

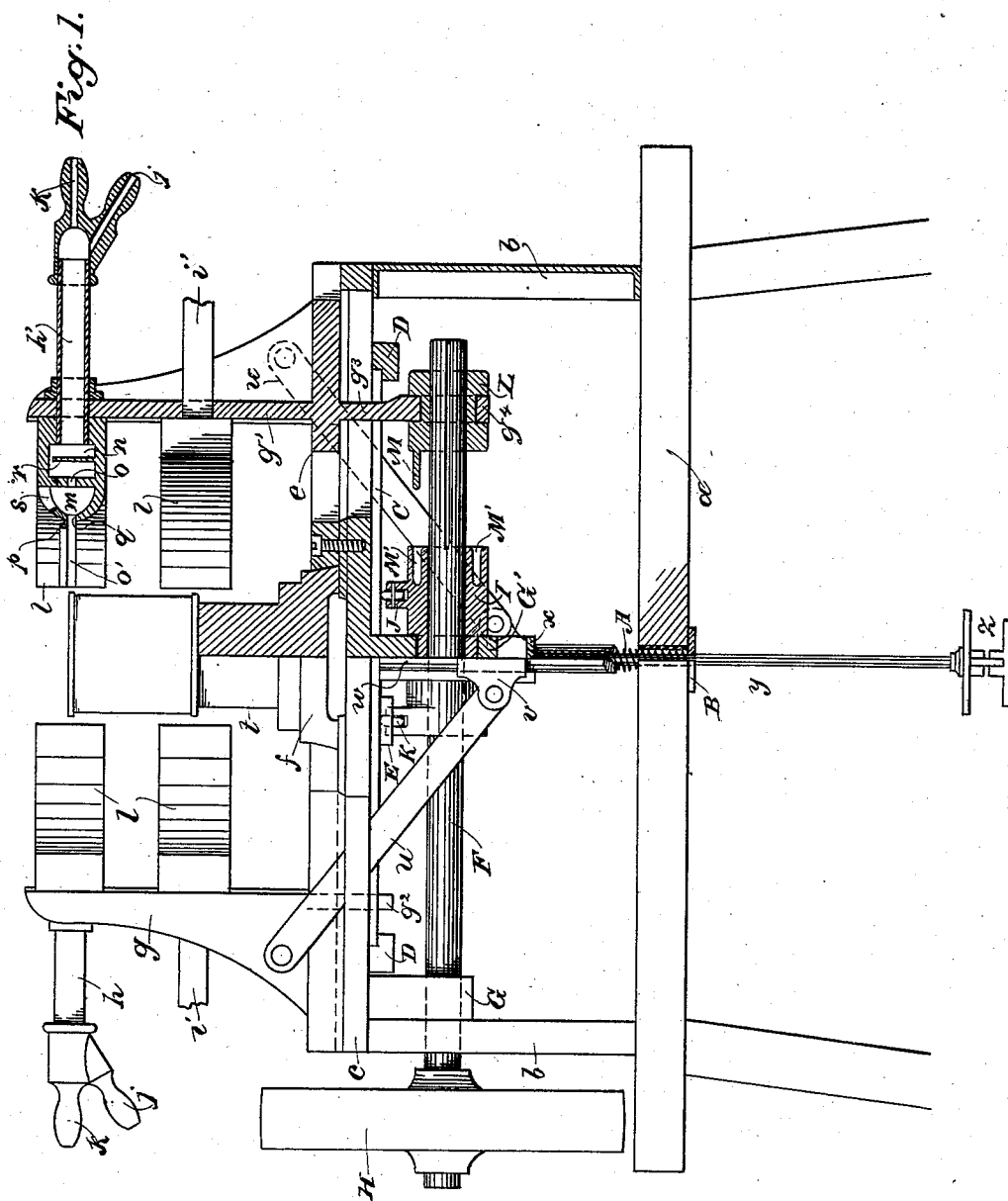
(No Model.)

2 Sheets—Sheet 1.

J. GERSANT & A. G. BUTTIFANT.
MACHINE FOR HERMETICALLY SEALING METAL BOXES.

No. 567,384.

Patented Sept. 8, 1896.



Witnesses,
J. H. Morse
H. F. Aschbeck

Inventors,
Jules Gersault
Archibald G. Buttigant
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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

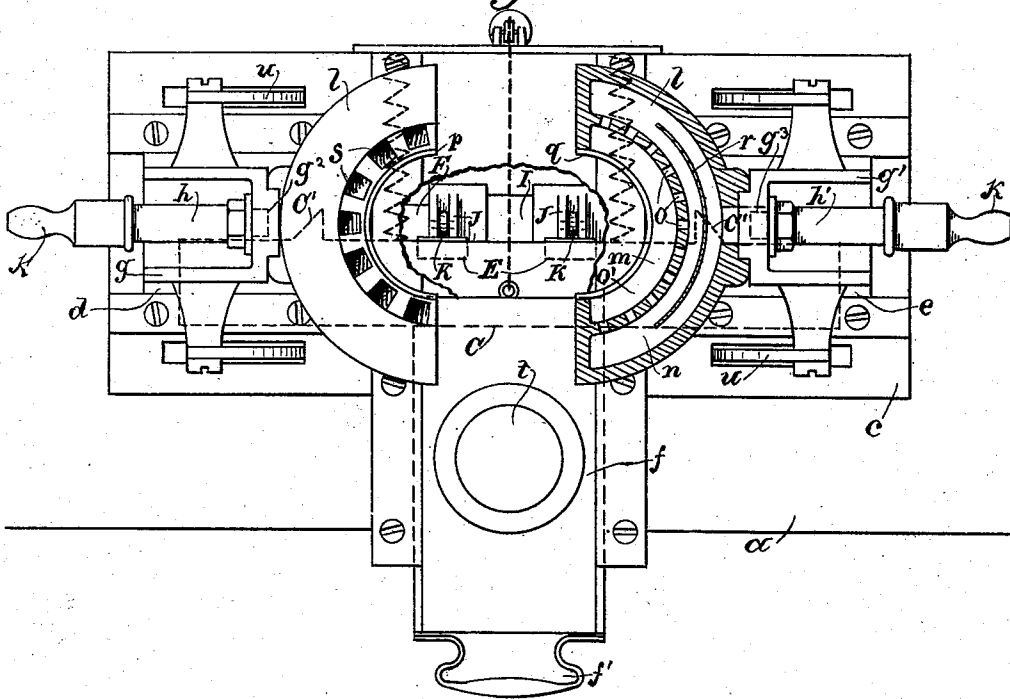
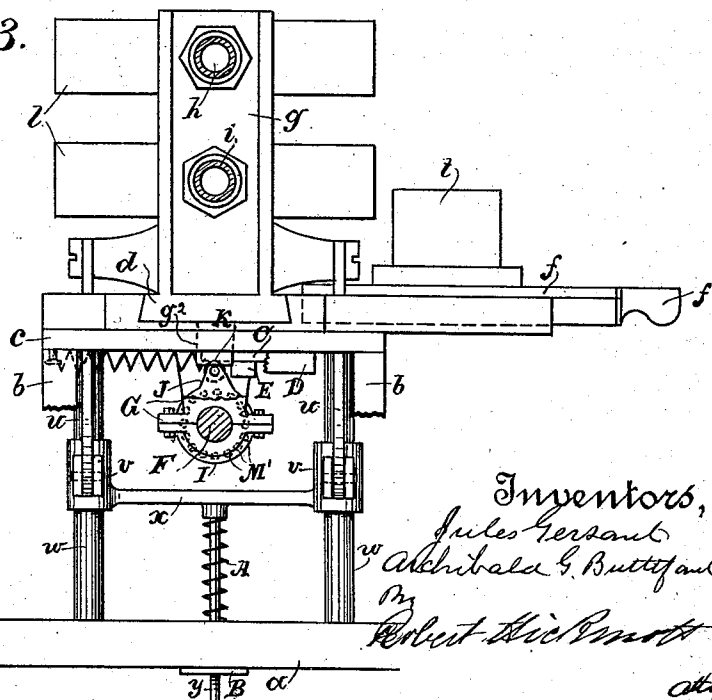


Fig. 3.



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UNITED STATES PATENT OFFICE.

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

MACHINE FOR HERMETICALLY SEALING METAL BOXES.

SPECIFICATION forming part of Letters Patent No. 567,384, dated September 8, 1896.

Application filed May 5, 1896. Serial No. 590,386. (No model.)

To all whom it may concern:

Be it known that we, JULES GERSANT, residing at 71 College Road, Deal, Kent, and ARCHIBALD GEORGE BUTTIFANT, residing at 8 St. Benet Place, Gracechurch Street, E. C., London, England, citizens of England, have invented an Improved Machine for Hermetically Sealing Metal Boxes, Canisters, Tins, and Analogous Articles; and we hereby declare the following to be a full, clear, and exact description of the same.

Our invention relates to an improved machine for the purposes set forth in the title, and the object is to perform the operation more expeditiously than has hitherto been done and without requiring the use of solder. We attain these objects by the mechanism illustrated in the accompanying drawings, in which—

Figure 1 is a half-sectional front view. Fig. 2 is a half-sectional plan of the machine. Fig. 3 is an end view.

Similar letters refer to the same parts in the several views.

To the table or other support *a* are attached the supports *b*, carrying the bed *c*. On the bed *c* are two dovetailed slides *d* and *e*, and at a right angle to them is a third dovetailed slide *f*, having a handle *f'* in front, by which it can be moved to and fro. The slides *d* and *e* carry the upright brackets *g g'*, to the upper end of which are attached the air and gas pipes *h h'*, and there may also be provided other air and gas pipes *i i'* below *h h'*. Air and gas, under suitable pressure, are supplied to the pipes *h h'* and *i i'* by means of inlets *j* and *k*, as shown in connection with the pipes *h h'* in Fig. 1.

To the ends of the pipes *h h'* and *i i'* are attached the burners *l*, of form suited to the kind of can to be operated on, which in the drawings is assumed to be a circular one. These burners comprise two concentric chambers *m* and *n*, communicating with one another by the holes *o*, the inner chamber *m* having a slit *o'* around its inner periphery, through which the flame is directed upon the joint to be sealed.

One of the lips *p* of the burners *l* projects beyond the other one. The projecting lip is intended to overlap the end of the can and

the other part to be in contact with the side of it. In order to distribute and equalize the delivery of the mixture of air and gas to the holes, we provide in *n* a baffle rib or plate *r*, extending from the bottom of *n* to nearly the top of it. Above the chamber *m* may be openings *s*, for convenience in igniting the gas and for carrying off the products of combustion.

The slide *f* carries the projecting support *t*, for holding the can in position, and the situation of *t* is such that when the slide *f* is pushed back to touch the rear part of the bed *c* the center of *t* will be in a vertical plane passing through the axes of the tubes *h h'* and *i i'*. The slide *f* is kept in its normal position (shown in the plan) by a weighted cord.

To the front and back of the brackets *g g'* are attached the arms *u*, whose other ends are attached to the blocks *v*, (one being in front and one behind,) running in the vertical guides *w*. The blocks *v* are connected together across the width of the machine by a cross-bar *x*, to the center of which is attached one end of the rod *y*, the other end of it being attached to the treadle *z*. A spiral spring *A* encircles the upper part of the rod *y*, the lower end of the spring pressing on the plate or step *B* and the upper part pressing upward against the cross-bar. When no pressure is put on the treadle, the upward tendency of the spring will force the arms *u* apart at their upper ends and keep the upright brackets in their normal position at the outer ends of the slides *d* and *e*. Underneath the bed *c* is a plate *C*, sliding in guides *D*. On the edge of this plate and in advance of each of the upright brackets *g g'* is a triangular projection *C'*, the side which is nearest the center of the bed being at a right angle to the front of the bed. To this plate are also attached the downward-tending projections *E* in front of the cams or wipers, to be presently mentioned. This plate *C* is kept in its normal position by a spring at each end fastened to the plate and also to the back of the bed. Below the bed *C* is also a shaft *F*, supported in hangers *G* and *G'*, and another hanger may, if required, be provided at the opposite end to *G*. To this shaft is attached the driving-

pulley H, making about one revolution in eight seconds, or thereabout. Loose on the shaft is also the cylindrical sleeve I, having attached to it wipers or cam-like projections J, furnished with rollers K. On F is also the clutch L, having the pin M, and prevented from rotating around on the shaft, but not from sliding along, by a feather on the shaft. The pin M is at such a distance from the center of the shaft F as will permit of its being inserted in one of a ring of holes M', provided around the end of the sleeve I. At each end of the bed *c* are openings through which are the extended ends g^2 g^3 of the brackets *g* and g' . The end of g^3 is formed into the ring g^4 , within which the clutch L can revolve.

The action of the machine is as follows: Assuming the pulley to be rotated and the gas and air turned on, a can with its top and bottom properly seamed is placed on the support *t* and the slide *f* drawn in by the weight until it strikes a stop-plate 20 on the edge of the frame. The operator then depresses the treadle *z* with his foot. This draws down the cross-bar *x* and block *v* and causes the upper ends of the arms *u* to approach one another, and with them the brackets *g* and g' . The burners *l* will at the same time be brought into contact with the can. As the brackets *g* and g' approach one another their lower prolonged ends will pass over the triangular projections on the plate C, thus momentarily forcing the plate C to the front of the machine. After the brackets have passed the projections the plate C will be returned to its original position by the springs attached to it and the perpendicular side of the triangular projections will lock the brackets in position. At the same time the pin M of the clutch L will enter a hole in the end of sleeve, which will thereupon revolve with the shaft F. As the cams or wipers J come round at intervals of eight seconds, they will strike against the downward-hanging projections E on the plate C and push it forward. This will unlock the brackets *g* and g' , and the spring A will cause them to return to their normal position at the ends of the bed and release the clutch L. When a can is finished, the operator takes hold of the handle of the slide *f* and pulls the slide toward him against the action of the weight, and holds it in this position until the finished can is taken off and a new one put on. He then releases the slide, which is drawn back against the stop 20 by the weight. This insures a steady position of the can while it is being soldered.

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

1. An apparatus for hermetically sealing metal containing vessels, consisting of a horizontally-slidable carrier for the vessel, slides movable transversely to the line of travel of the carrier, burners carried by the slides, and adapted to surround and inclose the seam to

be sealed, concentric air and gas chambers, pipes by which the air and gas are supplied to the chambers, distributing baffle-plates fixed in the exterior chambers, and slits in the inner periphery of the inner chambers whereby the flame is brought into direct and continuous contact with the seam.

2. In an apparatus for hermetically sealing metal containing vessels, a horizontally-slidable carrier for the vessel transversely-movable slides with air and gas mixing devices and burners by which the flame is concentrated upon the seam to be united, arms connected with the slides and a treadle connection by which they are caused to approach to inclose the vessel to be sealed, and a spring by which they are returned when released.

3. In an apparatus for hermetically sealing metal containing vessels, a horizontally-slidable carrier for the vessel, transversely-movable slides with air and gas mixing devices, and burners by which the flame is concentrated upon the seam to be united, a mechanism by which the slides and burners are advanced and retracted, a horizontal shaft journaled beneath the table, collars slidable upon feathers upon the shaft, arms projecting downward from the slides with rings engaging the collars to move them along the shaft when the slides are moved, pins projecting from the ends of the collars and adapted to engage holes in the adjacent ends of cam-carrying sleeves mounted loosely upon the shaft, spring-actuated locking-plates which engage and retain the slides when they have been advanced, said plates being released by the cams on the sleeves when the latter are engaged and rotated.

4. In an apparatus for hermetically sealing metal containing vessels, a horizontally-slidable carrier upon which the vessel is mounted, transversely-movable slides closable against the vessel, with air and gas mixing devices and burners to direct the flame upon the seams to be united, lugs extending from the slides and slidable spring-actuated plates with hanging projections which engage and lock the slides when the burners have been advanced into position to act upon the seam, a shaft rotating beneath the table, sleeves turning loosely upon the shaft having cams adapted to disengage the hanging projections of the plates and release the burner-carrying slides, collars slidable upon feathers upon the shaft, clutch-arms extending downward from the slides and engaging the collars which are movable in unison with the slides, and pins projecting from the collars so as to engage holes in the sleeves and turn them.

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

JULES GERSANT.

ARCHIBALD GEORGE BUTTIFANT.

Witnesses:

E. R. SHORT,

J. G. WYLIE.