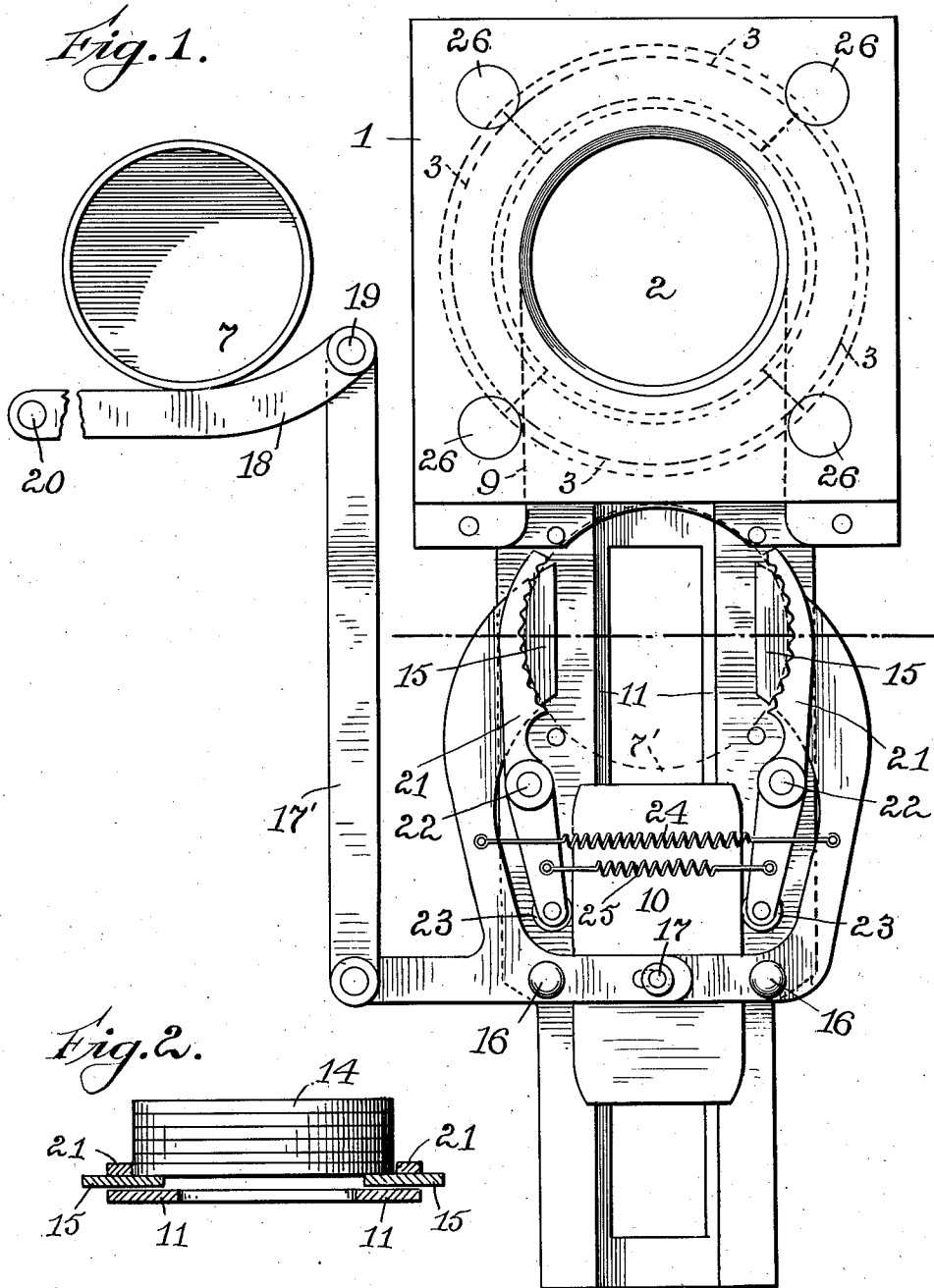


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 ASSEMBLING MECHANISM FOR CAN BODIES AND HEADS.
 APPLICATION FILED APR. 26, 1910.

994,456.

Patented June 6, 1911.

2 SHEETS—SHEET 1.



Witnesses:

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James A. Gray,

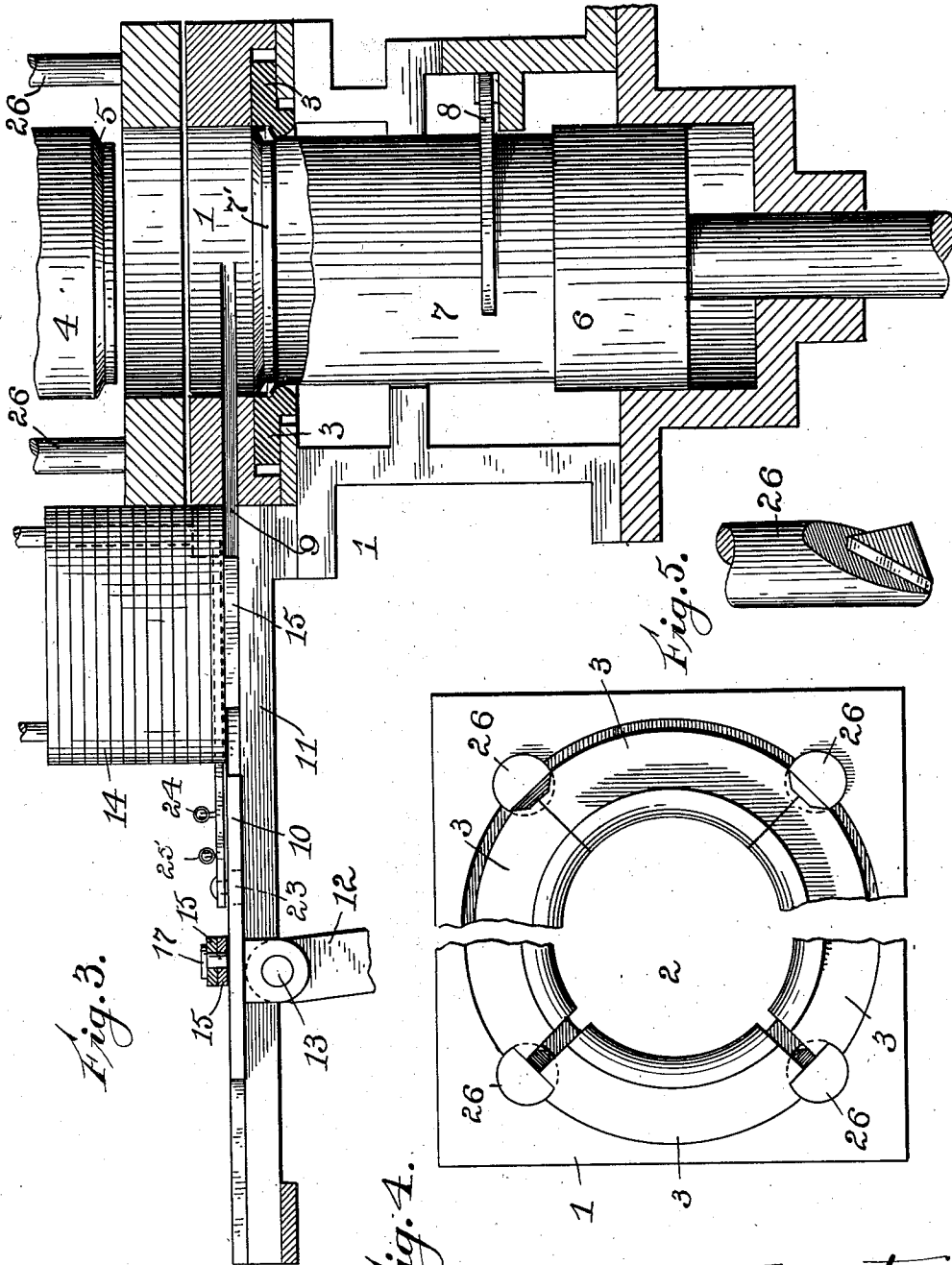
by *Spencer Middleton* Attorney.

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Witnesses:
 Arthur L. Lee.
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Fig. 4.

by Spear, Middleton, Donaldson & Spear
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UNITED STATES PATENT OFFICE.

JAMES ALFRED GRAY, OF SAN FRANCISCO, CALIFORNIA.

ASSEMBLING MECHANISM FOR CAN BODIES AND HEADS.

994,456.

Specification of Letters Patent.

Patented June 6, 1911.

Application filed April 26, 1910. Serial No. 557,723.

To all whom it may concern:

Be it known that I, JAMES A. GRAY, a citizen of the United States, residing at San Francisco, California, have invented certain new and useful Improvements in Assembling Mechanism for Can Bodies and Heads, of which the following is a specification.

My invention relates to means for feeding can heads to be assembled with the can bodies, my object being to provide a feeding mechanism which will depend upon the presence of the can body in controlling the feed of the head to be assembled therewith, that is to say, as long as the can bodies are fed to the chuck in proper order and time, the heads to be assembled with these bodies will also be fed to the chuck; but when, for any reason, the feed of the can bodies becomes irregular or ceases, the feed of the heads will also be arrested.

The invention consists in the features and combination and arrangement of parts hereinafter described and more particularly pointed out in the claims.

In the accompanying drawings Figure 1 is a plan view of a chuck for assembling the heads and bodies of cans with my feeding mechanism in connection therewith; Fig. 2 is a detail view of a stack of can heads with the devices directly adjacent thereto in section, which devices form parts of the feeding mechanism; Fig. 3 is a longitudinal sectional view through the feeding mechanism and the chuck with parts in elevation; Fig. 4 is a plan view of the crimping dies for uniting the head and can body, this view being broken and showing one part of the die moved inwardly and the other in its outermost position; Fig. 5 is a detail view of one of the plungers for operating the dies.

In these drawings, 1 indicates a chuck having a recess or opening at 2 of substantially the diameter of the can head, said chuck having mounted, in its lower portion, die members 3 of segmental form, as shown in Fig. 4, there being preferably four of these, and each being adapted to move radially in relation to the center of the chuck.

4 indicates a vertically movable plunger or head having its lower face shaped to conform at 5 to the shape of the can head, and 6 indicates a vertically movable plunger or carrier for the can body, which is shown in position thereon at 7. The cans

are fed into position over the plunger or carrier 6 when the latter is down, and then the plunger or carrier rises to move the upper edges of the can within the crimping device, consisting of the jaws 3, the wedges 26 and the plunger 4. The cans are fed into position over the carrier 6 by any suitable means, such as shown at 8.

In Fig. 3 the position of the can head in relation to the can body is shown at the time just prior to the crimping action, it being observed that the outer flange of the can head 7' depends over the edge of the can body, and then by a downward movement of plunger 4 the outer flange of the can head is forced over the flared flange of the can body and coming in contact with the beveled edge of the members 3 is forced inwardly under the flange of the can body. These can heads are introduced into the chuck from a way or opening 9 at one side thereof, and for this purpose I employ a thrust plate or feeder 10 moving on guideways 11 extending out from the chuck, the said thrust plate being reciprocated in the guides through any suitable connection, a portion of which is shown at 12 in Fig. 3 pivotally connected to the thrust plate at 13. The can heads are arranged in a stack or pile at 14, the lowermost one resting upon movable supporting members 15, one on each side of the guideway, and in the form of arms pivoted at the points 16 to the guide frame or bracket, and connected together at 17 by a pin and slot. These supports are operated to and from the position shown in Fig. 1 by means of a link 17' connected with a controller lever or arm 18 by a pivot at 19, the said controller lever being pivotally mounted at 20 and having a curved end in the path of the can body 7 on its way to the chuck. On each side of the guideway I employ an arm or retainer 21 pivotally mounted on the guideway frame at 22, and each having a roller 23 on its forwardly extending arm to be engaged by the side edge of the thrust plate or feeder 10, which side edge, it will be noticed, is curved at the front and rear corners. The retainers 21 have arc-shaped jaws which are serrated and are curved to conform to the periphery of the heads.

The supports 15 are in the same plane, as shown in Fig. 3, with the guideway 9, so that when the stack of caps or heads is resting upon these supports, the thrust plate

or feeder 10 can move freely back and forth without effecting any feed of the lowermost head, as this will be held just above the plane of movement of the thrust plate. This effect will be maintained so long as no can bodies arrive at the chuck or to the position shown in Fig. 1, but when a can body does reach this position as a result of the action of the carrier mechanism for the bodies, the said body will press the controller lever 18 to one side, and this movement will be conveyed through the link 17' to the supporting arms 15, and these supporting arms will be retracted or spread apart from the position shown in Fig. 1, and thus the lowermost can head of the pile will be allowed to drop down into the plane of movement of the thrust plate, and on the forward movement of this plate the can head will be moved into the chuck to be positioned by the plunger 4 in proper relation to the can body for the crimping action of the dies. The forward movement of the thrust plate will also result in spreading the forward arms of the retainers 21, and causing their serrated arc-shaped arms to grip the next to the lowest can head to hold this, together with the pile or stack of can heads, against falling down while the thrust plate is performing its function, and this supporting effect of the stack or pile of can heads will be maintained so long as the thrust block or plate is in its forward movement for delivering the can head to the chuck the stack resting on the plate itself after it releases the roller 23. After the can head passes into the chuck, the spring 24 connecting the supporting arms 15 will exert its force, and thus draw these arms toward each other into position to support the lowermost can head, and when the thrust plate recedes, the retainer arms 21, under the action of the spring 25 connecting them, will be separated so that then the lowermost can head of the stack will be free to fall downwardly into the plane of the thrust plate as soon as the supporting members 15 are again separated or withdrawn from beneath the lowermost can head. It will thus be seen that I provide means for supporting the whole stack of can heads above the path of movement of

the thrust plate so long as no can body is fed to the chuck, but when a can body arrives at the chuck, the lowermost can head will be allowed to fall into the plane of movement of the thrust plate to be carried thereby into the chuck, and, at the same time, the next can head above the one which has just fallen down to be fed in, will be gripped by the retainers 21, and thus the whole stack of can heads will be supported while the thrust plate is performing its function. I prefer to operate the crimping die segments by vertically movable rods 26 disposed at different points about the crimping die segments, as shown in Fig. 4, and having inclines to engage the die segments for forcing them inwardly.

I claim as my invention:—

1. In combination with a chuck, a reciprocating feed member for can heads, a pair of movably mounted supporting arms for the can heads, controlling means therefor, operated by the can body on its way to the chuck, a pair of retaining arms to grip the periphery of the next to the lowest can head, and means for operating the said retainers, substantially as described.

2. In combination with a chuck, a reciprocating feed member for can heads, a pair of movably mounted supporting arms for the can heads, controlling means therefor, operated by the can body on its way to the chuck, a pair of retaining arms to grip the periphery of the next to the lowest can head, and means for operating the said retainers, said means consisting of the reciprocating feeder, substantially as described.

3. In combination with a chuck, a reciprocating feeder, a pair of supporting arms movably mounted, a pair of retaining arms pivotally mounted, a controlling means operated by the passage of the can body for controlling the supporting arms, the said retaining arms being operated by the reciprocating feeder, substantially as described.

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

JAMES ALFRED GRAY.

Witnesses:

F. W. WEST,
WILSON LYFORD.