A. LOTZ.

CAN HEADING MACHINE.

APPLICATION FILED FEB. 27, 1905.

907,259.

Patented Dec. 22, 1908.

6 SHEETS—SHEET 1.

Fig. 1

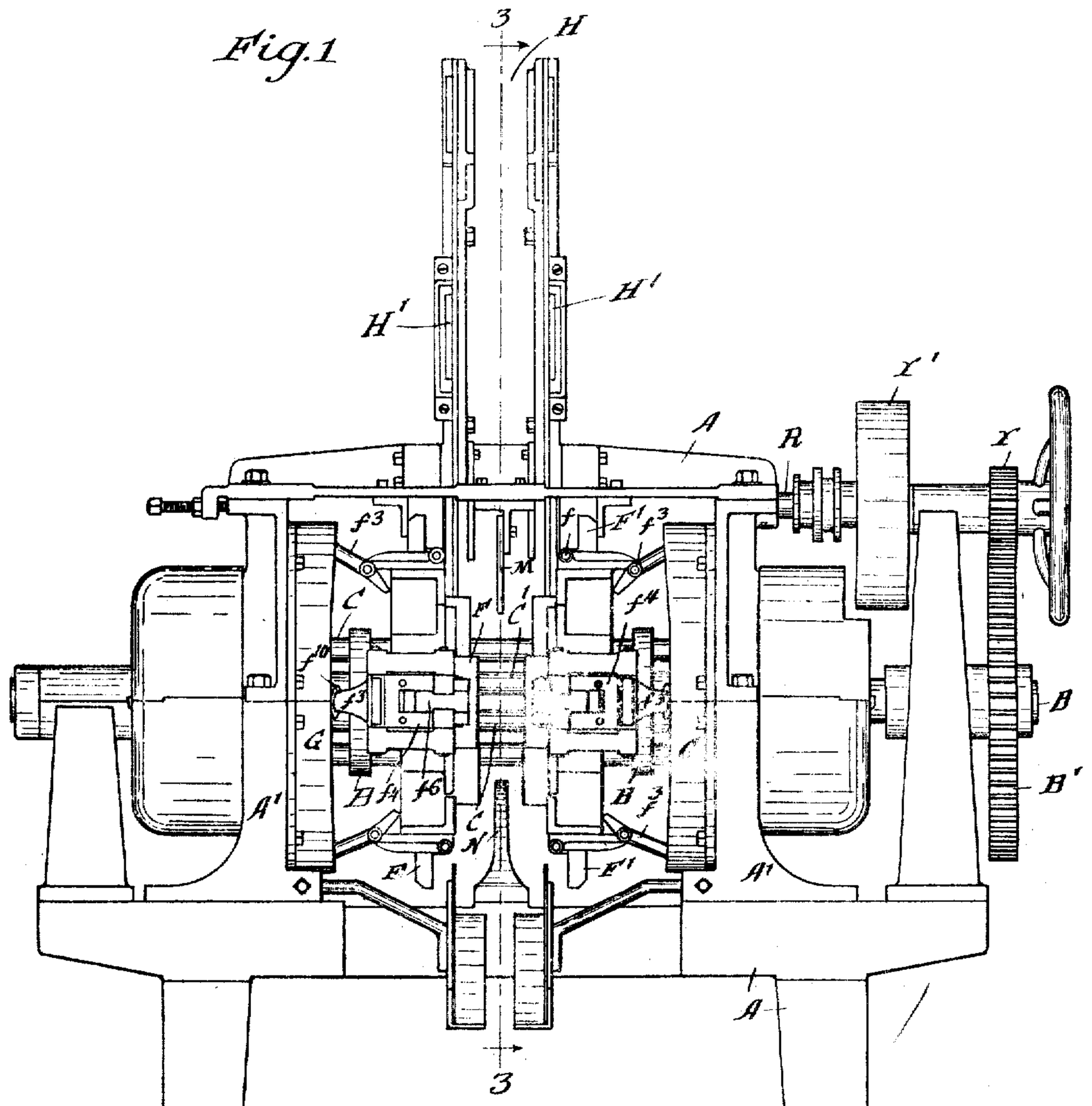
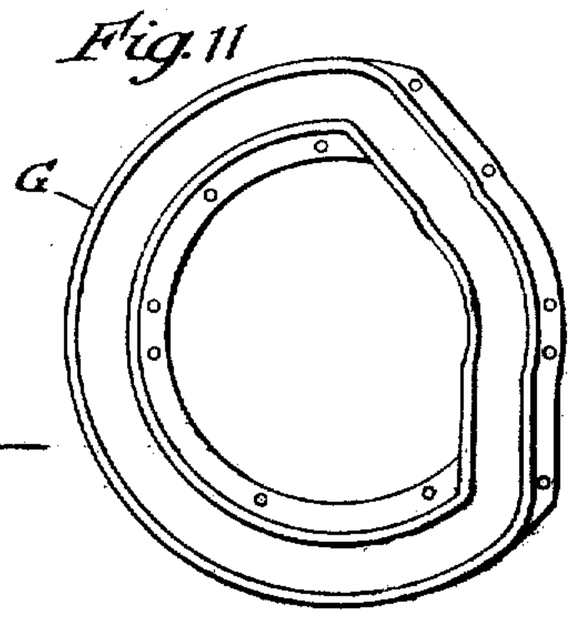


Fig. 11



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5 SHEETS—SHEET 2.

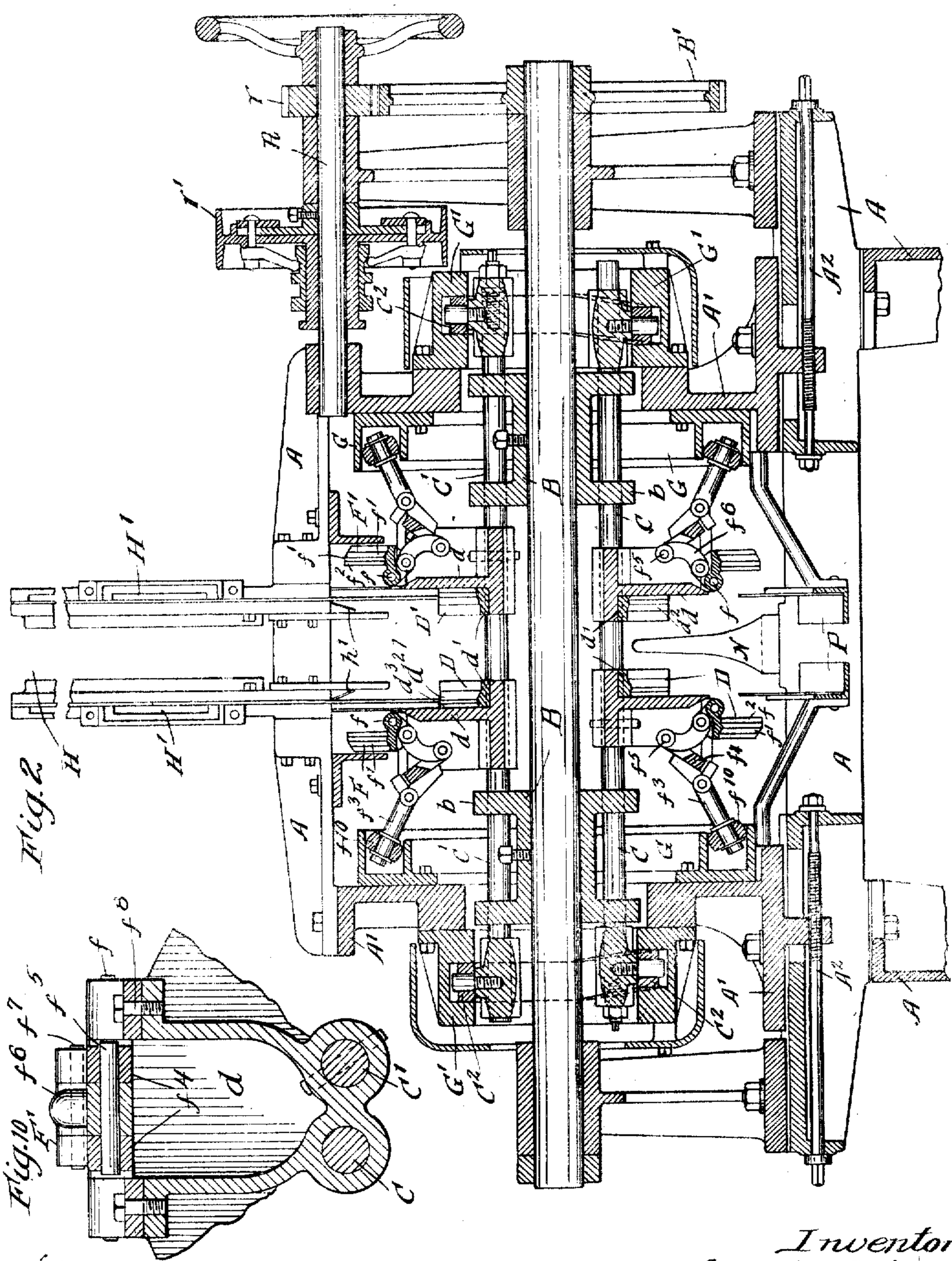

Fig. 2

Fig. 10.

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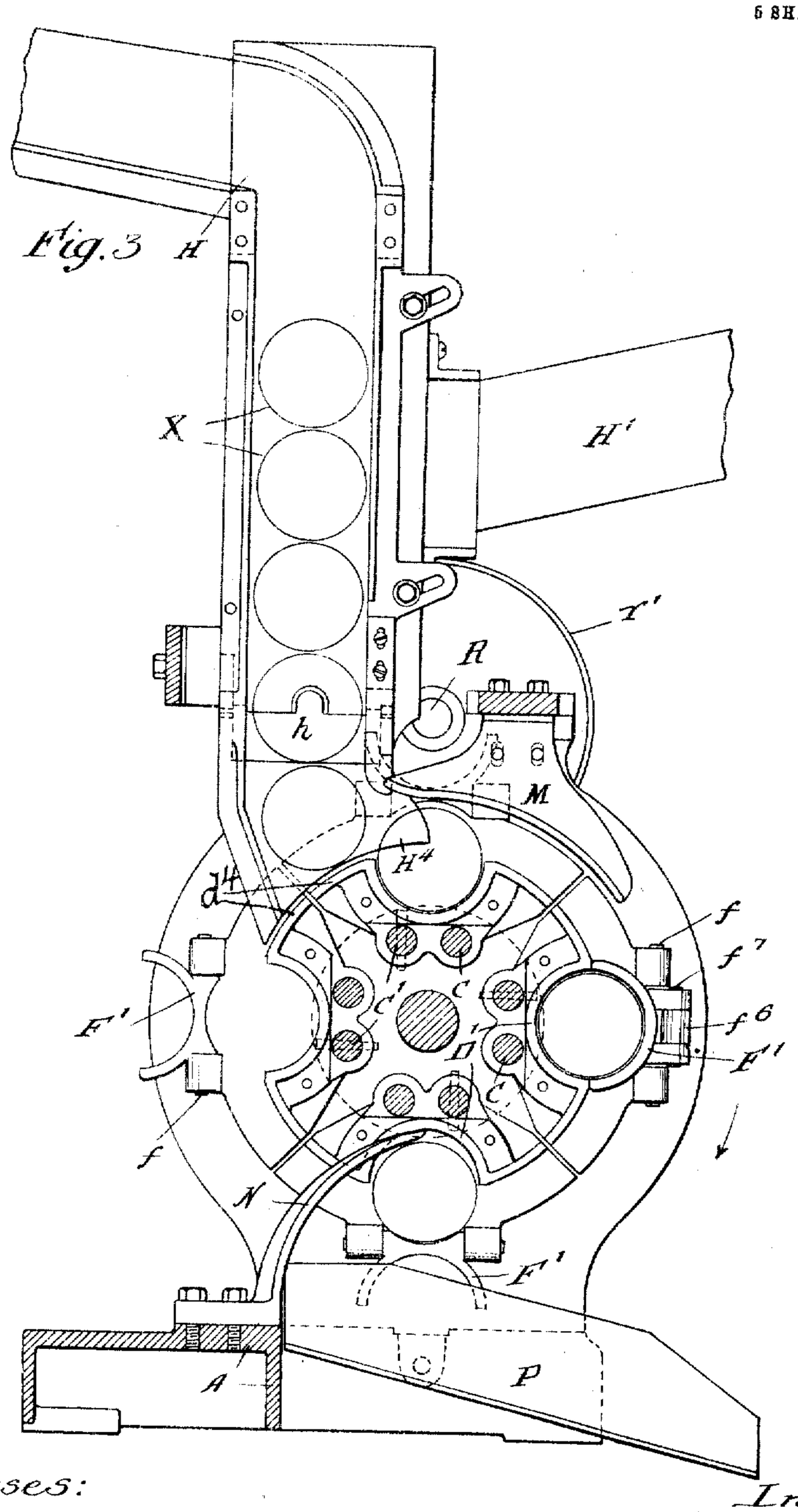
5 SHEETS—SHEET 3.

Fig. 3



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5 SHEETS—SHEET 4.

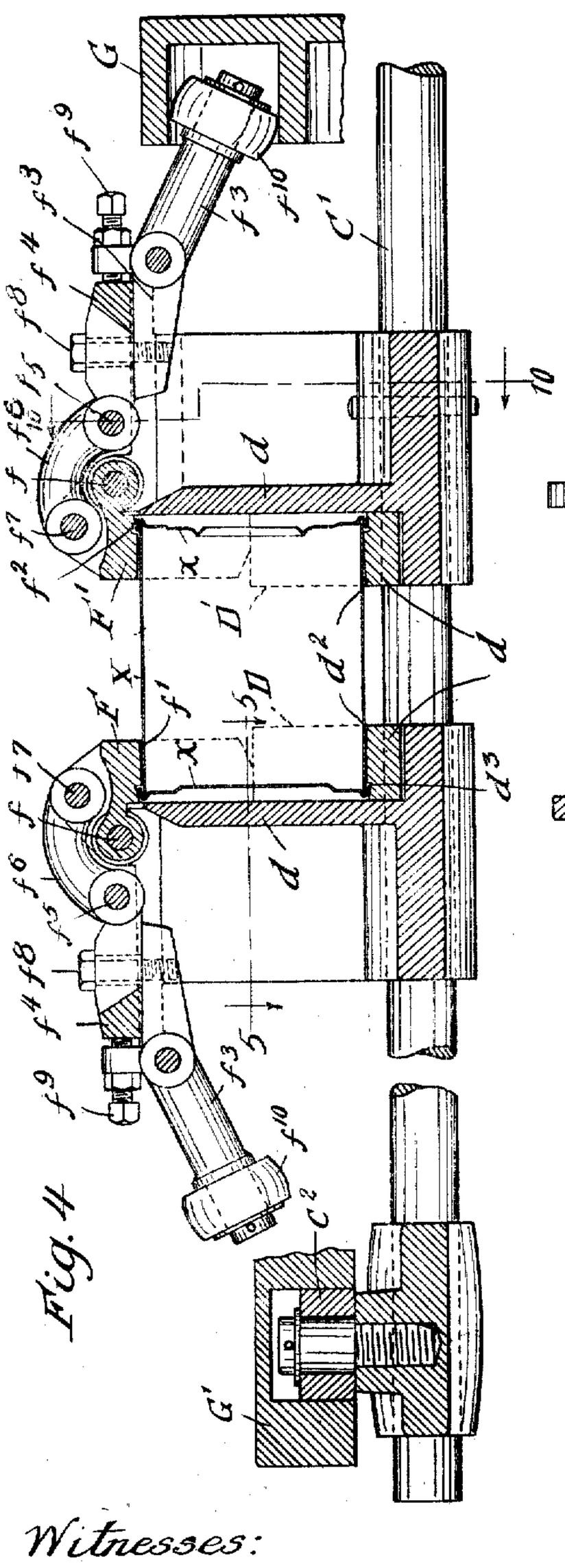

Fig. 4

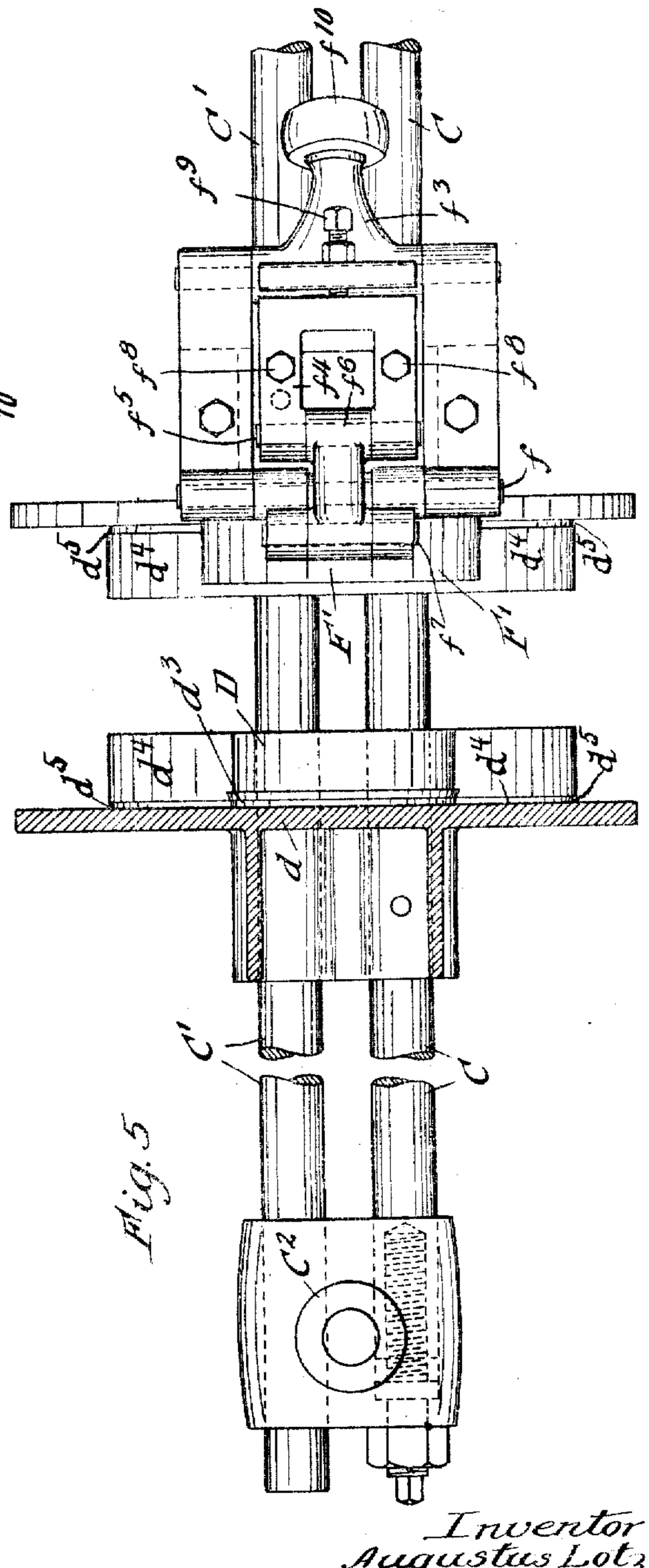

Fig. 5

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5 SHEETS—SHEET 6.

Fig. 6

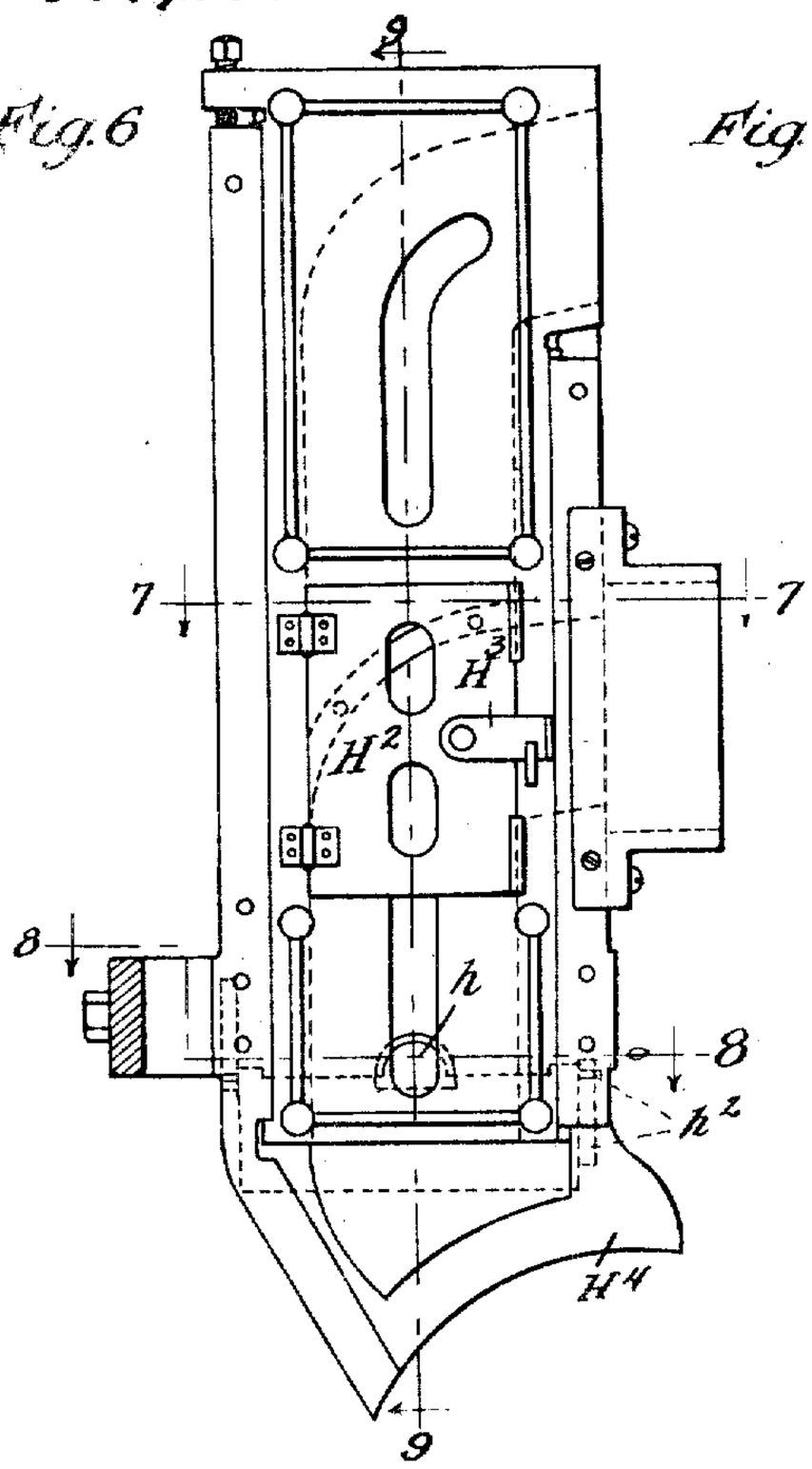
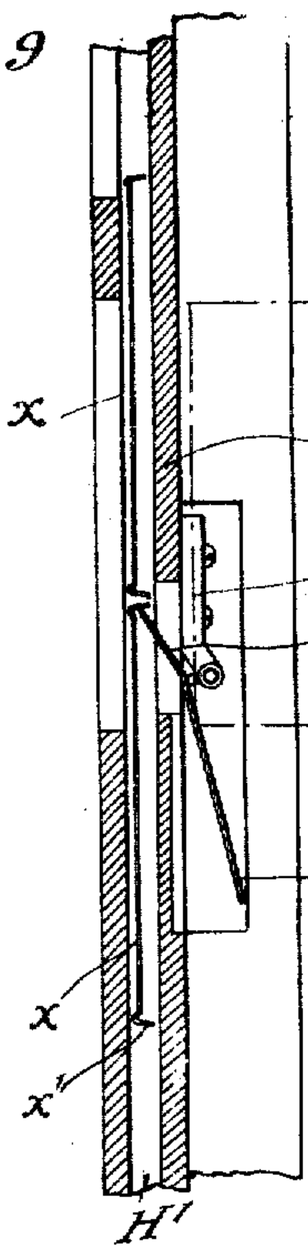


Fig. 9



H

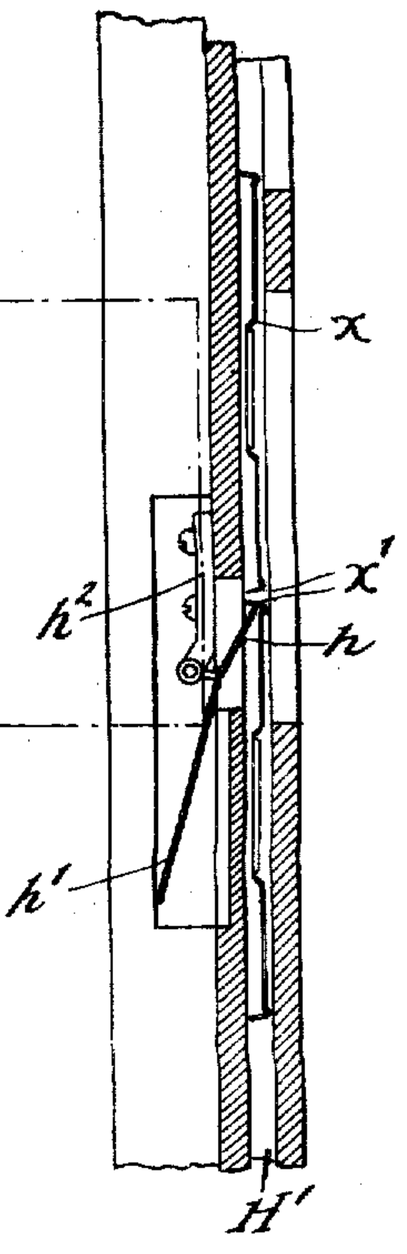


Fig. 7

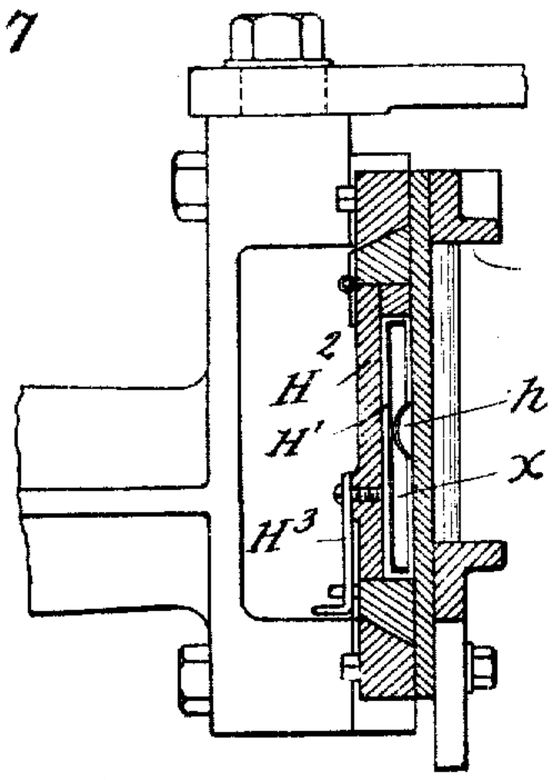
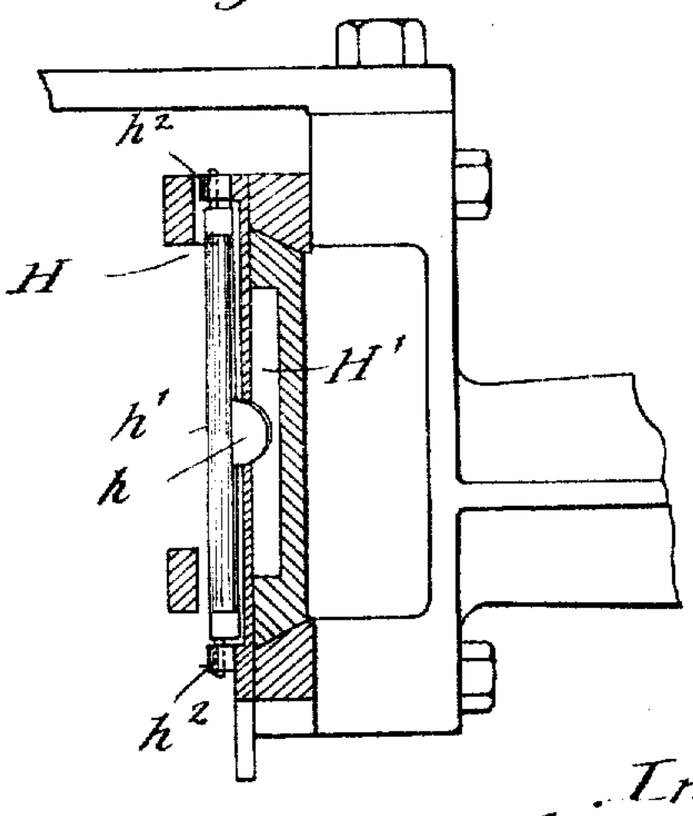


Fig. 8



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UNITED STATES PATENT OFFICE.

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CAN-HEADING MACHINE.

No. 907,259. Specification of Letters Patent. Patented Dec. 22, 1908.

Application filed February 27, 1905. Serial No. 247,513.

To all whom it may concern:

Be it known that I, AUGUSTUS LOTZ, a citizen of the United States, residing in San Francisco, in the county of San Francisco and State of California, have invented a new and useful Improvement in Can-Heading Machines, of which the following is a specification.

My invention relates to improvements in can heading machines.

The object of my invention is to provide a can heading machine, of a simple, efficient and durable construction, by means of which tight, externally fitting can heads may be automatically, rapidly and cheaply applied to the can bodies with certainty and accuracy and without danger of mutilating or injuring the can heads or can bodies.

My invention consists in the means I employ to practically accomplish this object or result and herein shown and described, and particularly specified in the claims.

In the accompanying drawing forming a part of this specification, Figure 1 is a front elevation of a can heading machine embodying my invention; Fig. 2 is a central vertical longitudinal section; Fig. 3 is a vertical cross section on line 3—3 of Fig. 1; Fig. 4 is an enlarged detail longitudinal section through one set of heading jaws; Fig. 5 is a detail plan view of the parts shown in Fig. 4, the same being in part a horizontal section on line 5—5 of Fig. 4; Fig. 6 is a detail elevation showing the can head chute or hopper; Fig. 7 is a section on line 7—7 of Fig. 6; Fig. 8 is a section on line 8—8 of Fig. 6; Fig. 9 is a vertical section of the can head and can body chutes on line 9—9 of Fig. 6; Fig. 10 is a cross section on line 10—10 of Fig. 4, and Fig. 11 is a detail view of the cam G.

In the drawing A represents the frame of the machine.

B represents a continuously revolving can heading jaw carrier, furnished with a series of pairs of reciprocating heading jaw carrying slides C C^1, adapted to reciprocate independently of each other and longitudinally of the axis of the carrier B, in suitable bearings or guides *b* on the carrier, as the carrier rotates continuously. One of the slides C, of each pair C C^1, has secured to it a heading jaw or half mold D, and the other slide C^1, of each pair has a corresponding heading jaw or half mold D^1 secured to it, and through which the other slide C reciprocates, so that the two heading jaws D D^1 may be made to approach each other as the slides C C^1 reciprocate. Each of the heading jaws D D^1 is furnished with a back plate *d* for the can head *x*, to bear against the can head, and cause the same to be forced upon the can body as the heading jaws reciprocate to and from each other. The semi-circular mold portion d^1 of each heading jaw D D^1 is, for convenience of manufacture, formed in a separate piece and removably secured to its jaw D or D^1. The half mold d^1 is preferably provided with a beveled or flaring face d^2 to facilitate the guiding of the can head and can body together, and also with a recess or enlargement d^3 to receive the flange x^1 of the can head *x* and cause the same to telescope with the can body X.

F is a heading jaw or half mold hinged by a transverse axis or pivot *f* to the heading jaw D, and adapted to be opened and closed, and F^1 is a corresponding heading jaw or half mold mounted upon and coöperating with the other heading jaw D^1. Each of the heading jaws F and F^1 is provided with a beveled or flaring face f^1, and with a recess or enlargement f^2 to accommodate the can head flange, the same corresponding in these respects to the heading jaws D D^1. The heading jaws F F^1 are opened in respect to the heading jaws D D^1 to permit the can body and can heads to automatically feed into the heading jaws D D^1 when the same pass under the can head and can body chutes or hoppers, and are then closed so as to cause the same to coöperate with the heading jaws D D^1 in sizing and rounding up the can body and in guiding the can heads and can bodies together, as the heading jaws are reciprocated or forced toward each other to head the can. The heading jaws F F^1 are thus automatically opened and closed as the carrier B rotates continuously, by means of a stationary cam G on the frame of the machine engaging a heading jaw operating lever f^3 pivoted to the heading jaw D or D^1, as the case may be, and provided with an adjustable arm or member f^4 which is pivotally connected by a pin f^5, with a link f^6 hinged at f^7 to the heading jaw F or F^1, as the case may be. The adjustable arm or member f^4 of the operating lever f^3 is

adjusted to regulate the throw of the hinged heading jaw F or F¹ by means of a clamp screw f^8 and a set screw f^9. The operating lever f^3 for each hinged heading jaw is furnished with an anti-friction roller f^{10} to engage the stationary cam G. Two stationary cams G are employed, one for each set or series of hinged heading jaws F or F¹.

The reciprocating slides C C¹, which carry the two sets of heading jaws D F, D¹ F¹, are operated by a pair of stationary cams G¹ G¹ on the frame of the machine, the slides C having anti-friction rollers C² mounted therein, which engage the stationary cam G¹, and the other reciprocating slide C¹ of each pair having corresponding anti-friction rollers which engage its operating cam.

H is the can body feed chute and H¹ H¹ the can head feed chutes, the three chutes being in line with and adjacent to each other, so that the two can heads feed down at the ends of the can body and in line therewith. To cause two can heads, one at each end of the can body, to feed down into the heading jaws with the can body and to prevent the can heads feeding into the heading jaws unless a can body also is simultaneously fed into the same, I provide each of the can head chutes with a movable can head feed stop or trigger h, having an arm h^1 projecting into the can body chute in the path of the can body, so that as the can body feeds down its chute into the heading jaws beneath, the can body itself will operate or move the can head feed stop or trigger, and thus release a can head. The movable can head feed stops or triggers h h are hinged or pivoted to brackets h^2 secured to the partitions h^3 which separate the can body and can head chutes. Each of the can head chutes is preferably provided with a hinged door H², having a latch H³, which is of convenience in removing the can heads from the chutes in case they should become clogged.

To guide or hold the can heads in position in the heading jaws D D¹, before or while the hinged heading jaws F F¹ close around the same and prevent the can heads from tilting toward each other, I provide the can head chutes with a laterally projecting wing H⁴, as will be readily understood from Fig. 3 of the drawing. And to hold the can body in position in the inner or lower heading jaws D D¹ before and while the hinged heading jaws F F¹ are closing around the same, and to partially round up the can body, if it should be very much distorted out of shape, before the hinged jaws F F¹ close around the same, I provide a stationary can body guide or shoe M, mounted on the frame of the machine, and curved substantially concentric with the path of the can bodies as they are carried around in the heading jaws mounted on the continuously revolving carrier B.

To secure certainty of the discharge of the headed cans from the heading jaws D D¹, as the carrier for the same revolves continuously, and to prevent any possibility of the cans sticking in the half molds or heading jaws D D¹, I provide the machine with a can discharge arm N, which is secured to the stationary frame of the machine, and insures the discharge of the headed cans into the can discharge chute P, which is secured to the frame beneath the carrier B.

To enable my can heading machine to be readily changed or adjusted for operation on cans of different lengths or sizes, I make the stationary cams G G and G¹ G¹ in separate pieces from the frame A, and secure the same removably to adjustable frame members A¹ A¹, which are furnished with adjustable screws A² A² so that the position of these cams may be readily adjusted, or the cams removed and replaced by others.

The heading jaw carrier B is continuously rotated, as required, by a gear B¹ thereon, which meshes with a gear r on the driving shaft R, which is furnished with a driving pulley r^1 adapted to be clutched to the shaft.

The inner heading jaws D D¹ have segmental curved bridges or extensions d^4 concentric with the axis of the carrier B provided with guide grooves or channels d^5 to support and guide the can heads in the can head chutes as the successive heading jaws D D D and D¹ D¹ D¹ pass under the chutes one after another, said bridges or curved extensions d^4 extending between adjacent heading jaws, as will be readily understood from Figs. 3 and 5 of the drawing.

I claim:

1. In a can heading machine, the combination with a continuously rotating heading jaw carrier furnished with a plurality of pairs of reciprocating slides, heading jaws carried by said slides, transversely hinged heading jaws coöperating with the heading jaws on said slides, stationary cams for operating said slides, stationary cams for opening and closing said transversely hinged heading jaws, and adjustable frame members upon each of which two of said stationary cams are mounted, substantially as specified.

2. In a can heading machine, the combination with a continuously rotating heading jaw carrier furnished with a plurality of pairs of reciprocating slides, heading jaws carried by said slides, transversely hinged heading jaws coöperating with the heading jaws on said slides, stationary cams for operating said slides, stationary cams for opening and closing said transversely hinged heading jaws, a can body feed chute and a pair of can head chutes adjacent to and in line with said can body feed chute, and can head feed stops or triggers having arms projecting into the can body chute in the path

of the can bodies and operated by the passing can body, substantially as specified.

3. In a can heading machine, the combination with a continuously rotating heading jaw carrier furnished with a plurality of pairs of reciprocating slides, heading jaws carried by said slides, transversely hinged heading jaws coöperating with the heading jaws on said slides, stationary cams for operating said slides, stationary cams for opening and closing said transversely hinged heading jaws, a can body feed chute and can head feed chutes adjacent to and in line with said can body feed chute, said can head feed chutes having laterally projecting wings to hold the can heads upright and in position in the lower or inner heading jaws before the hinged heading jaws close around the same, substantially as specified.

4. In a can heading machine, the combination with a continuously rotating heading jaw carrier furnished with a plurality of pairs of reciprocating slides, heading jaws carried by said slides, transversely hinged heading jaws coöperating with the heading jaws on said slides, stationary cams for operating said slides, stationary cams for opening and closing said transversely hinged heading jaws, a can body feed chute and can head feed chutes adjacent to and in line with said can body feed chute each of said can head feed chutes having a laterally projecting wing, and a stationary can body guide or guard for holding the can bodies in position in the lower or inner heading jaws before the hinged heading jaws close around the same, substantially as specified.

5. In a can heading machine, the combination with a continuously rotating heading jaw carrier furnished with a plurality of pairs of reciprocating slides, heading jaws carried by said slides, transversely hinged heading jaws coöperating with the heading jaws on said slides, stationary cams for operating said slides, stationary cams for opening and closing said transversely hinged heading jaws, each of said hinged heading jaws having a pivoted connecting link and an operating lever engaged by said cam and provided with an adjustable arm or member, substantially as specified.

6. In a can heading machine, the combination with a can body feed chute and a pair of can head feed chutes adjacent to and in line with said can body feed chute, and can head feed stops having arms projecting into the can body chute in the path of the can bodies and operated by the passing can body in the can body chute, and a continuously rotating heading jaw carrier furnished with heading jaws into which the can bodies and can heads are delivered by said can body and can head chutes, the inner heading jaws on said carrier having bridges extending between adjacent jaws to support the can heads as the jaws pass one after another under the can head chute, substantially as specified.

7. In a can heading machine, the combination with a can body feed chute, of a can head feed chute adjacent to and in line with said can body feed chute, and a can head feed stop having an arm projecting into the can body chute in the path of the can bodies and operated by the passing can body in the can body chute, and a continuously rotating heading jaw carrier furnished with heading jaws into which the can bodies and can heads are delivered by said can body and can head chutes, the inner heading jaws on said carrier having bridges extending between adjacent jaws to support the can heads as the jaws pass one after another under the can head chute, substantially as specified.

8. In a can heading machine, the combination with a continuously rotating heading jaw carrier furnished with a plurality of reciprocating slides, heading jaws carried by said slides, transversely hinged heading jaws coöperating with the heading jaws on said slides, a stationary cam for operating said slides, a stationary cam opening and closing said transversely hinged heading jaws, and an adjustable frame member upon which both of said stationary cams are mounted, substantially as specified.

9. In a can heading machine, the combination with a continuously moving heading jaw carrier furnished with a plurality of reciprocating slides, heading jaws carried by said slides, transversely hinged heading jaws cooperating with the heading jaws on said slides, a stationary cam for operating said slides, a stationary cam opening and closing said transversely hinged heading jaws, an adjustable frame member upon which both of said stationary cams are mounted, and a screw for adjusting said adjustable frame member, substantially as specified.

10. In a can heading machine, the combination with a continuously rotating heading jaw carrier furnished with a plurality of reciprocating slides, heading jaws carried by said slides, transversely hinged heading jaws coöperating with the heading jaws on said slides, a stationary cam for operating said slides, a stationary cam for opening and closing said transversely hinged heading jaws, a can body feed chute, a can head feed chute adjacent to and in line with said can body feed chute, said can head feed chute having a laterally projecting wing to hold the can heads upright and in position in the lower or inner heading jaws before the hinged heading jaws close around the same as the carrier rotates, each of said hinged heading jaws having a pivoted connecting link and an operating lever provided with an adjustable arm or member, substantially as specified.

11. In a can heading machine, the combination with a continuously rotating heading jaw carrier furnished with a plurality of reciprocating slides, heading jaws carried by said slides, transversely hinged heading jaws coöperating with the heading jaws on said slides, a stationary cam for operating said slides, a stationary cam for opening and closing said transversely hinged heading jaws, each of said hinged heading jaws having a pivoted connecting link and an operating lever engaged by said last mentioned cam, and provided with an adjustable arm or member, substantially as specified.

12. In a can heading machine, the combination with a continuously rotating heading jaw carrier furnished with a plurality of reciprocating slides, heading jaws carried by said slides, transversely hinged heading jaws coöperating with the heading jaws on said slides, a stationary cam for operating said slides, a stationary cam for opening and closing said transversely hinged heading jaws, each of said hinged heading jaws having a pivoted connecting link and an operating lever engaged by said last mentioned cam and provided with an adjustable arm or member, and an adjustable frame member A^1 to which both said cams are secured, substantially as specified.

13. In a can heading machine, the combination with a continuously rotating heading jaw carrier furnished with a plurality of reciprocating slides, heading jaws carried by said slides, transversely hinged heading jaws coöperating with the heading jaws on said slides, a stationary cam for operating said slides, a stationary cam for opening and closing said transversely hinged heading jaws, each of said hinged heading jaws having a pivoted connecting link and an operating lever engaged by said last mentioned cam and provided with an adjustable arm or member, an adjustable frame member A^1 to which both said cams are secured, and an adjusting screw for said adjustable frame member A^1, substantially as specified.

14. In a can heading machine, the combination with a continuously rotating heading jaw carrier furnished with a plurality of reciprocating slides, heading jaws carried by said slides, transversely hinged heading jaws coöperating with said heading jaws on said slides, a stationary cam for opening and closing said transversely hinged heading jaws, each of said hinged heading jaws having a pivoted connecting link and an operating lever provided with an adjustable arm or member, substantially as specified.

15. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws, stationary continuous cam rings for reciprocating the sets of heading jaws and stationary continuous cam rings for opening and closing the outer jaws of the two sets as the carrier rotates, substantially as specified.

16. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws and stationary continuous cam rings for reciprocating the sets of heading jaws, substantially as specified.

17. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head, and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws and stationary continuous cam rings for opening and closing the outer jaws of the two sets as the carrier rotates, substantially as specified.

18. In a can heading machine, the combination with a continuously moving heading jaw carrier, of a plurality of opposing pairs of reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a plate to engage the can head, and the outer jaw of each set having an opening and closing movement in respect to its inner jaw, the opening movement of each of the two opposing outer jaws separating such outer jaws from each other to admit the can body between them into the inner jaws, and stationary continuous cam rings for opening and closing the outer jaws as the carrier rotates, substantially as specified.

19. In a can heading machine, the combination with a continuously moving heading jaw carrier, of a plurality of opposing pairs of reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a plate to engage the can head, and the outer jaw of each set having an opening and closing movement in respect to its inner jaw, the opening movements of the two opposing outer jaws separating such outer jaws

from each other to admit the can body between them into the inner jaws, stationary continuous cam rings for opening and closing the outer jaws as the carrier rotates and stationary continuous cam rings for reciprocating the sets of heading jaws as the carrier rotates, substantially as specified.

20. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws, stationary continuous cam rings for reciprocating the sets of heading jaws and stationary continuous cam rings for opening and closing the outer jaws of the two sets as the carrier rotates and can head and can body chutes, substantially as specified.

21. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws and stationary continuous cam rings for reciprocating the sets of heading jaws, and can head and can body chutes, substantially as specified.

22. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head, and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws, stationary continuous cam rings for opening and closing the outer jaws of the two sets as the carrier rotates, and can head and can body chutes, substantially as specified.

23. In a can heading machine, the combination with a continuously moving heading jaw carrier, of a plurality of opposing pairs of reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a plate to engage the can head, and the outer jaw of each set having an opening and closing movement in respect to its inner jaw, the opening movement of each of the two opposing outer jaws separating such outer jaws from each other to admit the can body between them into the inner jaws, stationary continuous cam rings for opening and closing the outer jaws as the carrier rotates, and can head and can body chutes, substantially as specified.

24. In a can heading machine the combination with a continuously moving heading jaw carrier, of a plurality of opposing pairs of reciproacting sets of heading jaws on the carrier, the inner heading jaw of each set having a plate to engage the can head, and the outer jaw of each set having an opening and closing movement in respect to its inner jaw, the opening movement of each of the two opposing outer jaws separating such outer jaws from each other to admit the can body between them into the inner jaws, stationary continuous cam rings for opening and closing the outer jaws as the carrier rotates, stationary continuous cam rings for reciprocating the sets of heading jaws as the carrier rotates and can head and can body chutes, substantially as specified.

25. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws, stationary continuous cam rings for reciprocating the sets of heading jaws and stationary continuous cam rings for opening and closing the outer jaws of the two sets as the carrier rotates, and can head and can body chutes, the inner jaws having segmental curved bridges extending between adjacent jaws to support the can heads in the can head chutes as said jaws pass under said chutes, substantially as specified.

26. In a can heading machine, the combination with a continuous rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposing open outer jaws, and stationary continuous cam rings for reciprocating the sets of heading jaws and can head and can body chutes, said inner jaws being provided with curved extensions having guide grooves for the can heads, substantially as specified.

27. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier,

the inner heading jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws, stationary continuous cam rings for opening and closing the outer jaws of the two sets as the carrier rotates, can head and can body chutes, and said inner jaws being provided with curved extensions having guide grooves for the can heads, substantially as specified.

28. In a can heading machine, the combination with a continuously moving heading jaw carrier, of a plurality of opposing pairs of reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a plate to engage the can head, and the outer jaw of each set having an opening and closing movement in respect to its inner jaw, the opening movement of each of the two opposing outer jaws separating such outer jaws from each other to admit the can body between them into the inner jaws, stationary continuous cam rings for opening and closing the outer jaws as the carrier rotates, and can head and can body chutes, said inner jaws being provided with curved extensions having guide grooves for the can heads, substantially as specified.

29. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws, stationary continuous cam rings for reciprocating the sets of heading jaws, and stationary continuous cam rings for opening and closing the outer jaws of the two sets as the carrier rotates, and adjustable frame members upon which said stationary cams are mounted, substantially as specified.

30. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposing open outer jaws and stationary continuous cam rings for reciprocating the sets of heading jaws, and adjustable frame members upon which said stationary cams are mounted, substantially as specified.

31. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws and stationary continuous cam rings for opening and closing the outer jaws of the two sets as the carrier rotates, and adjustable frame members upon which said stationary cams are mounted, substantially as specified.

32. In a can heading machine, the combination with a continuously moving heading jaw carrier, of a plurality of opposing pairs of reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a plate to engage the can head, and the outer jaw of each set having an opening and closing movement in respect to its inner jaw, the opening movement of each of the two opposing outer jaws separating such outer jaws from each other to admit the can body between them into the inner jaws, stationary continuous cam rings for opening and closing the outer jaws as the carrier rotates, and adjustable frame members upon which said stationary cams are mounted, substantially as specified.

33. In a can heading machine, the combination with a continuously moving heading jaw carrier, of a plurality of opposing pairs of reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a plate to engage the can head, and the outer jaw of each set having an opening and closing movement in respect to its inner jaw, the opening movement of each of the two opposing outer jaws separating such outer jaws from each other to admit the can body between them into the inner jaws, stationary continuous cam rings for opening and closing the outer jaws as the carrier rotates, and stationary cam rings for reciprocating the sets of heading jaws as the carrier rotates, and adjustable frame members upon which said stationary cams are mounted, substantially as specified.

34. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws, can body and can head chutes, said inner jaws having curved extensions bridging the space between adjacent inner jaws to support the can heads in the chute, substantially as specified.

35. In a can heading machine, the combi-

nation with a continuously rotating heading jaw carrier, of a plurality of reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws, can body and can head chutes, said inner jaws having curved extensions bridging the space between adjacent inner jaws to support the can heads in the chute, and said curved extensions having guide channels for the can heads, substantially as specified.

36. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws, can body and can head chutes, said inner jaws having curved extensions bridging the space between adjacent inner jaws to support the can heads in the chute, and a stationary continuous grooved cam ring for reciprocating the sets of heading jaws, substantially as specified.

37. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposing open outer jaws, can body and can head chutes, said inner jaws having curved extensions bridging the space between adjacent inner jaws to support the can heads in the chute, and a stationary continuous grooved cam ring for reciprocating the sets of heading jaws, substantially as specified.

38. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposite open outer jaws, can body and can head chutes, said inner jaws having curved extensions bridging the space between adjacent inner jaws to support the can heads in the chute, said curved extensions having guide channels for the can heads, and a stationary continuous grooved cam ring for opening and closing the outer jaws of each set, substantially as specified.

39. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposing open outer jaws, can body and can head chutes, said inner jaws having curved extensions bridging the space between adjacent inner jaws to support the can heads in the chute, said curved extensions having guide channels for the cam heads, a stationary continuous grooved cam ring for reciprocating the sets of heading jaws, and a stationary continuous grooved cam ring for opening and closing the outer jaws of each set, substantially as specified.

40. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the two opposing open outer jaws, can body and can head chutes, said can head chute having a laterally projecting wing to hold the can head upright and in position in the inner heading jaw, substantially as specified.

41. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier, the inner heading jaw of each set having a back to engage the can head and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the can body and can head chutes, said can head chute having a laterally projecting wing to hold the can head upright and in position in the inner heading jaw, and said inner heading jaws having segmental extensions bridging the space between adjacent inner jaws to support the can heads, substantially as specified.

42. In a can heading machine, the combination with a continuously rotating heading jaw carrier, of a plurality of opposing reciprocating sets of heading jaws on the carrier,

the inner heading jaw of each set having a back to engage the can head, and the outer jaw of each set having an opening and closing movement in respect to its inner jaw away from the opposite outer jaw to admit the can body lengthwise between the can body and can head chutes, said can head chute having a laterally projecting wing to hold the can head upright and in position in the inner heading jaw, said inner heading jaws having segmental extensions bridging the space between adjacent inner jaws to support the can heads, and said segmental extensions having guide grooves for the can heads, substantially as specified.

AUGUSTUS LOTZ.

Witnesses:
FRANK RUDOLPHI.
LEMUEL A. WELLES.