with the opposite poles of an electric circuit.

3. In an apparatus for electrically sealing 50 the joints or seams of metal boxes or cans, the combination, of a trough or receptacle, a metallic basket removably supported therein, having a series of movable stands or projections for retaining a series of boxes or cans 55 in position, a movable cover or lid for the trough having a series of yielding pins or contacts to rest one upon each box or can, and a metal plate on the lid or cover in contact with the pins, said plate and basket being elec- 60 trically connected with opposite poles of circuit.

In witness whereof we have hereunto set our hands in presence of two witnesses.

JULES GERSANT,

ARCHIBALD GEORGE BUTTIFANT.

Witnesses:

GABRIEL CHARLES EMMANUEL AMAND.

HERBERT VINCENT IRWIN.