

(No Model.)

2 Sheets—Sheet 1.

J. H. CLAPP & C. H. EMERY.

FORMER FOR CAN BODIES

No. 460,947.

Patented Oct. 13, 1891.

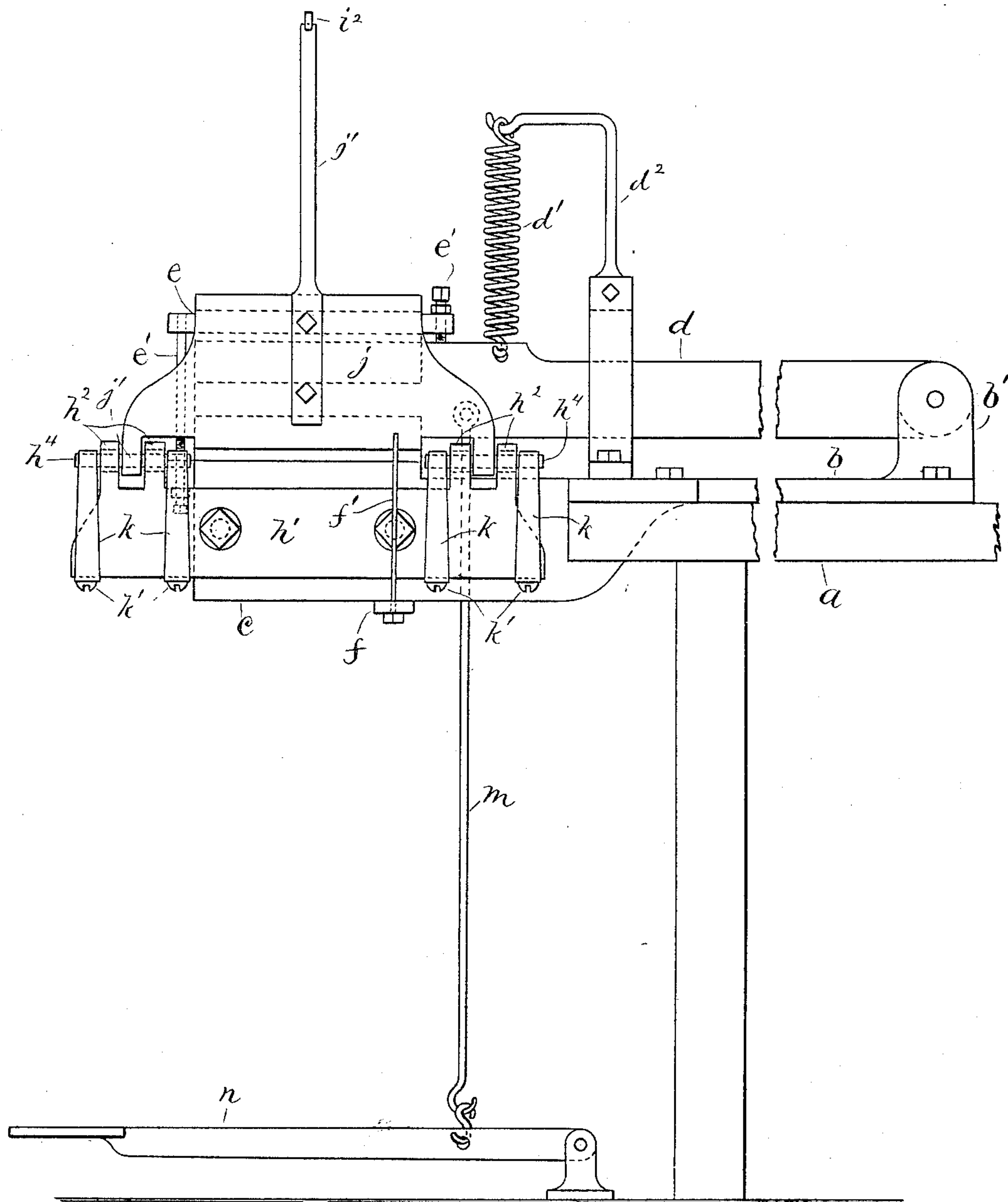


Fig. 1.

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Charles H. Emery Inventors,

By their Attorney David W. Fletcher.

Witnesses
M. A. Fletcher.
A. L. Fletcher.

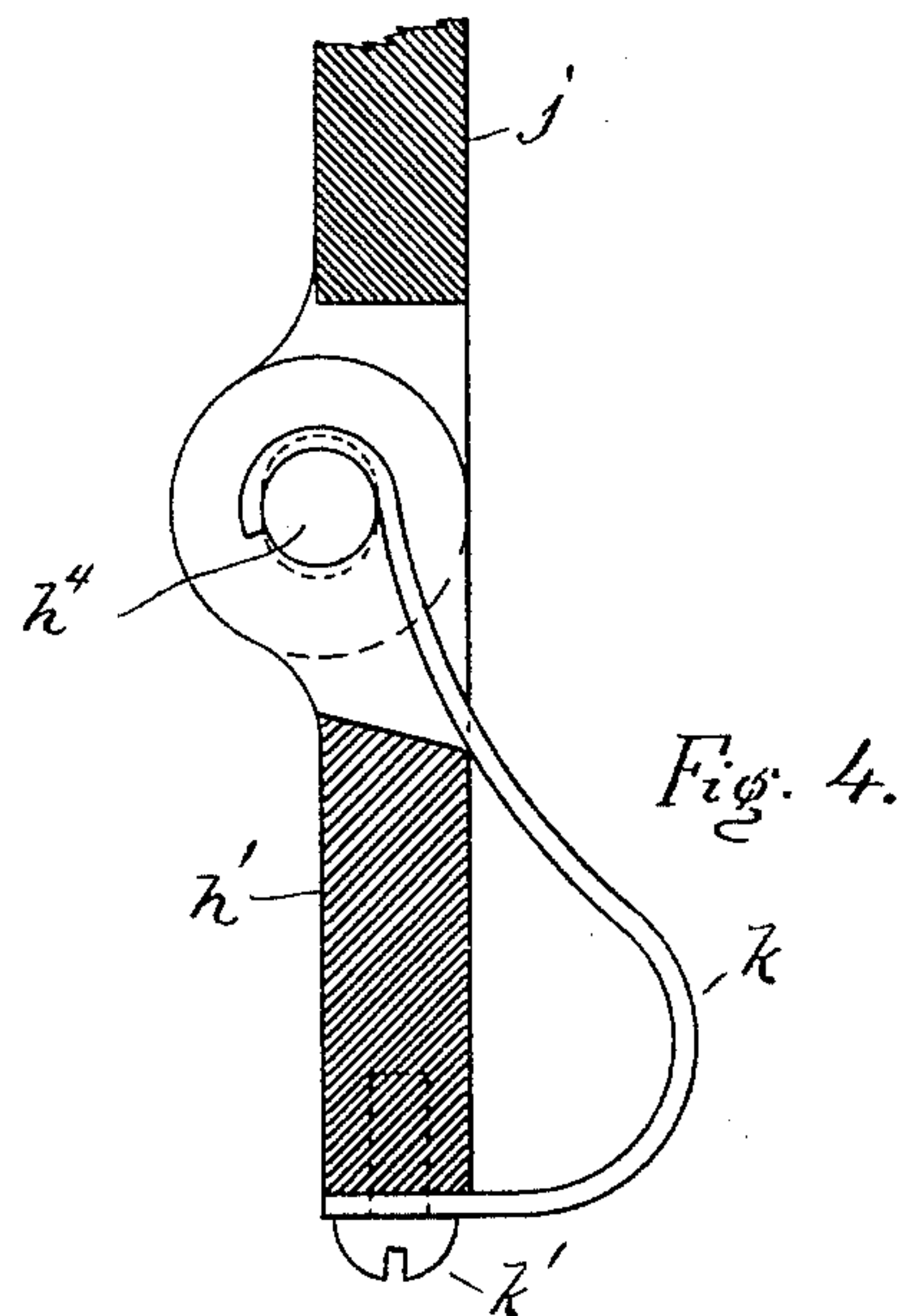
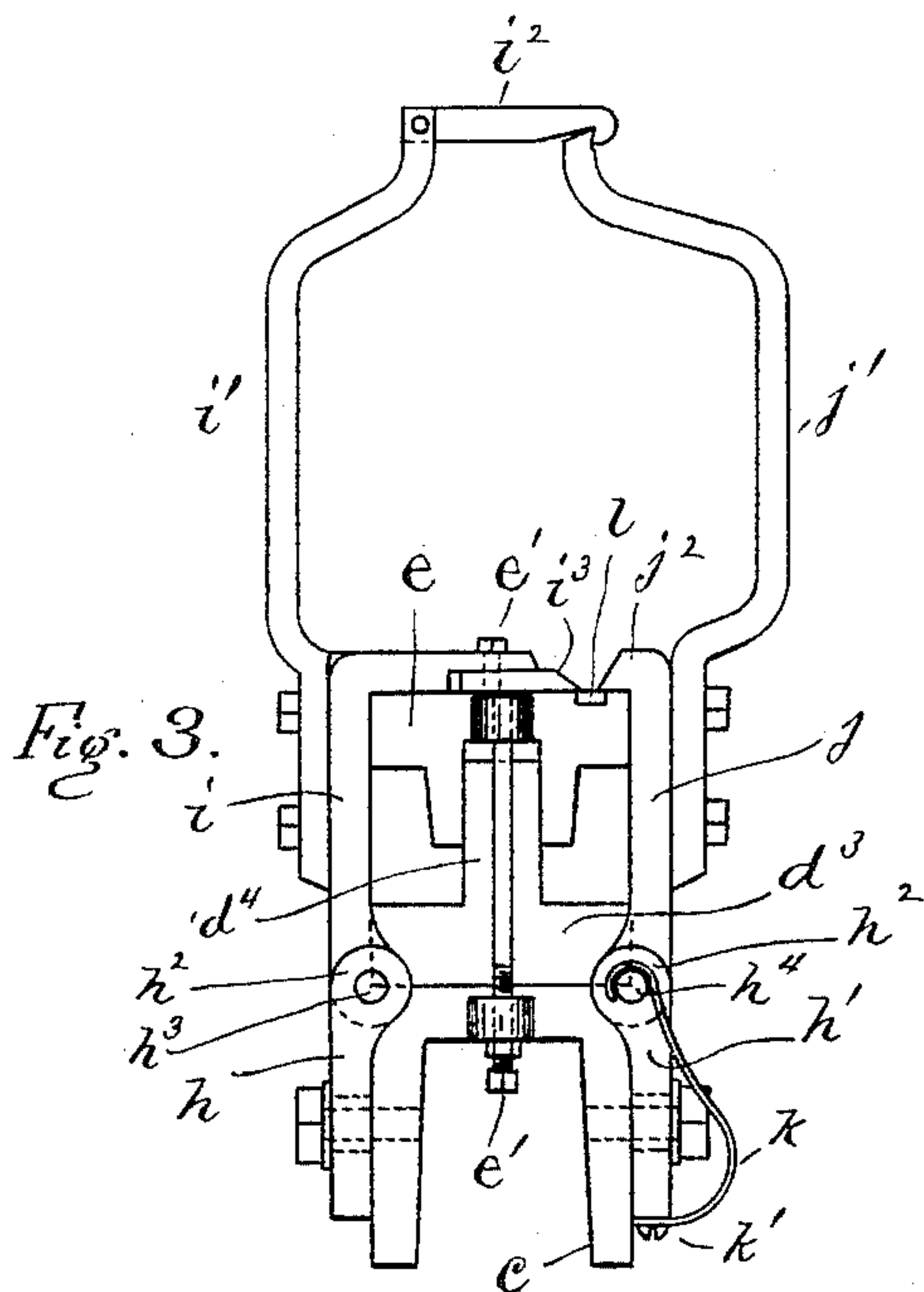
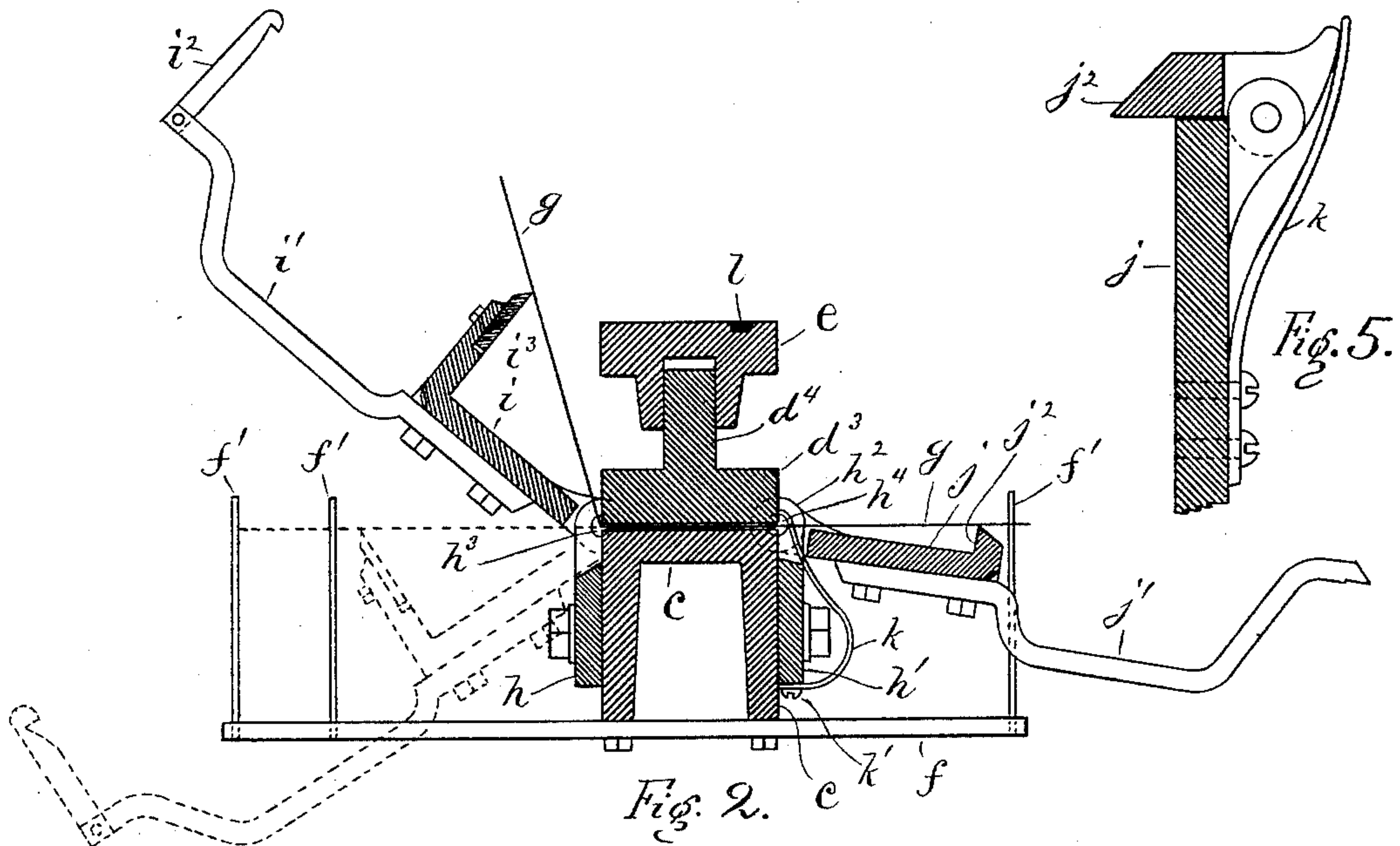
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2 Sheets—Sheet 2.

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Witnesses
Mr. A. Fletcher.
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James H. Clapp
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UNITED STATES PATENT OFFICE.

JAMES H. CLAPP AND CHARLES H. EMERY, OF CHICAGO, ILLINOIS, ASSIGNORS
TO JAMES LOUIS BOARD, OF SAME PLACE.

FORMER FOR CAN-BODIES.

SPECIFICATION forming part of Letters Patent No. 460,947, dated October 13, 1891.

Application filed June 1, 1891. Serial No. 394,655. (No model.)

To all whom it may concern:

Be it known that we, JAMES H. CLAPP and CHARLES H. EMERY, of Chicago, in the county of Cook and State of Illinois, have jointly invented certain new and useful Improvements in Formers for Can-Bodies, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in which—

Figure 1 is a side elevation of a machine embodying the features of our invention. Fig. 2 is a transverse vertical sectional view thereof. Fig. 3 is a front end view showing the position of the jaws or formers as they appear when clamped upon the can-body. Fig. 4 is a detail view, partly in section, of one of the jaws, showing an enlarged view of the yielding joint; and Fig. 5 is a sectional view in detail of one of the jaws, showing a modified construction.

Corresponding letters of reference in the different figures serve to designate like parts.

In forming the bodies of sheet-metal cans and other vessels, particularly those of a polygonal or rectangular shape, great difficulty has been experienced in causing the overlapping ends of the metal to bear smoothly and evenly against each other, touching at all points, so as to receive the solder regularly and produce a smooth and uniform seam throughout. Owing to the fact that the clamps or formers as heretofore constructed are positive and unyielding in their action the utmost accuracy and nicety of adjustment is required to adapt them to a given thickness of metal, and the slightest variation in the thickness of the latter causes it to warp or wrinkle, and hence to produce an imperfect seam. The object of our invention is to overcome this objection, and to so construct a former for the bodies of sheet-metal cans or other vessels that the forming jaws or dies may be enabled to yield and adapt themselves to plates of varying thickness without changing the character of the seam formed or requiring special adjustment, all of which is hereinafter more particularly described, and distinctly pointed out in the claims.

Referring to the drawings, *a*, Fig. 1, repre-

sents an ordinary bench or table, to which is bolted the bed *b*, integral with or attached to which is a stationary arm *c*, which projects horizontally from said bench, as clearly shown in said figure. Hinged to a lug *b'*, upon the bed *b*, is a movable arm *d*, to which is attached a spring *d'*, one end of which is secured to an arm *d''*, rigidly attached to the frame, whereby the arm *d* is normally raised from contact with the part *c* for the purpose hereinafter stated. That portion *d'''* of the arm *d*, which is immediately above the part *c*, is preferably made of a **L** shape in cross-section, as shown in Fig. 2, having a tongue *d''''*, over which is fitted a block *e*, arranged to be adjusted by means of set-screws *e' e'*. The part *d'''* and block *e* constitute a former for the can-body. While the width at top and bottom remains constant the height may be increased or diminished by means of the said set-screws. A bar *f*, Figs. 1 and 2, is rigidly attached to the part *c*, to which is in turn attached vertical studs *f'*, which serve as guides for the insertion of the metal sheet *g* between the parts *c* and *d'''*, as indicated in Fig. 2. Bolted or otherwise rigidly attached to the part *c* are plates *h h'*, provided, respectively, with lugs *h'' h''*, through which are passed pins *h''' h'''*. Forming-jaws *i j* are loosely hinged to the pins *h''' h'''*, as shown, and are provided with handles *i' j'* and a gravity-catch *i''*, by which they may be temporarily fastened to each other, as shown in Fig. 3. The bores in the lugs *h''*, through which the pins *h'''* pass, are elongated, as indicated in dotted lines in Figs. 1 and 4, thereby enabling the pins *h'''* to have a slight vertical movement therein. Bent springs *k*, the lower ends of which are attached rigidly to the plate *h'* by means of screws *k'*, are bent over the pins *h'''*, as shown, and are so adjusted as to normally draw said pins downwardly. A long jaw *i'''* at right angles to the main jaw *i* serve, when, the handles *i' j'* are in the positions, respectively, as shown in Fig. 3, to bend the sheet-metal plate over the top of the part *e*, while a short lip *j''* bends that portion of the sheet in conjunction therewith over said block in an opposite direction, one end of said sheet overlapping the other, thereby forming a seam in the inter-

vening space between the jaws j^2 , beneath which is placed in a suitable groove a tongue l , of wood or other non-heat-conducting material, which prevents the sheet metal at the seam from becoming chilled—an obvious advantage in soldering.

When the block e is adjusted to the proper height, so that a sheet of metal of a given thickness may be formed in a satisfactory manner thereon, the insertion of a sheet of thicker or thinner stock may be bent equally well, and the overlapping joint rendered equally uniform by the contractile or yielding action of the springs k , thereby causing the lip j^2 to hold the end of the sheet in firm contact with its fellow, so that while the parts are in the position shown in Fig. 3 the overlapping ends of the sheet may be soldered, thereby making a perfect seam. In Fig. 5 the lip j^2 is shown as hinged to the part j and depressed by the spring k . The arm d is normally raised by the action of the spring d' to permit the insertion of the sheet g beneath the forming-block d^3 . A treadle m , connected with the arm d by means of a link n , enables the forming-block to be depressed at will into a position whereby the forming-jaws may readily coact therewith.

It is obvious that the springs k should be of sufficient strength and stiffness to fully overcome the resistance of the metal to be formed and to press the overlapping ends firmly against each other. While it is apparent that the manner in which the springs are applied to accomplish the desired end may be varied without departing from the principle of our invention, yet we have found in actual practice that the construction, as shown in Figs. 1 to 4, affords uniformly satisfactory re-

sults, and enables perfect joints to be formed with stock that could not be used in a machine having a strictly positive action.

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

1. The combination, in a can-body former, of a yielding hinged jaw for bending the stock over the forming-block and means for maintaining said jaw in an approximately normal position under resilient tension, substantially as shown and described.

2. In a machine for forming can-bodies, the combination, with the forming-block, of hinged jaws for bending said sheet, one of said jaws being provided with a yielding joint or joints, and a spring or springs for holding said jaw in a normal position, whereby the movement of said jaw may serve to bend and compress the metal with a yielding pressure, substantially as shown and described.

3. The combination, with a forming-block, of hinged jaws in operative proximity thereto, elongated bores in the joints of one of said jaws, and springs for holding the axial pin in said latter jaw in a normal position with relation to said elongated bores, substantially as shown and described.

4. The combination, with the forming-block, of the yielding jaw j and springs k , substantially as shown and described.

In testimony whereof we have signed this specification, in the presence of two subscribing witnesses, this 22d day of May, A. D. 1891.

JAMES H. CLAPP.

CHARLES H. EMERY.

Witnesses:

D. H. FLETCHER,

R. D. WARDWELL.