J. GRAVES.

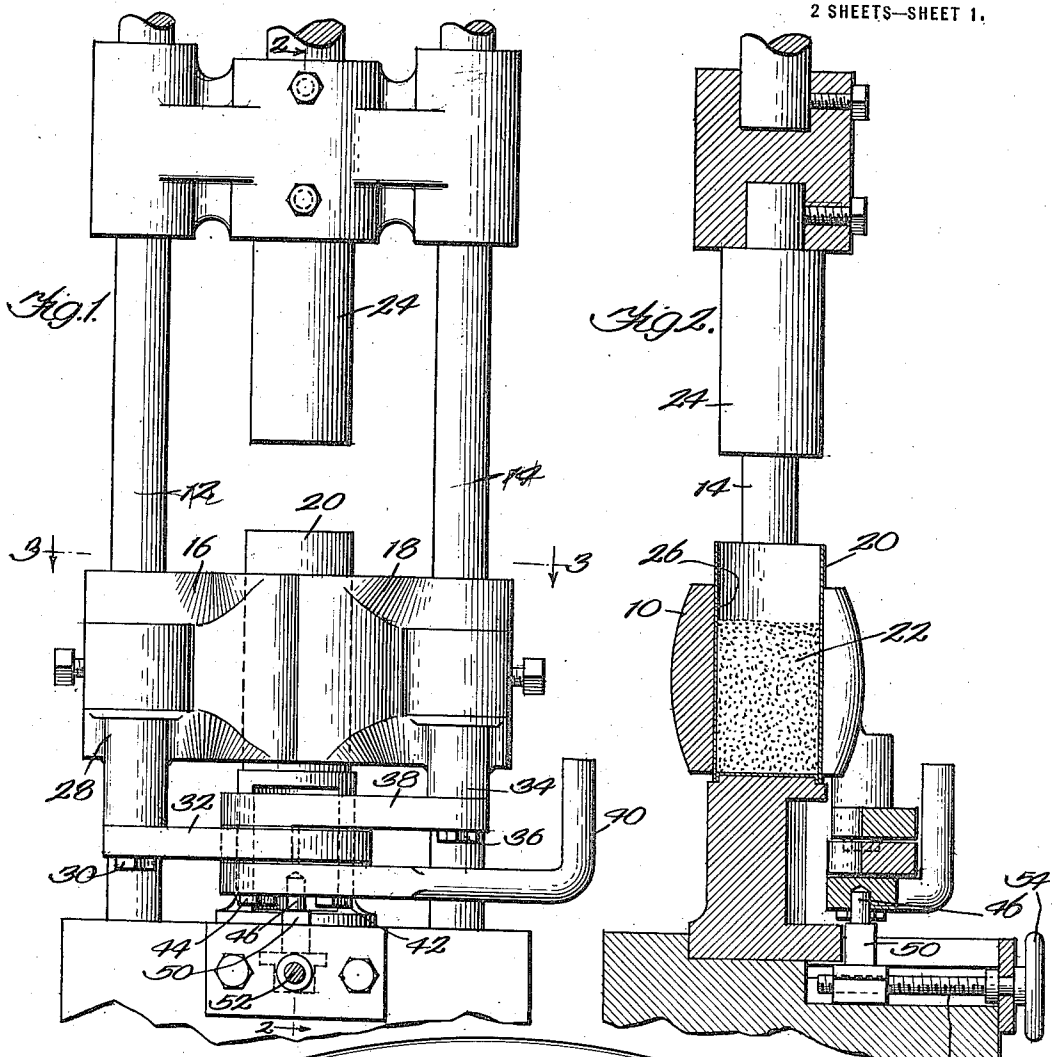
SINGLE LEVER LOCKING CLAMP.

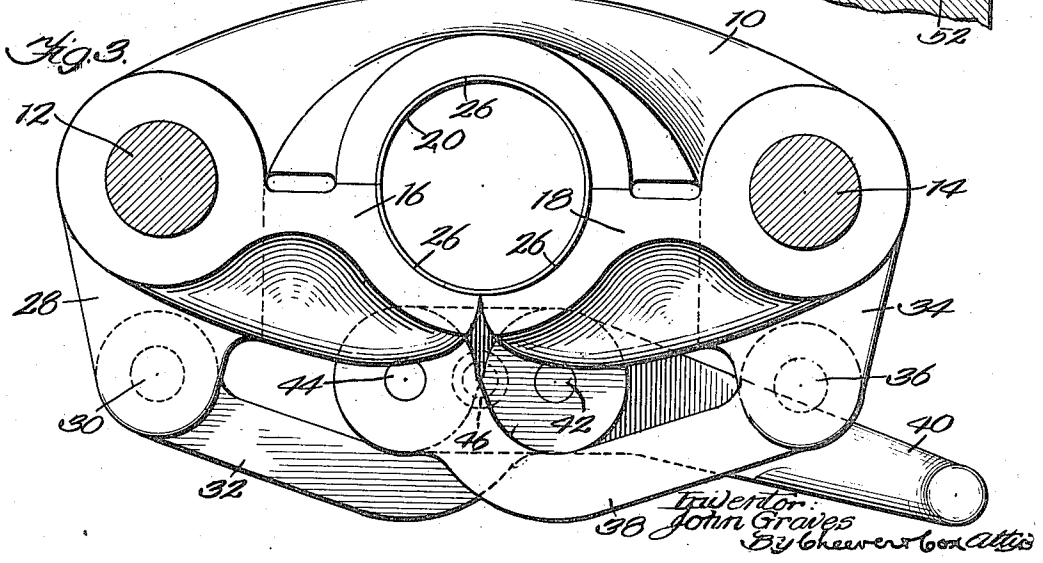
APPLICATION FILED AUG. 29, 1918.

1,306,426.

Patented June 10, 1919.

2 SHEETS—SHEET 1.





Inventor:
John Graves
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2 SHEETS—SHEET 2.

Fig. 4.

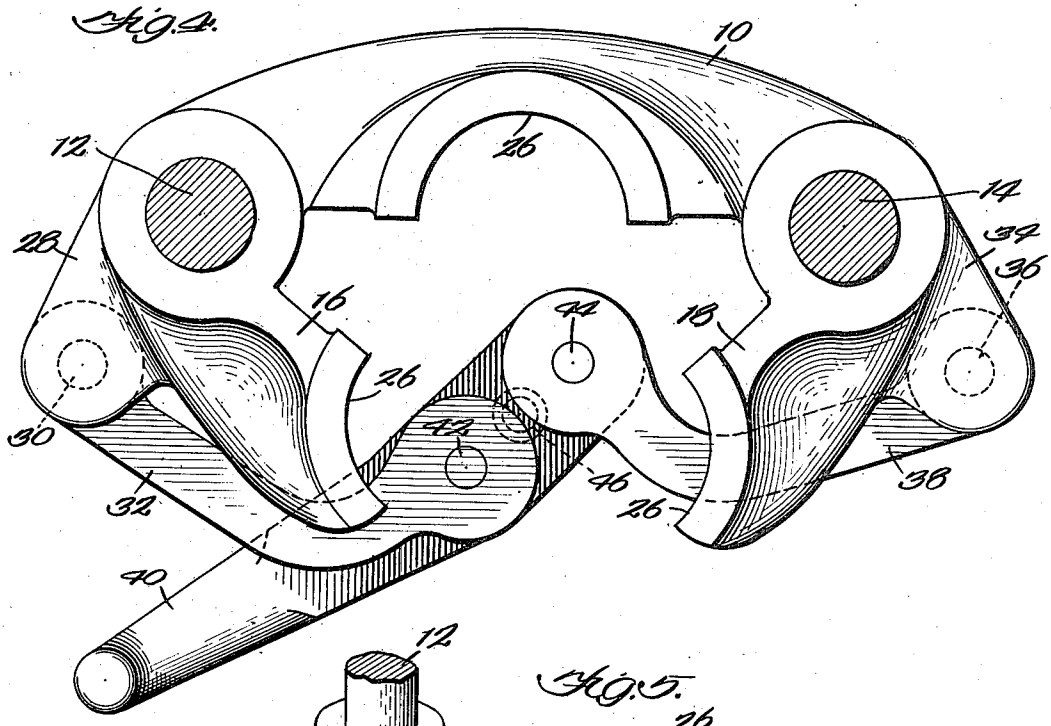
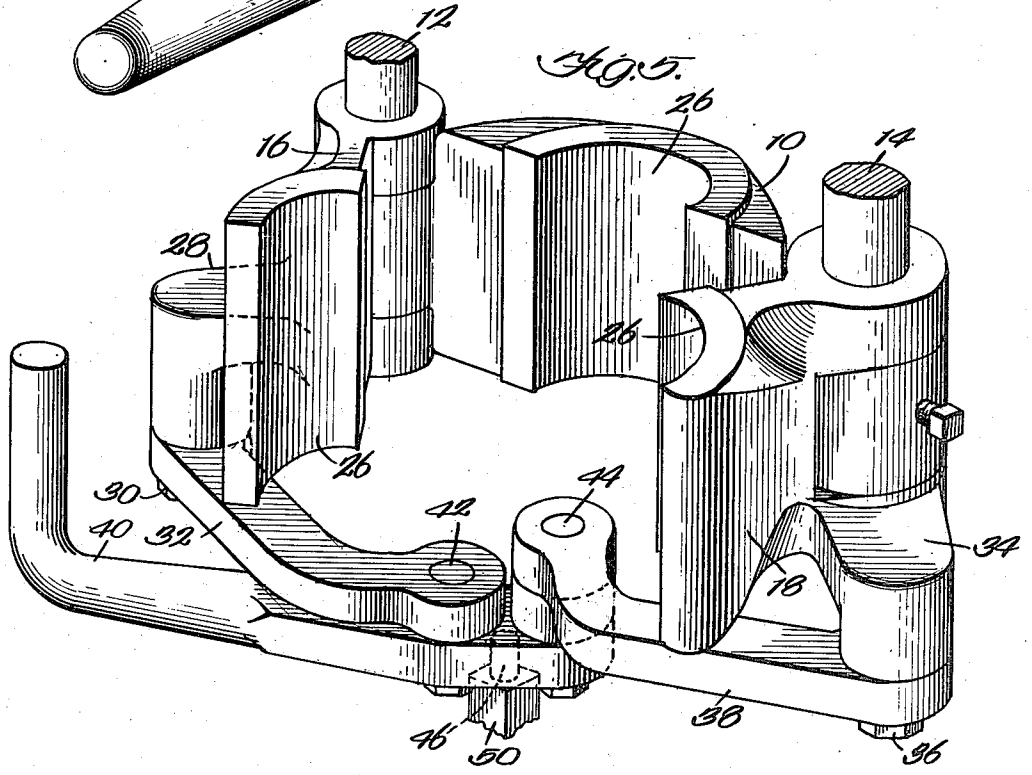


Fig. 5.



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UNITED STATES PATENT OFFICE.

JOHN GRAVES, OF MADISON, WISCONSIN, ASSIGNOR TO FRENCH BATTERY & CARBON CO., OF MADISON, WISCONSIN, A CORPORATION OF WISCONSIN.

SINGLE-LEVER LOCKING-CLAMP.

1,306,426. Specification of Letters Patent. Patented June 10, 1919.

Application filed August 29, 1918. Serial No. 251,926.

To all whom it may concern:

Be it known that I, JOHN GRAVES, a citizen of the United States, residing at Madison, in the county of Dane and State of Wisconsin, have invented a certain new and useful Improvement in Single-Lever Locking-Clamps, of which the following is a specification.

This invention relates to clamps for temporarily detachably securing an object in fixed position while it is being worked upon. The object of the invention is to provide a mechanism of this class which can be opened and closed by the movement of a single lever under the control of an operator, which automatically locks itself when in closed position, and in which the gripping parts are subject to a slight adjustment to allow for slight variations in the size of the article gripped.

The invention consists in mechanism capable of carrying out the foregoing objects, which can be easily and cheaply made, which is satisfactory in operation and is not readily liable to get out of order.

More particularly, the invention consists in the features and details of construction which will be hereafter more fully set forth in the specification and claims.

Referring to the drawings, in which similar numerals refer to the same parts throughout the several views,

Figure 1 is a front view of mechanism illustrating this invention in its preferred form, the same being shown applied to a machine for tamping depolarizing and other materials into the zinc exterior case of a dry electric battery, the clamping parts being in closed position.

Fig. 2 is a side view partially in section, taken from the left hand side of Fig. 1.

Fig. 3 is an enlarged plan view of the clamp mechanism, taken on the line 3—3 of Fig. 1.

Fig. 4 is a changed position view of the mechanism of Fig. 3, showing the clamp open.

Fig. 5 is a perspective view of the parts in substantially the same position as in Fig. 4.

The clamp shown in the drawings consists essentially of a stationary back-piece 10, having pivoted thereto on the uprights 12 and 14 of the tamping machine, jaws 16 and 18 which, when closed, closely embrace the article to be gripped, in the particular case here illustrated the cylindrical zinc can 20 to be filled with electric dry battery "mix" 22, and tamped solid by the reciprocating plunger 24, movable on uprights 12 and 14 in the manner and by mechanism well understood in the art, and therefore not shown in detail. In the particular case here illustrated, the clamping or working faces 26 of the respective clamping members described are made of circular form merely because that form happens to be the external form of the zinc can 20.

The jaw 16 has, integral with it, an arm or lug 28 to which is pivoted at 30 a link 32. Similarly, the jaw 18 has integral with it an arm or lug 34 to which is pivoted at 36 a link 38. These links 32 and 34 which are as shown capable of overlapping each other are of such a length and configuration and are so pivoted to operating lever 40 at 42 and 44 respectively, that when lever 40 is rotated about a pivotal axis 46, provided for it, the parts may be moved between two different selected positions; viz., that shown in Fig. 3, in which the pivots 42 and 44 are in alinement with each other and with pivot 46, whereby the mechanism is locked in closed position as shown in Fig. 3; and to the position of Figs. 4 and 5 in which the jaws 16 and 18 are open so that the operator, standing in front of the device, as illustrated in Figs. 1, 3 and 4, can insert cans 20 into operative position, as shown in the drawings, or remove them from that position, as the case may be.

In the particular class of work to which the device of this invention is shown applied, the cans 20 vary somewhat in diameter and in uniformity of configuration, and the device is therefore constructed to, within certain limits, take care of these variations without disturbing the locking operations of the device when the parts are in substantially the position of Fig. 3. This result is accomplished by mounting the pivot pin 46 on a slidable support 50, movable backward and forward by a slow motion screw 52, controlled by a hand-wheel 54. When the operator discovers that a given can 20 to be worked upon is of such a configuration that it will not readily permit the jaws 16 and 18 to close tight, as shown in Fig. 3, he can, by manipulating hand-wheel 54, move pivot pin 46 outward from

the center of the clamp thus allowing jaws 16 and 18 to be locked by lever 40 in the manner described, even though they may not be quite closed, as shown in the drawing, with reference to member 10.

By making the clamping jaws 16 and 18 in two parts, as shown and described, the clamp device opens in the middle for the ready insertion of cans 20 by an operator standing in front of the machine, and the operator does not have to get as far away from the machine as has been necessary in prior devices where the rear member 10 is covered by a single door or jaw across the front. This construction further allows for the ready application of the control of the device by a single hand lever 40 and it makes the automatic locking device, thereby allowing the operator free use of one hand at all times.

Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:—

1. In mechanism of the class described, a stationary jaw, two movable jaws one pivoted adjacent to each extremity of the stationary jaw, and mechanism operated by a single lever for swinging said movable jaws from open to closed position, and vice versa.

2. In mechanism of the class described, a stationary jaw, two movable jaws one pivoted adjacent to each extremity of the stationary jaw, mechanism operated by a single lever for swinging said movable jaws from open to closed position, and vice versa, and automatic means locking the movable jaws in closed position with reference to the stationary jaw.

3. In mechanism of the class described, a stationary jaw, two movable jaws one pivoted adjacent to each extremity of the stationary jaw, mechanism operated by a single lever for swinging said movable jaws from open to closed position, and vice versa, and automatic means located in the connection between said lever and said operating mechanism, locking the movable jaws in closed position with reference to the stationary jaw.

4. A three-part clamping jaw mechanism, two of the parts being movable with reference to the third, a single operating lever for the movable parts so pivoted to said movable parts that the lever can be moved into two different positions; in one of which all of the clamping jaws are in closed or working position and locked in that position, and in the other of which the movable parts are open for the reception of work.

5. In a locking clamp mechanism, a stationary member having a face formed to receive an article to be clamped, a normally fixed pivot in front of said clamping face, a lever pivoted on said pivot, a pair of movable jaws pivoted with reference to said stationary member and adapted for coöperation therewith to clamp an article against its said face, a pair of overlapping links, one connecting each of said movable jaws to said lever, the pivotal points of connection of said links to said lever being such that when the clamp mechanism is closed, the pivotal points of connection between the links and lever are on opposite sides of and in alinement with the pivotal support of the lever, whereby locking of the device is effected, as and for the purposes set forth.

6. In a locking clamp mechanism, a stationary member having a face formed to receive an article to be clamped, a normally fixed pivot in front of said clamping face, a lever pivoted on said pivot, a pair of movable jaws pivoted with reference to said stationary member and adapted for coöperation therewith to clamp an article against its said face, a pair of overlapping links, one connecting each of said movable jaws to said lever, the pivotal points of connection of said links to said lever being such that when the clamp mechanism is closed, the pivotal points of connection between the links and lever are on opposite sides of and in alinement with the pivotal support of the lever, whereby locking of the device is effected, and selectively operatable mechanism for moving the pivotal support of the lever toward and from the fixed member, as and for the purposes set forth.

7. In a clamp of the class described, a fixed member 10 having formed in one side a face adapted to receive an article to be clamped, a jaw 16 pivoted to one end of the fixed member, a jaw 18 pivoted to the other end of the fixed member, said two jaws being provided with suitably shaped clamping faces, adapted for coöperation with the clamping face on the first member, overlapping links pivoted one to each jaw, a pivoted lever adjacent to the free ends of said links, and pivotal connections between the free ends of said links and said lever, the whole arranged as shown and described, whereby when the lever is swung to a position so that the clamping jaws are in cooperative position with reference to said fixed member, the positions of the pivotal points of connection between the links and levers causes the device to be automatically locked, as described.

In witness whereof, I have hereunto subscribed my name in the presence of two witnesses.

JOHN GRAVES.

Witnesses:
W. S. MARVIN,
P. A. SCOVILL.