G. K. MONROE.

MACHINE FOR CRUSHING METAL CONTAINERS.

APPLICATION FILED JULY 19, 1920.

1,402,433.

Patented Jan. 3, 1922.

2 SHEETS—SHEET 1.

Fig. 2.

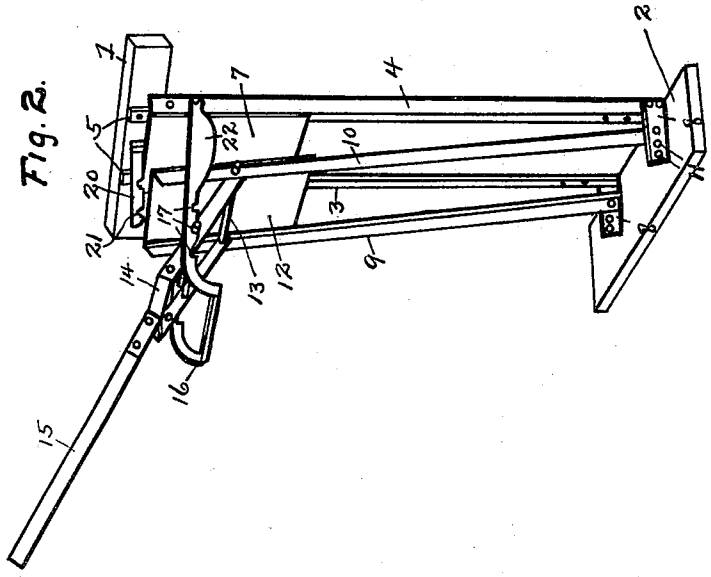
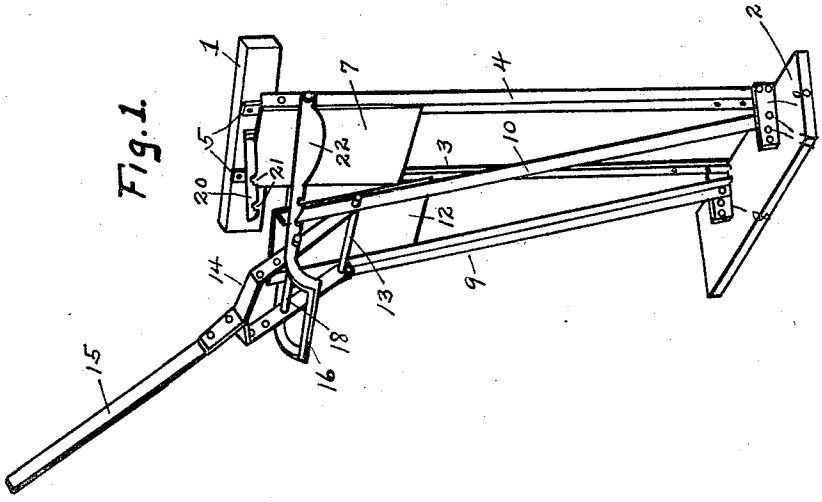


Fig. 1.



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Fig. 4.

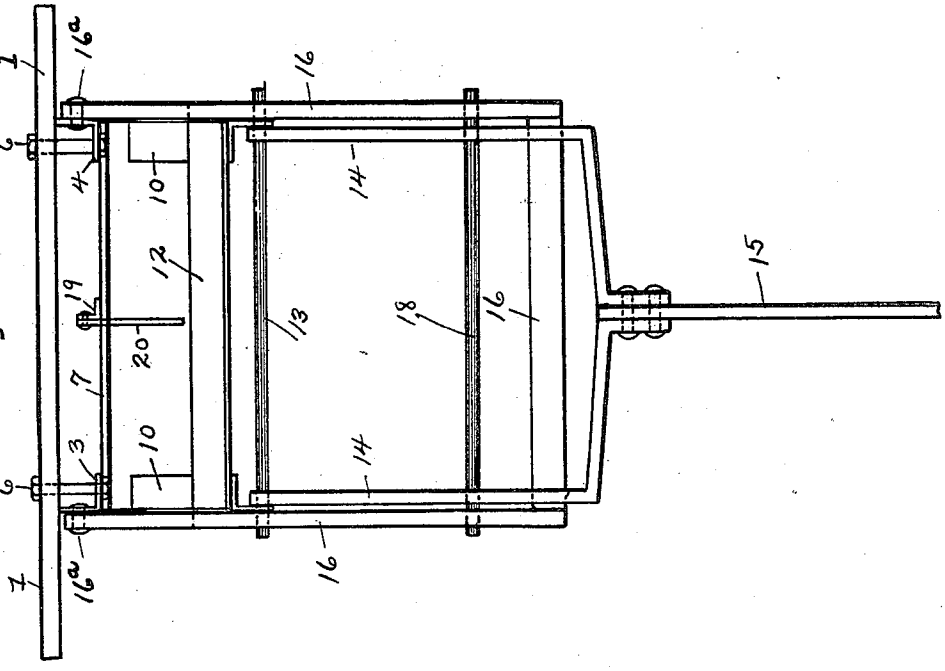
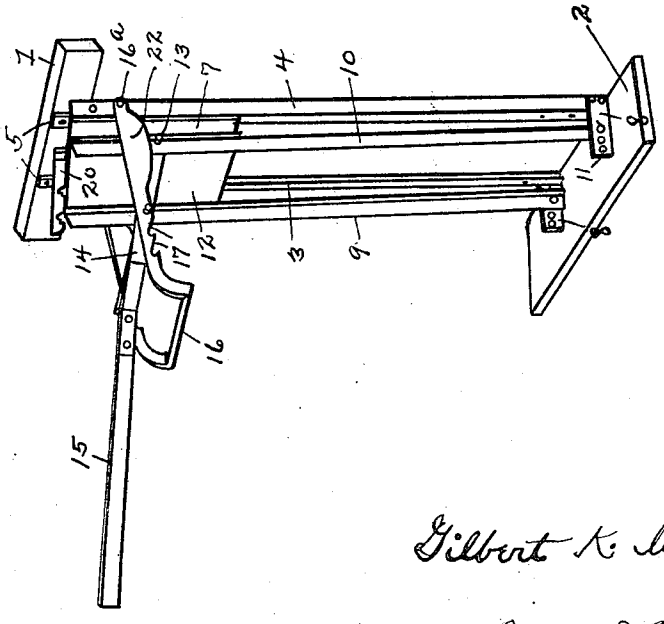


Fig. 3.



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UNITED STATES PATENT OFFICE.

GILBERT K. MONROE, OF SIDNEY, OHIO.

MACHINE FOR CRUSHING METAL CONTAINERS.

1,402,433. Specification of Letters Patent. Patented Jan. 3, 1922.

Application filed July 19, 1920. Serial No. 397,360.

To all whom it may concern:

Be it known that I, GILBERT K. MONROE, a citizen of the United States, residing at Sidney, in the county of Shelby and State of Ohio, have invented certain new and useful Improvements in Machines for Crushing Metal Containers, of which the following is a specification.

This invention relates to a machine for crushing discarded metal containers, such as tin cans, for the purpose of rendering them into a compact, flat shape to enable the cans to be readily transported for salvage purposes.

The object of my invention is to provide a machine of the character referred to which will be simple in its construction, effective in operation and readily transportable from place to place if desired.

In the accompanying drawings:—

Fig. 1 is a perspective view of a machine embodying my improvements showing the parts in the position they occupy when the container to be crushed is first placed in the machine.

Fig. 2 is also a perspective view showing the parts in the position they occupy upon the second stage of the crushing operation.

Fig. 3 is a similar perspective view showing the parts in the position occupied upon the final crushing operation.

Fig. 4 is an enlarged top plan view.

Referring to the drawings, 1 and 2 represent any suitable form of supports preferably of wood, to which the machine may be attached so as to support it in an upright position, these wooden supports being nailed or otherwise secured to any convenient place of attachment. Secured to these supports are two upright angle iron frame members 3 and 4; the frame members preferably having riveted to their upper ends straps 5 through which, and the support 1, extend bolts 6. Connected to the forward sides of the respective frame pieces 3 and 4 at the upper ends thereof is a metallic plate 7 which forms one of the surfaces between which the containers are crushed.

Pivotally connected at their lower ends to metallic blocks 8, projecting laterally from the lower ends of the frame pieces 3 and 4, are two angle bars 9 and 10 of substantially the same size and shape as the frame pieces 3 and 4; the blocks 8 being preferably provided with a series of openings 11 so that the pivotal points of the bars may be adjusted. Secured to the inner sides at the upper ends of these bars 9 and 10 is a metallic plate 12, similar to the plate 7, which forms the other surface between which the cans are crushed.

Pivotally connected to a rod 13, which is supported by the bars 9 and 10 at a point preferably midway the height of the plate 12, is the bifurcated or yoke-shaped portion 14 of an operating lever 15. Pivotally connected to the frame members 3 and 4 is a yoke-shaped fulcrum member 16 which embraces the yoke-shaped portion 14 of the operating lever. Each side portion of the fulcrum member 16 is provided with a series of notches 17, three in number in the present case, the two outermost notches having their inner side walls formed on an incline as shown, these notches co-operating with the projecting ends of a rod 18 carried by the bifurcated portion of the operating lever 15 to form fulcrum points for said lever. The pivotal points 16^a of the fulcrum member 16 are located at a point substantially midway between the pivotal point of the lever 15 and the upper end of the bars 9 and 10.

Pivotally connected to a small bracket 19, secured near the upper edge of the rear side of the plate 7, is a latch 20 provided with a series of notches 21, two in number in the present case. This latch, when in operative position, lies on the upper edge of the plate and projects forwardly therefrom in the position shown in the drawings.

The respective ends of the rod 13 project beyond the sides of the bars 9 and 10, and arranged to co-operate with these ends are projections 22 arranged on the respective sides of the swinging fulcrum member 16 for the purpose to be explained.

The operation of the device is as follows: The bars 9 and 10 carrying the crushing plate 12 are swung to the position shown in Fig. 1, with the ends of the fulcrum rod 18 placed in the outermost notches of the fulcrum member 16. The container to be crushed is then placed between plates 7 and 12. By drawing down on the lever 15, the bars 9 and 10, together with the plate 12 are swung inwardly, partially crushing the container. The upper edge of the plate 12, contacting the beveled nose of the pivoted latch 20, raises the latch, which, so soon as the edge of the plate coincides with the first notch, drops by gravity and holds the plate

12 and its supporting bars 9 and 10 in their operated position. By then raising the lever 15, the fulcrum member 18 will be swung upwardly, the ends of the fulcrum rod 18 riding upon the inclined wall of the forward notch until they coincide with the second notch, whereupon the fulcrum member 16 will drop to the position shown in Fig. 2. The operation is then repeated, the lever 15 being drawn downwardly so as to swing the plate 12 and its carrying bars to the position shown in Fig. 3, further crushing the can, the innermost notch of the pivoted latch engaging the top edge of the plate 12 to hold it in its operated position until the lever 15 can be again raised to cause the ends of the fulcrum rod 18 to engage the innermost notches of the fulcrum member 16 as shown in Fig. 3. The lever 15 will then be drawn downwardly to give the can its final crushing action and, so soon as the portions 22 strike the ends of the rod 13, the fulcrum member 16 will be raised so as to disengage the ends of the fulcrum rod 18, permitting the plate 12 and its bars 9 and 10 to swing in a forward direction sufficiently to release the crushed container; this automatic disengagement also obviating the danger of breakage of the parts as might happen from applying too great a pressure upon the operating lever 15 after the can had become completely crushed.

By the construction described, a very simple and effective machine is provided for the purpose which can be readily transported if desired from place to place and readily attached at any convenient point of operation. By the arrangement described, the crushing action is accomplished by a series of movements of the operating lever so that a maximum swing of the lever within convenient limits but partly crushes the can, thus providing ample leverage.

Having thus described my invention, I claim:—

1. In a machine of the character described, a stationary crushing plate, a movable crushing plate arranged in front of said stationary plate, a lever pivotally connected to the movable plate and extending forwardly therefrom so as to swing in a vertical plane located forwardly of the vertical planes occupied by said plates, and a pivoted fulcrum for said lever.

2. In a machine of the character described, a stationary crushing plate, a movable crushing plate, a lever pivotally connected to said movable plate, and a fulcrum member pivoted at a fixed place and having a plurality of fulcrum points for said lever.

3. In a machine of the character described, a stationary crushing plate, a pivoted crushing plate, a lever pivotally connected to said pivoted plate, a fulcrum member pivoted at a fixed place and having a plurality of fulcrum points for said lever, and a pivoted latch for said pivoted plate to hold it in its operated position, to permit the lever to be shifted from one fulcrum point to another.

4. In a machine of the character described, a stationary supporting frame having a crushing plate thereon, a pivoted frame having a crushing plate, said pivoted frame being located in front of said stationary frame, an operating lever having its inner end pivoted to said pivoted frame and projecting forwardly therefrom so as to swing in a vertical plane located forward of the vertical plane of said frames, and a fulcrum member pivotally attached to said stationary frame and projecting forwardly to provide a fulcrum for said lever.

5. In a machine of the character described, a stationary frame having a crushing surface, a pivoted frame having a crushing surface thereon, an operating lever pivotally connected with said pivoted frame, a fulcrum member pivotally connected with the stationary frame and having a plurality of fulcrum points for said operating lever, and a latch for holding said pivoted frame to different positions of operation to permit the shifting of the operating lever from one fulcrum point to another.

6. In a machine of the character described, a stationary crushing plate, a pivoted crushing plate, an operating lever pivotally connected to said pivoted plate, a pivoted fulcrum for said operating lever, and means for disengaging said fulcrum from said lever at a certain point in the operation of said lever.

7. In a machine of the character described, a stationary frame having a crushing surface, a pivoted frame having a crushing surface, an operating lever having a bifurcated end pivotally connected to said pivoted frame, a U-shaped fulcrum member pivotally connected to said stationary frame and having a plurality of fulcrum points, the bifurcated portion of said operating lever having projections to engage said fulcrum points.

8. In a machine of the character described, a stationary frame having a crushing surface, a pivoted frame having a crushing surface, an operating lever having a bifurcated end pivotally connected to said pivoted frame, a U-shaped fulcrum member pivotally connected to said stationary frame and having a plurality of fulcrum points, the bifurcated portion of said operating lever having projections to engage said fulcrum points, and a latch for holding said pivoted frame in different positions of operation.

9. In a machine of the character described, a stationary frame having a crush-

ing surface, a pivoted frame having a crushing surface, an operating lever having a bifurcated end pivotally connected to said pivoted frame, a U-shaped fulcrum member pivotally connected to said stationary frame and having a plurality of fulcrum points, the bifurcated portion of said operating lever having projections to engage said fulcrum point, a latch for holding said pivoted frame in different positions of operation and projections on said pivoted frame arranged in the path of movement of said pivoted fulcrum member to disengage the same from said operating lever at a certain point in the operation of the machine.

10. In a machine of the character described, a stationary crushing plate, a pivoted crushing plate having its pivoted point in close proximity to the point of support of said stationary plate, a lever pivotally connected to said movable plate, and a pivoted fulcrum for said lever.

11. In a machine of the character described, opposed crushing members, an operating lever, and means for forcing one of said members toward the other by a succession of movements of said lever, together with means for holding said member in its operated position during the intervals between successive movements.

In testimony whereof, I have hereunto set my hand this 10th day of July, 1920.

GILBERT K. MONROE.

Witnesses:
D. F. MILLS,
RUTH KIZER.