(No Model.) 2 Sheets—Sheet 1.

E. W. BLISS.

SOLDERING MACHINE.

No. 307,085. Patented Oct. 28, 1884.

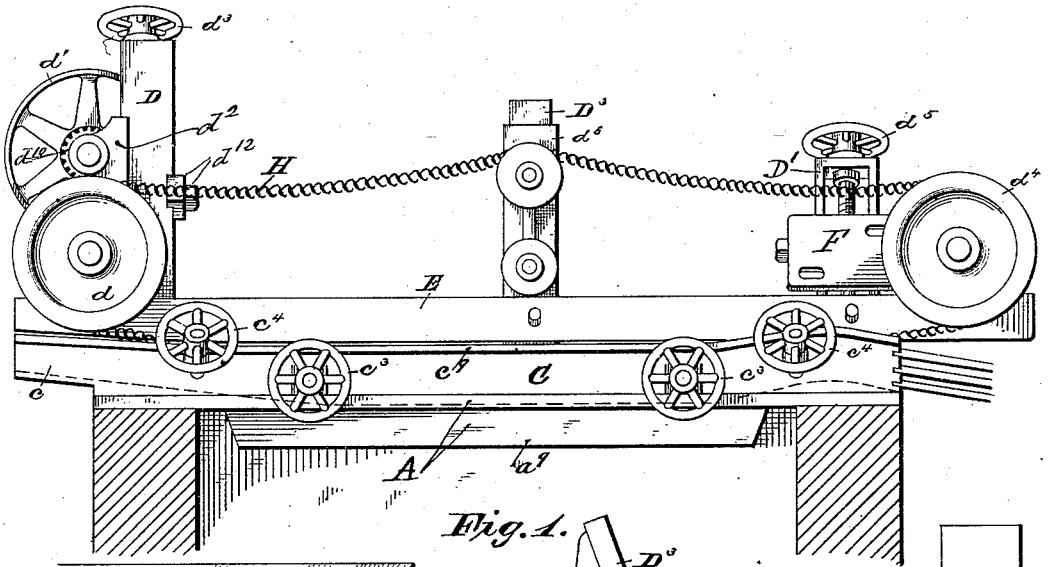

Fig. 1.

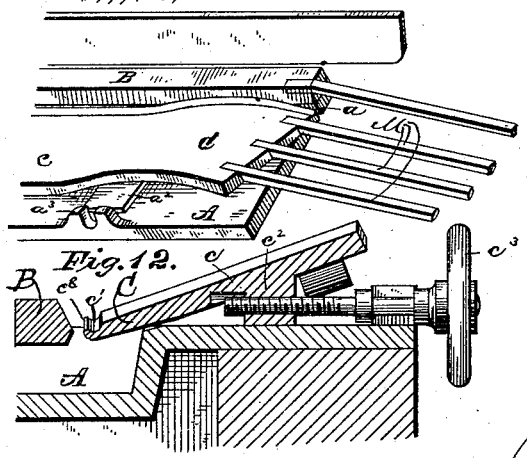

Fig. 12.

Fig. 7.

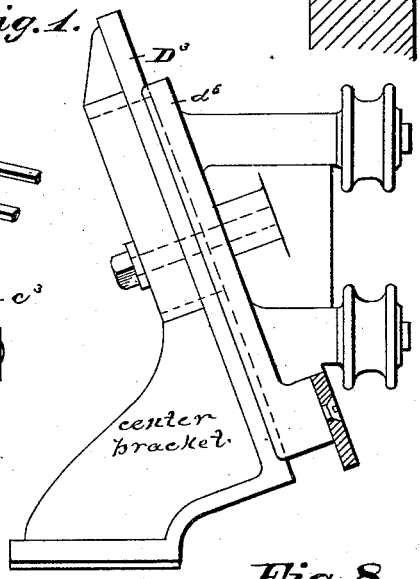

Fig. 8.

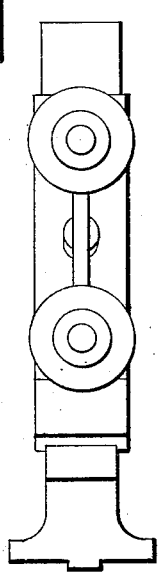

Fig. 9.

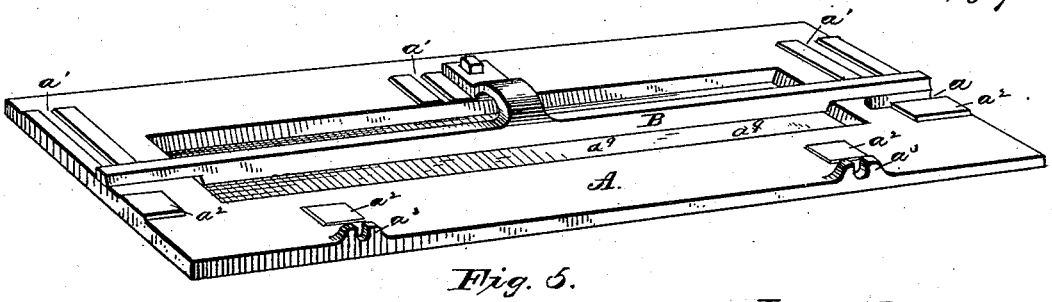

Fig. 6.

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(No Model.) 2 Sheets—Sheet 2.

E. W. BLISS.

SOLDERING MACHINE.

No. 307,085. Patented Oct. 28, 1884.

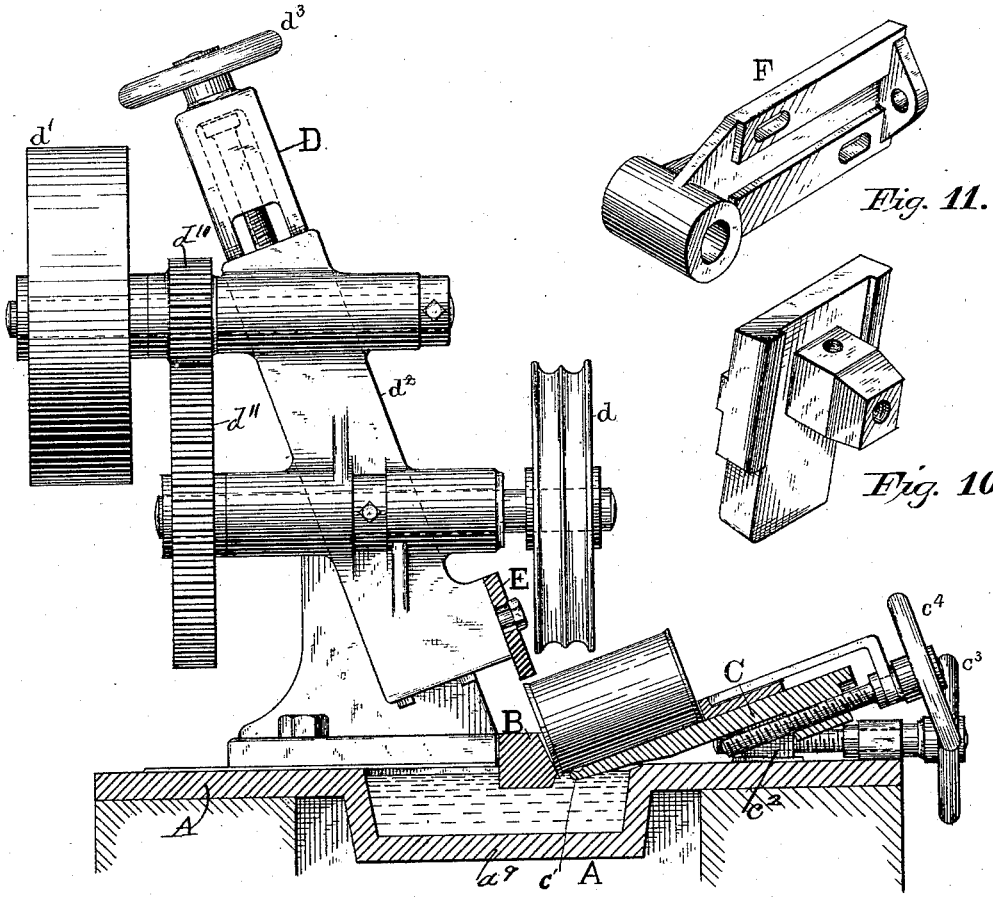

Fig. 2.

Fig. 11.

Fig. 10.

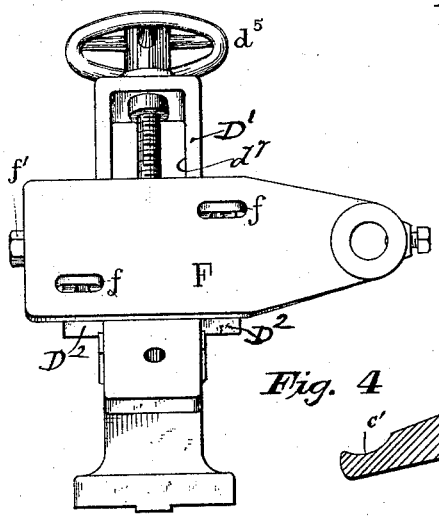

Fig. 4

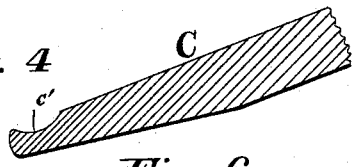

Fig. 6.

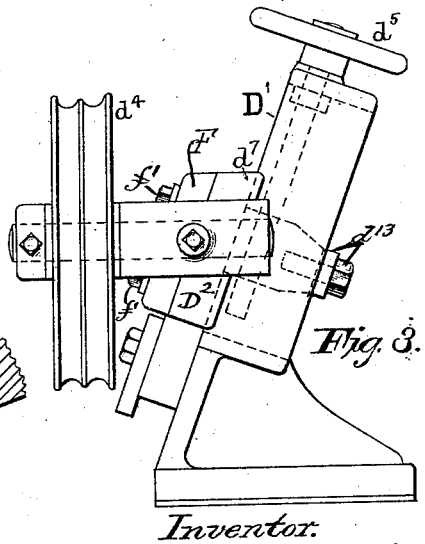

Fig. 3.

Attests:
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Inventor:
Elisha W. Bliss

UNITED STATES PATENT OFFICE.

ELIPHALET W. BLISS, OF BROOKLYN, NEW YORK.

SOLDERING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 307,085, dated October 28, 1884.

Application filed February 13, 1884. (No model.)

To all whom it may concern:

Be it known that I, ELIPHALET W. BLISS, of the city of Brooklyn, in the county of Kings and State of New York, have invented a new and Improved Soldering-Machine; and I do hereby declare the following to be a full and clear description of the same, reference being had to the accompanying drawings, and to the letters and figures marked thereon.

Figure 1, Sheet 1, represents a front elevation of my improved machine. Fig. 2, Sheet 2, represents a cross-section of the same. Fig. 3, Sheet 2, represents a side elevation of the bracket, wheel, and adjustable mechanism connected therewith. Fig. 4, Sheet 2, represents a front elevation of the bracket and the vertically and laterally adjustable sheave-arm. Fig. 5, Sheet 1, represents a top view of the slotted solder-bed, track-bar, and connecting mechanism. Fig. 6, Sheet 2, represents a part of a cross-section of the adjustable incline. Fig. 7, Sheet 1, represents a cross-section of the track-bar, solder-bed, and adjustable incline, the wedge-shaped support and adjusting-screws and hand-wheels attached for horizontally adjusting the incline to regulate the dip of the can in the solder. Fig. 8, Sheet 1, represents a side elevation of the center bracket for supporting the idlers. Fig. 9, Sheet 1, represents a front elevation of the same bracket. Fig. 10 is a perspective view of an adjustable slide. Fig. 11 represents a perspective view of the vertically and laterally adjustable sheave-arm. Fig. 12, Sheet 1, represents a section of a cooling and discharge chute and other mechanism, hereinafter more fully explained and claimed.

My invention consists in a soldering-machine for seaming the ends of circular cans, and embracing the mechanism hereinafter more fully described and claimed.

Similar letters of reference refer to corresponding parts in all the drawings.

Having described my invention by reference to the figures illustrated in the accompanying drawings, I will now proceed to describe it by reference to the letters marked thereon, in which—

A is a solder-bed with a depression, a^9, in the longitudinal center for receiving and suitably heating the solder.

a represents a slot in the discharge end of the solder-bed to prevent an accumulation of solder on the same.

a' represents a projecting surface on the solder-bed, into which the brackets are fitted.

a^2 are projecting surfaces on the bed on which the wedge-shaped supports and incline rest.

a^3 represents projecting legs on the bed for receiving the adjusting-screws.

B represents a stationary track-bar against which the ends of the cans roll when being soldered.

C represents a horizontally-adjustable incline way on which the cans rolls when being soldered, with a depression, c^9, in its longitudinal center. The end of the incline onto which the cans are rolled inclines downward toward the longitudinal center, and the other end rises slightly toward the discharge end.

c' represents a longitudinal groove, about two inches in width, on the lower portion of the upper surface of the incline way. On the extreme lower portion of the upper surface of the incline is a sharp upwardly-projecting surface, c^8, running longitudinally, which is brought by the adjustment of the incline into close contact with the seam of the can when being soldered. This upward-projecting surface is adjusted slightly above the line of molten solder. The longitudinal groove on the surface of the incline prevents the solder from working up the incline. The horizontal adjustment of the incline way is secured by two or more wedge-shaped supports between the incline and the bed.

c^2 represents the wedge-shaped supports. These supports are operated by means of screws and wheel c^5 and c^6, which move the wedge-shaped supports horizontally, thereby securing a horizontal adjustment of the incline to regulate the dip of the can in the molten solder.

c^4 represents the screws and wheels for adjusting the guide on the surface of the incline.

D represents an incline bracket for supporting a belt-carrying sheave.

d represents a belt-carrying sheave journaled on the slide d^2, moving in ways in the bracket D.

d' represents a driving-pulley with a pinion-wheel, d^{10}, attached to the projecting shaft. The shaft is journaled in an adjustable slide,

d^2. The pinion-wheel meshes into a cog gear-wheel, d^{11}, on a shaft journaled in the slide d^2. Upon the opposite end of the shaft, and rigidly attached thereto, is a belt-carrying sheave, d.

d^2 is an adjustable slide which carries the pulley, pinion, gear, and sheave. This slide fits and moves in ways in bracket D, and is held to the same by clamp and bolt d^{12}, shown in Fig. 1.

d^3 represents a wheel and screw for vertically adjusting slide d^2, by means of which a vertical adjustment is secured to the belt-carrying sheave and slide.

D′ is an inclined bracket for supporting the arm which carries the sheave at the discharge end of the machine.

d^4 represents a belt-carrying sheave journaled on the arm.

d^5 is a screw and hand-wheel for vertically adjusting the slide D^2, which carries the extension-arm, and to which the same is held by bolt.

D^2, Fig. 10, represents a slide moving in ways in bracket D′, Fig. 3. This slide is held in place on the bracket by clamp and bolt d^{13}. (Shown in Fig. 3.)

d^7 represents the ways in the bracket in which the slide D^2 moves.

F represents a vertically and laterally adjustable extension-arm for carrying belt-supporting sheave d^4. A lateral adjustment of this arm is secured by slots f and screws f'. The adjustable arm is provided to extend the sheave over the discharge end of the machine, to secure a continuous roll of the can, and the lateral adjustment is provided to secure the required tension for the friction-belt.

D^3 represents a center incline bracket for supporting a slide, d^6, carrying two idlers.

d^6 represents an adjustable slide moving in ways in the bracket, held in place by clamp and bolt for carrying two idlers.

E represents an adjustable belt-guide attached to and vertically adjustable with slides d^2 and D^2.

H represents an endless jointed friction-belt moving on the sheaves.

M represents a cooling discharge-chute connected to and adjustable with the incline for receiving, cooling, and discharging cans when soldered.

Operation: The solder-bed is suitably supported with proper means for heating the solder to the required condition to be applied to the seam. The belt-carrying sheaves are adjusted to bring the belt to the required tension to strike the periphery of the can, thereby imparting a rolling motion to the same. The incline way is adjusted to the required position. The can is then placed by the operator on the incline, and is rolled by its own gravity under the moving belt, which propels it along the incline, with the end seams dipped in the solder. The upwardly-projecting surface at the lower edge of the incline is brought by the adjustment into contact with the edge of the seam being soldered, thereby drawing the solder by capillary attraction in contact with the seam to be soldered, furnishing a complete soldering-iron. The extension-arm carrying one of the sheaves continues the roll of the can to the discharge-chute, where the can is rolled by its own gravity a sufficient distance to secure the cooling of the seam. The can is again put through the same operation to solder the opposite end.

What I claim as new, and desire to secure, is as follows:

1. The herein-described soldering-machine, having a slotted solder-bed with a longitudinal depression for retaining and heating the solder, a stationary track-bar against which the end of the can moves, a horizontally-adjustable incline way on which the cans move, with suitable means for horizontal adjustment of the same to regulate the dip of the can in the solder, two or more stationary incline brackets for supporting the belt-carrying sheaves, two or more vertically-adjustable sheaves, and one or more belt-propelling sheaves to move the belt, a laterally-adjustable arm carrying the sheave at the discharge end of the machine for regulating the tension of the belt and to discharge the soldered can from the machine, an adjustable carrying-chute attached to and adjustable with the incline, an endless friction-belt moving on the sheaves to rotate the cans, combined and arranged as described, for the purpose stated.

2. In a soldering-machine, the combination of the incline way with suitable means for horizontally adjusting the same.

3. In a soldering-machine, the combination of the incline way with the depression in the longitudinal center, with suitable means for horizontally adjusting the same, as described, for regulating the dip of the can in the solder.

4. In a soldering-machine, the combination of two or more incline brackets for supporting the belt-carrying sheaves, two or more vertically-adjustable belt-carrying sheaves, with suitable means for adjusting the same, an endless jointed friction-belt for rotating the cans, an incline track or way on which the cans move, a track-bar against which the cans roll, and a solder-bed under the incline, and track-bar for holding and heating the solder.

5. In a soldering-machine, the combination of a solder-bed, a track-bar, an incline way on which the cans roll, two or more sheave-supporting brackets, two or more belt-carrying sheaves, an adjustable sheave on an extension-arm on the discharge end of the machine for laterally adjusting the belt and delivering the cans at the discharge end of the machine in a continuous roll, as described.

ELIPHALET W. BLISS.

Witnesses:
EDWIN H. RISLEY,
H. A. PORTER.