(No Model.) 2 Sheets—Sheet 1.

J. G. JONES.

SIDE SEAM GAGE FOR CANS.

No. 247,992. Patented Oct. 4, 1881.

Fig. 1.

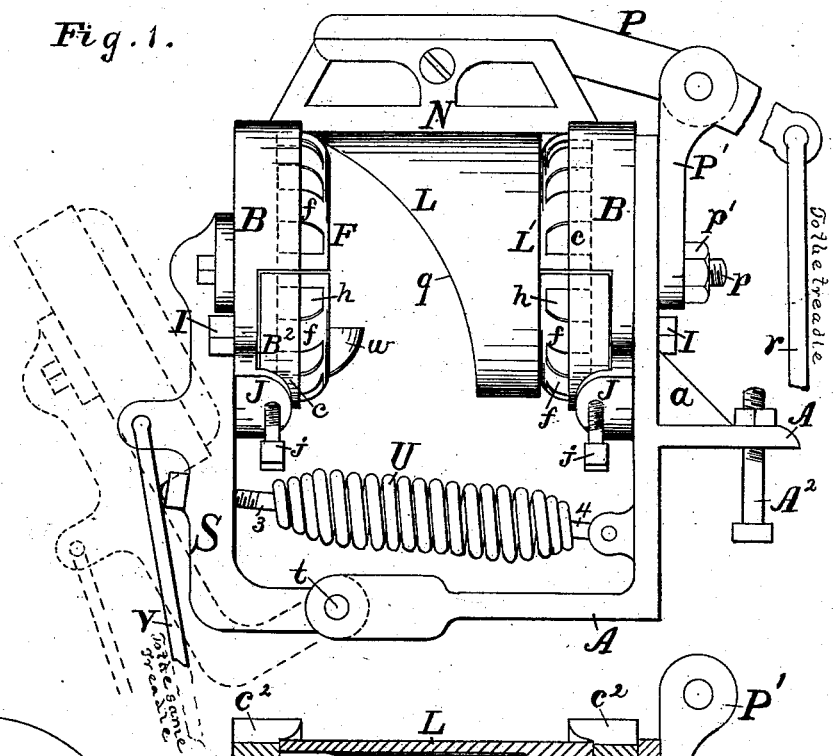
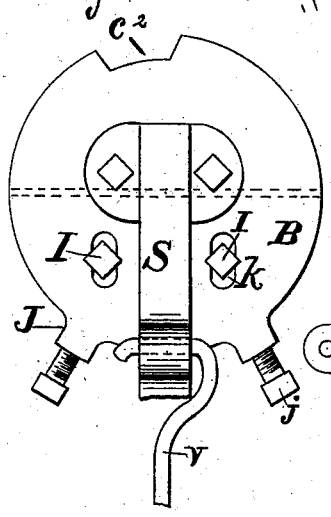


Fig. 3.



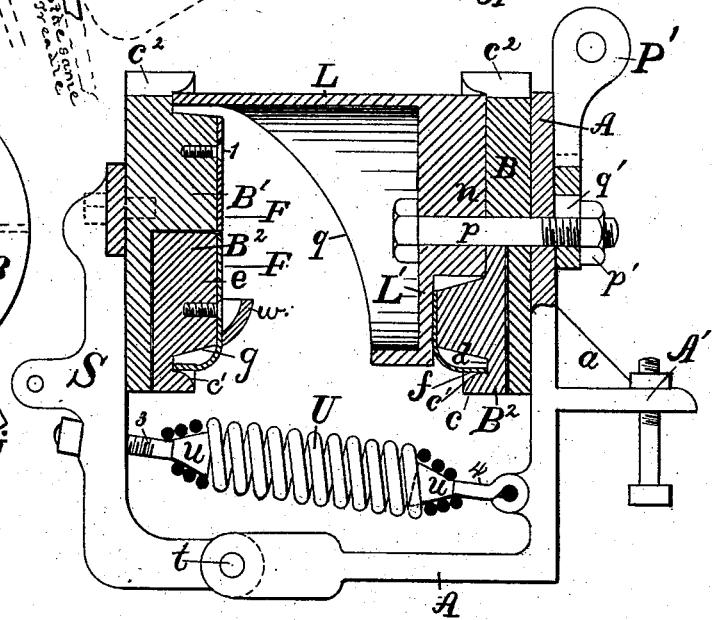


Fig. 2.

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Inventor:
Jacob G. Jones
By his Atty
Chas B. Mann

(No Model.) 2 Sheets—Sheet 2.

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Fig. 4.

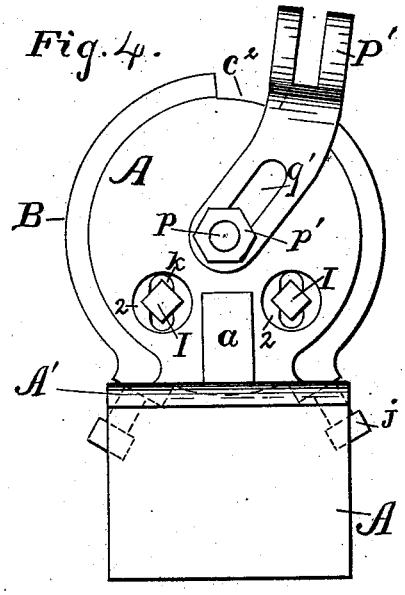


Fig. 5.

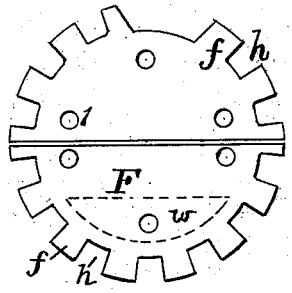
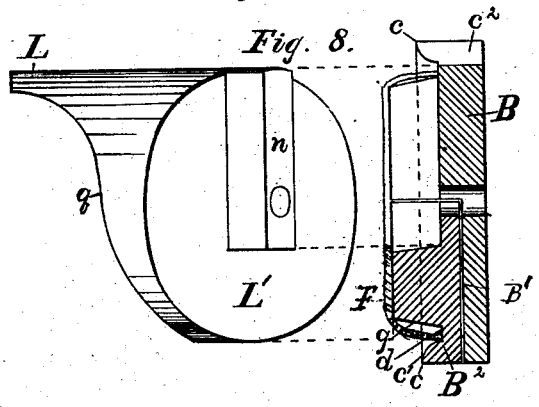


Fig. 8.



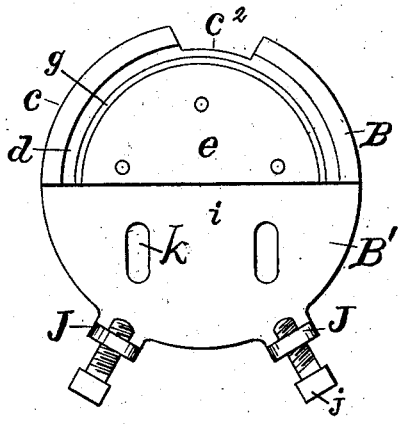


Fig. 6.

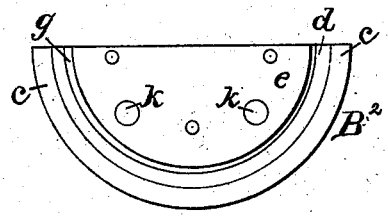


Fig. 7.

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UNITED STATES PATENT OFFICE.

JACOB G. JONES, OF BALTIMORE, MARYLAND, ASSIGNOR OF ONE-HALF TO HORACE K. THURBER, OF NEW YORK, N. Y.

SIDE-SEAM GAGE FOR CANS.

SPECIFICATION forming part of Letters Patent No. 247,992, dated October 4, 1881.

Application filed June 9, 1881. (No mod.)

To all whom it may concern:

Be it known that I, JACOB G. JONES, a citizen of the United States of America, residing at Baltimore, in the county of Baltimore and State of Maryland, have invented certain new and useful Improvements in Side-Seam Gages for Cans; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

My invention has for its object to provide a device for gaging can-bodies on the outside to a uniform size preparatory to soldering the side seam, the said gaging device being arranged and combined with a cylindrical block and clamping-knife, similar to that heretofore commonly used.

By this invention I seek to accomplish the object by clamping the unsoldered can-body at each end, and thus to hold it while the side seam is being soldered—a thing which has heretofore been found impracticable, by reason of the accumulation of rosin and dust in the unyielding groove, of wedge or V shape in section, wherein the end of the can-body is clamped. As will hereinafter appear, I employ no such groove.

The improvement will first be described and its operation explained, and the invention will then be designated in the claims.

In the drawings hereto annexed, Figure 1 is a side view of the apparatus. Fig. 2 is a vertical longitudinal section of the same on the line indicated in Fig. 4. Fig. 3 is an outside or rear view of the movable gaging-clamp. Fig. 4 is an outside view of the stationary end of the apparatus. Fig. 5 is a front or face view of the spring which presses the end of the can-body on the inner side. Fig. 6 is a front or face view of one half of the two-part gaging-clamp. Fig. 7 is a view of the other half of the two-part clamp. Fig. 8 shows the stationary head in section and the end of the cylindrical block in perspective, the two parts being in such position as to indicate how they are put together.

The letter A designates the frame of the stationary part of the apparatus, and to which a horizontal flange, A', is permanently fixed, its purpose being to rest upon a table, to which it may be secured by a bolt, A^2. A brace or stay, *a*, strengthens the connection of the frame and flange.

The gaging-clamp, as a whole, consists of a circular head, B, having a flange, *c*, to gage a can-body on the outside. The particular shape of this flange is immaterial; but, to facilitate the entrance within it of the end of the can-body, the edge of the inner side of the flange may be rounded, as at *c'*. At that part of the head adjoining the inner side of the flange is a flat surface, *d*, which is at a right angle with respect to the axis of the clamp. This flat surface serves, in connection with a spring, to be hereinafter described, an important purpose; and said flat surface may extend wholly across the front or face of the clamp, or may constitute an annular flat surface, as in the present example. As shown in the drawings, the flat surface may be formed by placing the head in a lathe, and with a cutting-tool turning out a large groove, the deepest part of which forms the flat surface, and also the inner side of the flange, leaving the central part, *e*, of the face. While the effect of this is the formation of an annular groove on the face, it is only the flange *c* and the flat surface *d* which serve a useful purpose. In the present instance the central part, *e*, of the face serves as a place for the attachment of the springs *f*; but the beveled cylindrical surface *g*, adjoining the flat surface *d*, serves no special purpose.

The springs *f* consist of radial projections on the edge of a steel disk, F, and are formed by cutting notches *h* and bending the projections at an angle with respect to the face of the disk, as seen in Figs. 1 and 2. The central flat part of the disk is secured to the center part, *e*, of the face of the gaging-clamp by screws 1, (see Fig. 2,) entered through holes 1. (Shown in Fig. 5.) It will be seen the ends of the springs *f* are in proximity to the flat surface *d*, and the outer side of each of the springs is normally in contact with the inner side of the flange *c*. When the end of the unsoldered can-body is placed into the proper position for

gaging, it is surrounded outside by the flange, and the springs press the inner sides of the can-body outward against the flange, thereby gaging it. Any variation in thickness of the sheet metal of which the body is made will not affect the outside measurement of the can, but will affect only the inside measurement, as the springs which press on the inner walls of the can will yield more or less to accommodate the greater or lesser thickness of the tin. The yielding of the springs when the can-body is forced into position to be gaged and the resumption of their normal position against the inner side of the flange when the soldered can-body is withdrawn occasions a movement of the ends of the springs in a direction crosswise of the flat surface *d*. An important end is thereby accomplished, to wit: The rosin employed as a flux and the dust present in a shop, and which would otherwise accumulate on or about the gaging-flange, are prevented from clogging by the movement of the springs. The rosin and dust, being thereby loosened, may pass through the notches *h* between the springs, and thence, by repassing any of the notches, may readily escape.

The foregoing construction differs materially from other gaging devices, because there is no liability in this, as there is in all others, of the gage being clogged by the edge of the can-body end pushing the rosin or dust back into a groove.

The foregoing description of one head to clamp one end of a can-body serves also for the other head to clamp the other end of the body, the two heads together serving to clamp and to hold the can-body endwise.

A gaging device for a given-sized can—either a one, two, or three pound can—should be adapted to be adjusted to suit the slightly-varying sizes of can-bodies used by different can-makers. This is effected by making each clamping-head in two parts—that is, dividing the circular head on a diametrical line. Figs. 2, 6, and 7 give a clear understanding of this feature. One half, B′, of the two-part clamp is integral with the metal which constitutes the outside of the circular head B. A surface, *i*, is thus formed whose shape is semicircular, (see Fig. 6,) and whose plane is parallel with the front or face of the clamp. Upon this semicircular-shaped surface the other half, B^2, of the clamp is secured by means of two set-screws, I, each of which are passed through a separate slot, *k*, in the semicircular part of the head, and thence into holes *k′* in the half-clamp B^2. The length of these slots is in a direction toward the diametrical line, whereby the part B^2 of the clamp may be moved toward or from its co-part B′, and thus the size of the clamp is adjusted.

In the case of that clamp which is attached to the stationary end of the apparatus, it is necessary that the heads of the set-screws I should turn freely in holes 2 through the frame, which must be large enough to admit the screw-head and permit it to be adjusted in the slot.

To enable the two-part clamping-head to be adjusted with great nicety or accuracy, a flange, *J*, is cast integral with the head and projects forward from the rim thereof below each slot *k*, and a set-screw, *j*, passes through the flange in a radial direction with respect to the circular head. The end of the set-screw *j* bears against the outer rim of the movable part B^2 of the clamp. It will be understood that when the set-screws I are loosened these radially-bearing set-screws *j* are capable of moving the part B^2 to the very least extent imaginable, thereby providing for extreme nicety of adjustment.

The two clamping-heads and the spring on each are alike in all essential respects. In both the flange *c* is cut away on the top, as shown at c^2, at which point the side seam of the can-body will come, when the latter is entered endwise between the two clamping-heads, to the position designed. The object of cutting away the flange at c^2 is to permit the soldering-iron to move over the entire length of the side seam of the can-body.

A cylindrical block, L, whose diametrical dimension approximates that of the can to be soldered, is secured by one end to the stationary gaging-clamp in any suitable manner, and thus is held between the two gaging-clamps. In the present instance the end L′ of this block is provided with a projecting lug, *n*. (Shown in vertical section in Fig. 2, and also shown in Fig. 8.) This lug has straight vertical sides and enters a straight vertical depression formed in the face of the stationary circular head, and a central part of the spring-disk is also cut away to admit the entry of the lug *n*. A bolt, *p*, passes through the end of the block, the circular head, and the upright part of frame A, and by means of the nut *p′* secures these parts firmly together. The block L is a complete cylinder at one end, but, commencing at the top, at the other end is cut away diagonally across to the opposite side and near the opposite end, forming a curve, (denoted by the letter *q*.) The object of cutting the block away diagonally is, that by diminishing its size at one end it is easy to insert the rolled can-body. The horizontal top of the block serves to support the can-body along the side seam, and permits the operator, when soldering the side seam, to press down on the can-body with the soldering-iron. The cylindrical shape of the block at one end serves as a form around which the rolled can-body may be placed, and also as a guide, when the can-body is pushed endwise, to direct its end within the flange *c*.

What is commonly called a "knife" (denoted by the letter N) is secured to a lever, P, pivoted to an upright standard, P′, having a slot, *q′*, through which the bolt *p* passes. By this means, it will be seen, the knife may be adjusted in any direction to bear on or clamp the side seam of the can-body after the gaging of the ends has been effected.

In Fig. 1 the lever P is shown broken, for want of room, and at the extremity of the lever

a wire or rod, *r*, is attached, and connects with a treadle on or near the floor. (Not shown.) The depression of the treadle will raise the knife.

The movable gaging-clamp is carried by an arm, S, which is pivoted at *t*, below the cylindrical block, to the frame A. A spiral spring, U, has one of its ends attached to the pivoted arm, and the other end to the stationary frame, and serves, by drawing on the pivoted arm, to keep the movable gaging-clamp in position to press endwise on the can-body. The ends of the springs are tapered, and the tapered parts receive a cone-shaped head, *u*, one of which is attached to a bolt, 3, secured to the pivoted arm, and the other to a shank, 4, pivoted to the stationary frame. This manner of securing the spring is of practical importance, as thereby the ends of the spring are not injured by being stretched out. The special advantage which results from this manner of moving the gaging-clamp—that is, by swinging it on an arm which is pivoted at one side of its axis—is that but little movement is necessary to afford the requisite space for entering or withdrawing a can-body—this from the fact that the gaging-clamp moves in an arc of a circle and not axially away from its coacting gage. A wire or rod, V, is secured to the pivoted arm and to the treadle before referred to, so that upon depressing the treadle the knife is not only raised, but the movable gaging-clamp is withdrawn from its normal position and assumes that denoted by broken lines in Fig. 1, in which position a can-body may be placed on the cylindrical block to be gaged, or one which has been gaged and soldered may be removed therefrom.

A segment-shaped block, *w*, is attached to the lower part of the face of the movable gaging-clamp and rests against the flat part of the spring-disk, as indicated in dotted lines in Fig. 5. This segment-shaped block enters the end of the rolled can-body, and by drawing down on said end directs it into the gaging-flange.

Having described my invention, I claim and desire to secure by Letters Patent of the United States—

1. In a can-body-gaging device, a gaging-clamp consisting of a head provided with a flange to surround the end of the can-body on the outside, and a spring attached to the head to press the inner side of the can-body outward against the flange, as set forth.

2. In a can-body-gaging device, the combination of a head, having a flange to surround the can-body on the outside, and springs which normally are in contact with the inner side of the flange, as set forth.

3. In a can-body-gaging device, the combination of a head having a flange to surround the can-body on the outside, and provided with a flat surface adjoining but at an angle to the inner side of the flange, and springs in proximity to the flat surface, to press on the inner wall of the can-body, as set forth.

4. In a can-body-gaging device, the combination of a stationary gaging-clamp for one end of the can-body, and a gaging-clamp for the other end of the can-body, pivoted at one side of its axis, whereby it may swing or move in an arc of a circle, as set forth.

5. In a can-body-gaging device, a gaging-clamp for the end of the can-body, composed of two separable parts adjoining each other on a diametrical line, and adapted, substantially as described, to be moved toward or from each other, as set forth.

6. In an apparatus for soldering the side seam of can-bodies, a block to support the can-body along the side seam, and which forms a complete cylinder at one end, but is cut away diagonally across from one side and end to the opposite side and near the opposite end, as set forth.

In testimony whereof I affix my signature in presence of two witnesses.

JACOB G. JONES.

Witnesses:

CHAS. B. MANN,

JNO. T. MADDOX.