G. W. WEBER, F. EBERHART & E. V. SWANGREN.

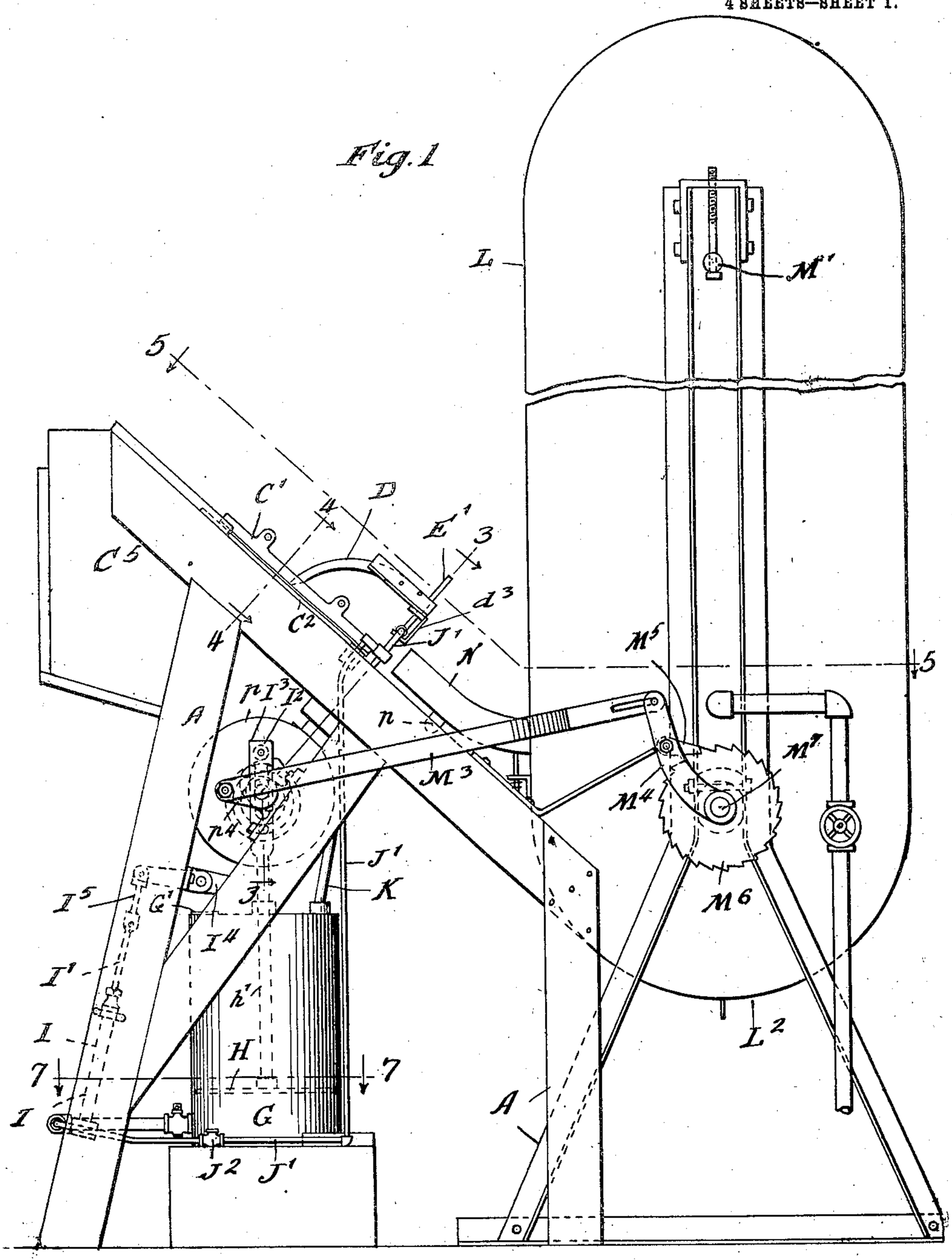
CAN COVER COATING MACHINE.

APPLICATION FILED OCT. 31, 1906.

938,529. Patented Nov. 2, 1909.

4 SHEETS—SHEET 1.

Fig. 1



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4 SHEETS—SHEET 2.

Fig. 8

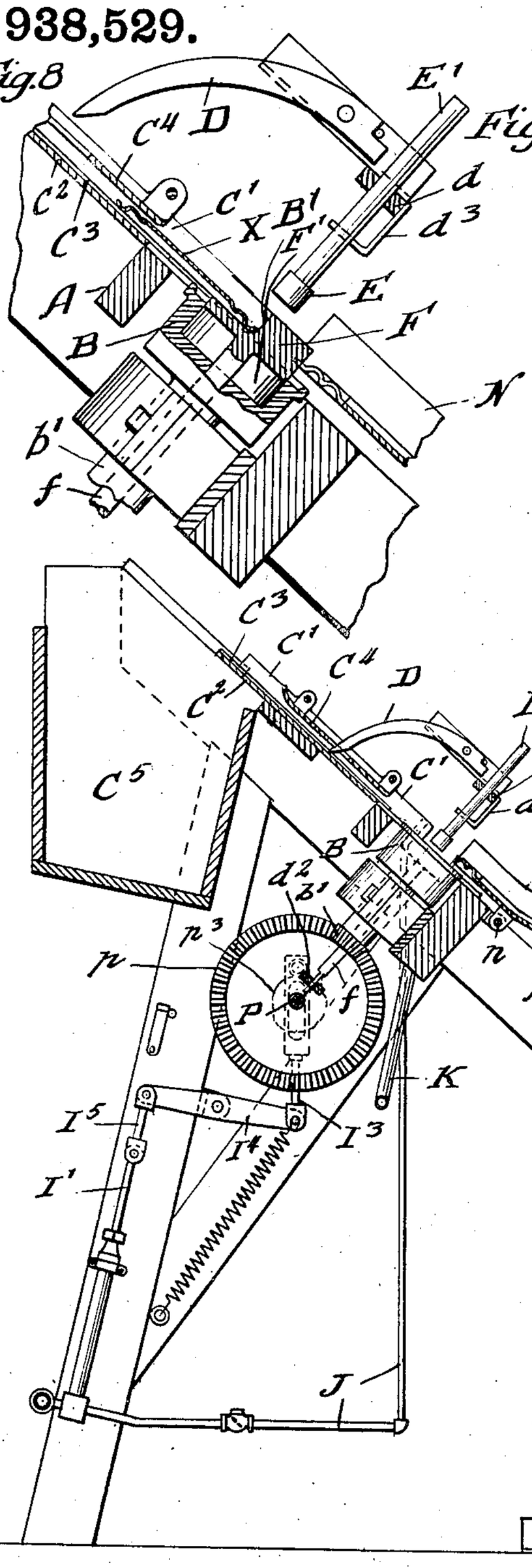
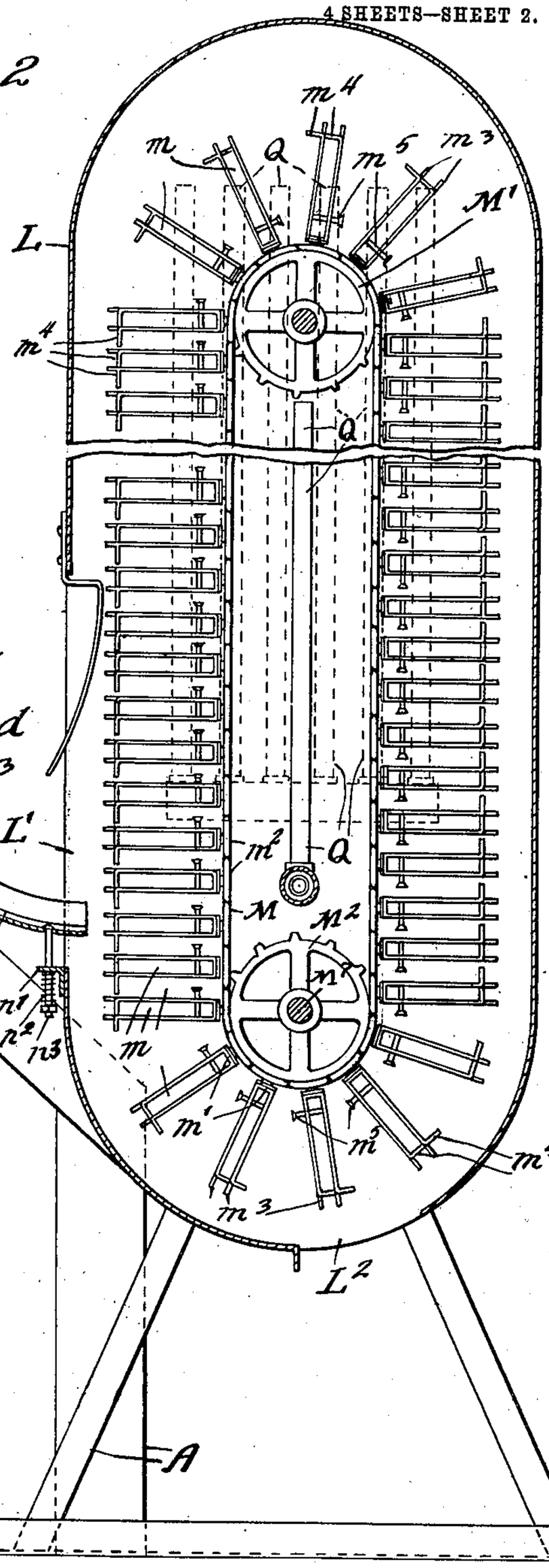


Fig. 2



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4 SHEETS—SHEET 3.

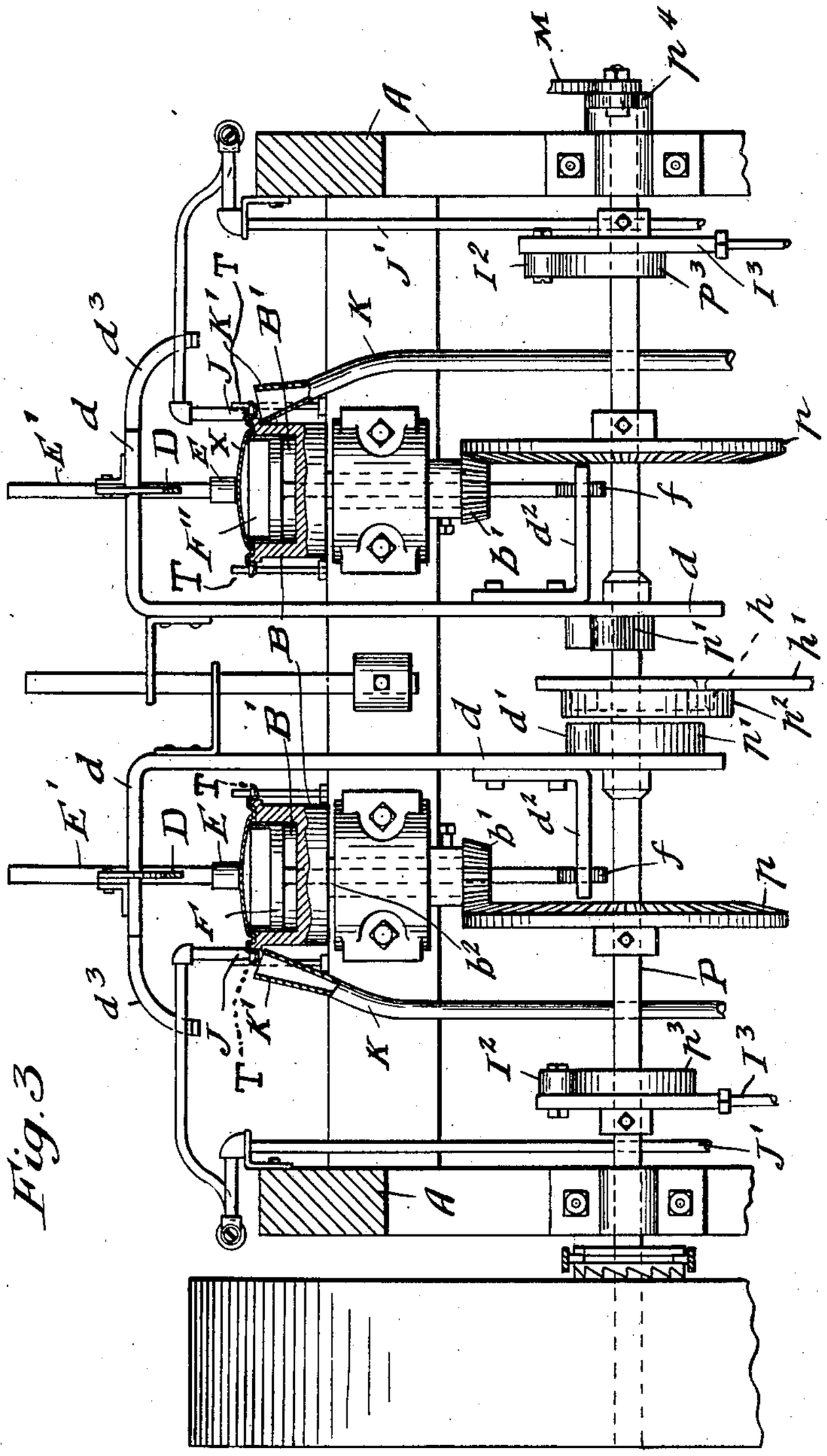

Fig. 3.

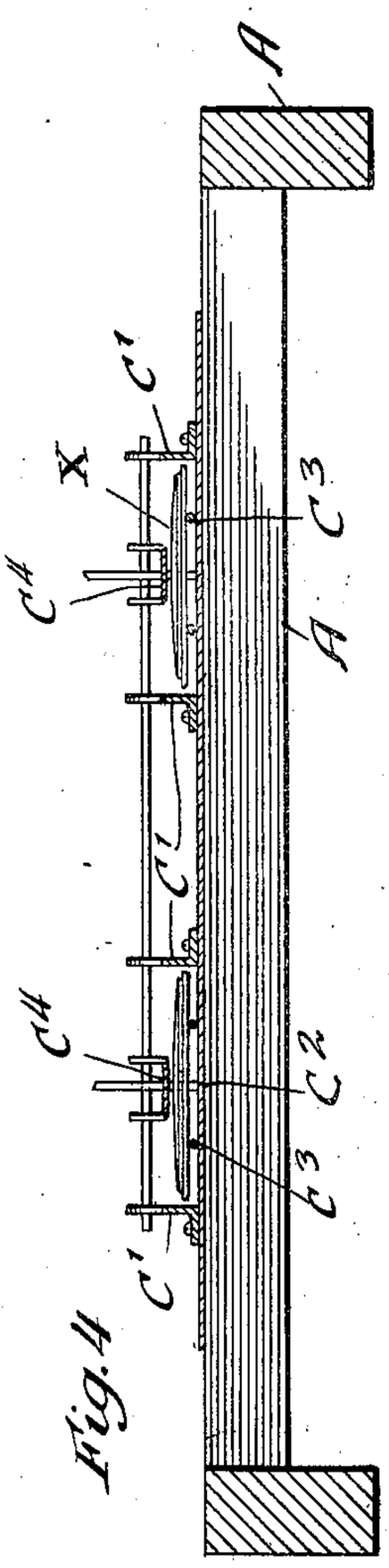

Fig. 4.

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4 SHEETS—SHEET 4.

Fig. 5

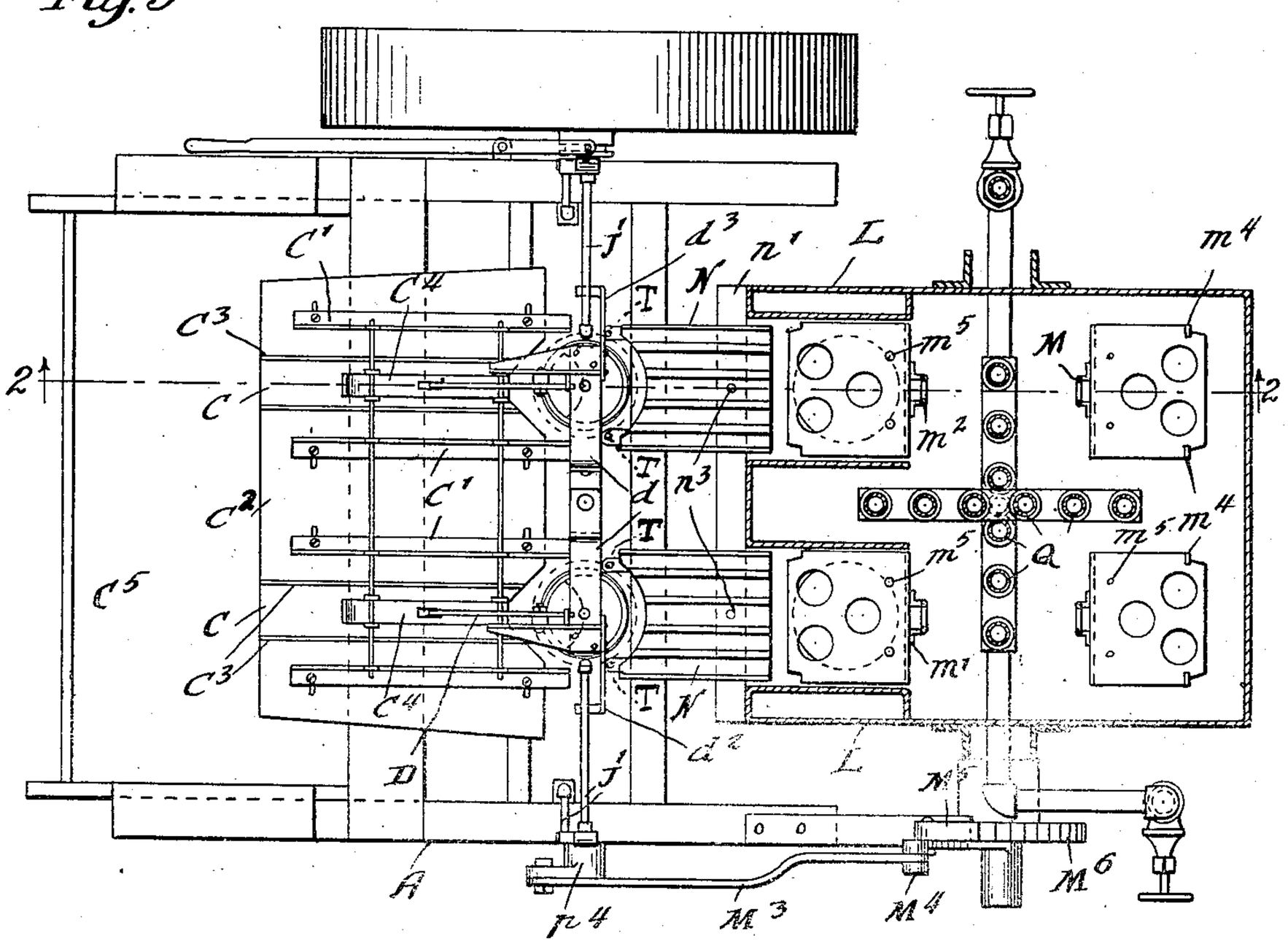


Fig. 6

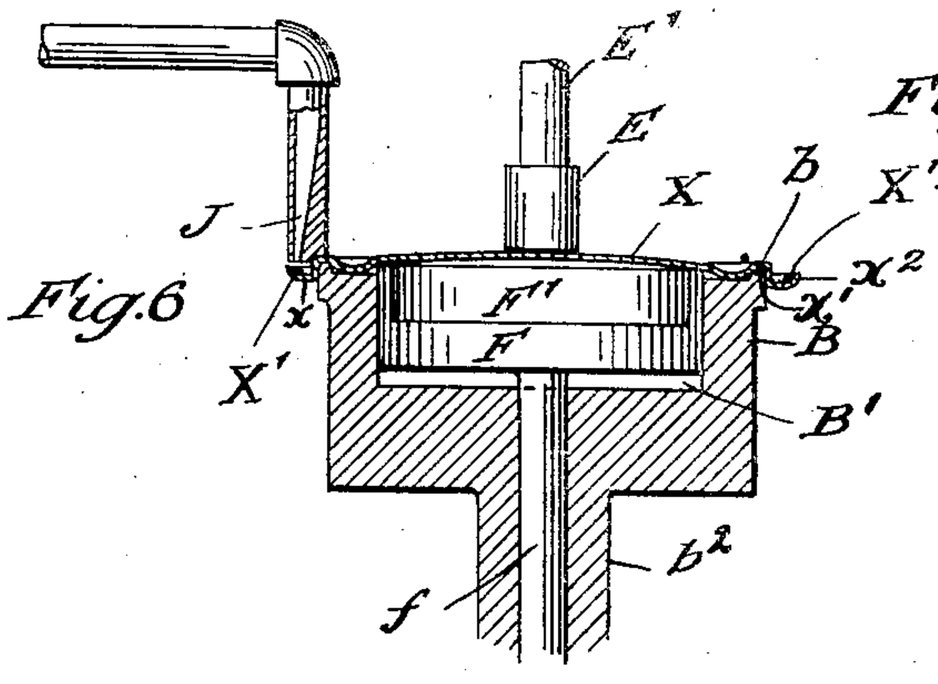
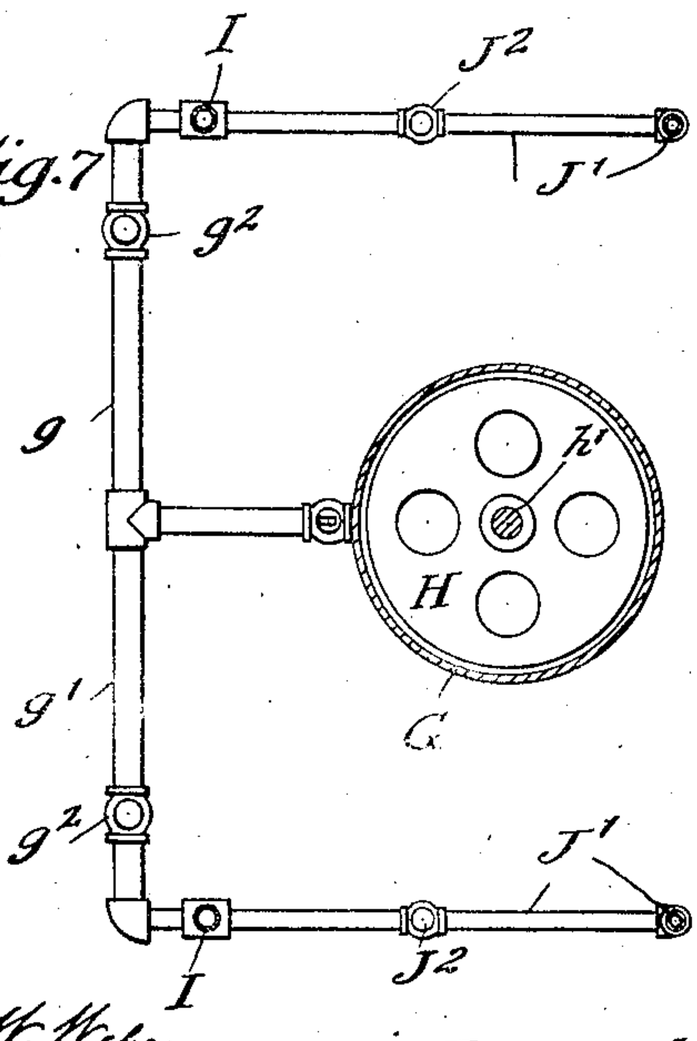


Fig. 7



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UNITED STATES PATENT OFFICE.

GEORGE W. WEBER AND FELIX EBERHART, OF NEW YORK, N. Y., AND EDWIN V. SWANGREN, OF MAYWOOD, ILLINOIS, ASSIGNORS TO AMERICAN CAN COMPANY, OF NEW YORK, N. Y., A CORPORATION OF NEW JERSEY.

CAN-COVER-COATING MACHINE.

938,529. Specification of Letters Patent. Patented Nov. 2, 1909.

Application filed October 31, 1906. Serial No. 341,387.

To all whom it may concern:

Be it known that we, GEORGE W. WEBER and FELIX EBERHART, citizens of the United States, residing in the city of New York, county of New York, and State of New York, and EDWIN V. SWANGREN, a citizen of the United States, residing in Maywood, in the county of Cook and State of Illinois, have invented a new and useful Improvement in Can-Cover-Coating Machines, of which the following is a specification.

Our invention relates to machines for coating or lining the seaming flanges of can heads or covers with rubber cement or other packing, so that when the heads or covers are secured on the can by a double seam or other unsoldered seam, the seam or joint will be hermetically tight.

The object of our invention is to provide an automatic machine of a simple, efficient and durable construction by means of which the packing composition may be rapidly and economically applied to the seaming flanges of the can heads or covers and dried thereon in proper position.

A further object is to provide a machine that will do this work without subjecting the liquid packing composition to oxidation or deterioration prior to its application to the seaming flange of the cover.

A further object is to provide an automatic machine that will do this work and apply the liquid or semi liquid packing composition to the outer peripheral portion only of the seaming flange, that is to say at the portion of the seaming flange where the packing is required in order to produce the hermetic joint or seam, and in the minimum amount required to produce a tight or hermetic seam.

The machine embodying our invention comprises in coöperative combination, a rotating can cover holder preferably of less diameter than the cover so that the seaming flange of the cover will project beyond the periphery of the holder, a feed chute or passage for the can covers, preferably inclined, a movable feeder for the can covers, a reciprocating chuck for clamping the can cover on the rotary holder, a reciprocating ejector for delivering or freeing the coated cover from its rotary holder, the same being preferably provided with a stop shoulder to arrest the forward movement of the can cover in the feed chute or passage, a closed tank or receptacle for the packing composition, preferably rubber cement, a movable agitator or dasher therein for keeping the composition in proper mixed condition, an intermittently operated pump or feed device for the packing composition for delivering it in measured quantity to the seaming flange of the can cover, a discharge nozzle for delivering the packing composition in a fine stream upon or against the outer portion of the seaming flange of the rotating cover, a return pipe located beneath the discharge nozzle to receive and return to the tank the charge of packing composition in case there is no can cover on the rotary holder to receive it and to receive and return to the tank any drippings from the seaming flange of the cover if the can cover is in place on the rotary holder, a drying chamber, a movable, preferably intermittently movable, can cover carrier in the drier, furnished with a series of can cover holding shelves or pockets, and a chute or device for automatically delivering the coated can covers from the rotary can cover holder to the carrier of the drier. To increase the capacity of the machine, a plurality of can cover carriers are mounted in the drying chamber and a plurality of rotating can cover holders, can cover feed chutes and packing composition discharge nozzles are employed.

Our invention consists in the novel construction of parts and devices and in the novel combinations of parts and devices herein shown and described and more particularly specified in the claims.

In the accompanying drawing forming a part of this specification, Figure 1 is a side elevation of a can head or cover coating machine embodying our invention. Fig. 2 is an elevation partly in vertical section through one of the can cover feed chutes. The section line upon which Fig. 2 is taken is marked 2—2 on Fig. 5. Fig. 3 is a detail cross section on line 3—3 of Fig. 1. Fig. 4 is a detail cross section on line 4—4 of Fig. 1. Fig. 5 is a section on the broken line 5—5 of Fig. 1. Fig. 6 is an enlarged detail section, centrally through one of the rotary can cover holders and showing the discharge nozzle for the packing composition in section. Fig. 7 is a detail section partly in plan on line

7—7 of Fig. 1 and Fig. 8 is an enlarged detail section through one of the holders, showing the ejector in its upper position.

In the drawing, similar letters of reference indicate like parts throughout all the figures.

In the drawing, A represents the frame of the machine.

B B are the rotary holders for the can heads or covers, any desired number of them being arranged in a transverse row, but in the drawing for convenience we have only shown two. Each of the holders B is preferably of less diameter than the can cover X so that the seaming flange *x* thereof will project beyond the periphery of the holder. The holder B has its upper or cover receiving face *b* preferably shaped to fit the countersink shape x^1 of the cover X.

C C are the can head or cover feed chutes, the same being preferably arranged in an inclined position as illustrated in the drawing. Each of the chutes or feed passages C preferably consists of side guides C^1 C^1 and a bottom plate C^2 furnished with raised ribs or rails C^3 and an upper guide or plate C^4.

C^5 is the receptacle for the can heads or covers from which they are placed by the operator in the feed chute or passage C.

Each of the can head feed chutes or passages C is furnished with an intermittently movable can head or cover feeder D to cause the can heads or covers to feed or move down the chute or passage C one by one to the rotary holder B. The feeder D preferably consists of a finger projecting into the feed passage C and adapted to be withdrawn to permit the feed or passage of a can cover at intervals as required.

Coöperating with each of the rotary can cover holders or chucks B is an upper movable chuck or clamp E, preferably rotatable on its movable spindle E^1. The feeder D and chuck or clamp E are preferably connected together and operate in unison. Each of the rotary holders B is furnished with a central recess B^1 to receive the reciprocating ejector F by which the coated cover is freed or discharged from the rotary holder. Each of the reciprocating ejectors F is preferably furnished with an upwardly projecting stop shoulder F^1 against which the can cover X strikes after being released by the feeder D as it slides down the chute or feed passage C, and by which the cover is caused to backwardly rebound slightly while the ejector F withdraws its stop shoulder F^1 below the face *b* of the rotary holder B, and while the upper chuck or clamp E moves down to clamp and seat the cover X on the rotary holder.

G is the closed tank or receptacle containing the packing composition X^1 in a liquid or semi-liquid form, this tank or receptacle having a closed cover G^1 to keep the composition substantially free from air and deterioration incident thereto. The tank or receptacle G is furnished with a movable agitator or mixer H, preferably in the form of an up and down moving dasher to keep the liquid or semi-liquid composition in proper condition for efficient operation. The packing composition is forced in measured quantities from the tank G intermittently upon the seaming flange *x* of the rotating can cover X through a small discharge nozzle J, arranged above and outside of the rotary holder B, by an intermittently operated feed device I, the same being preferably a pump with a reciprocating plunger I^1, one pump being preferably employed for each of the discharge nozzles J. The packing composition flows from the tank or receptacle G to the pumps I through the feed pipes *g* g^1, the latter being furnished with check valves g^2, and from the pumps to the discharge nozzles J through the feed pipes J^1 which are furnished with check valves J^2. The check valves g^2 permit the liquid to flow from the tank toward the pumps, but not in the reverse direction, and the check valves J^2 permit the liquid to flow toward the discharge nozzles J, but not backward therefrom. The discharge nozzle J is arranged directly over the seaming flange *x* of the cover X on the holder B and so that the liquid or plastic packing composition is discharged or delivered in a fine stream directly against the outer portion x^2 only of the seaming flange *x* of the rotating cover X on the holder B. The packing composition is thus applied at this portion only of the seaming flange *x*. The discharge of the fine stream of packing composition upon the cover flange takes place preferably during one complete revolution only of the holder B and cover X thereon, this being regulated by the coöperative action of the pump piston and rotary holder B, the stroke of the pump piston being timed to make one downward stroke during one revolution of the holder B. By increasing or diminishing the discharge orifice of the nozzle J, a greater or less quantity of packing composition may be applied to each can cover.

K is a return pipe for the packing composition, having its mouth K^1 arranged directly below the discharge nozzle J so that if no cover is on the holder B to receive the charge of packing composition, the same will be returned to the tank G through this return pipe K. The return pipe K also serves to convey back to the tank any drippings or overflow from the cover X.

L is a closed drying chamber, arranged preferably in an upright position so that the carrier of the drier holds the covers in a horizontal position during the drying operation or the chief part thereof. The drying chamber L is furnished with an opening

L^1 in one of its upright sides through which the coated covers are admitted to the drier, and an opening L^2 at its lower end through which the coated and dried covers are discharged from the machine.

M is a movable can cover carrier in the drier, the same being preferably an endless flexible carrier and intermittently moving. The carrier M travels upon upper and lower pulleys or sprocket wheels M^1 M^2. The carrier M is furnished with a series of shelves or pockets *m*, each adapted to receive a single can cover. The cover receiving shelves or pockets *m* are preferably formed of pieces of sheet metal bent to U shape, and each secured at its back portion m^1 to one of the links m^2 of the flexible carrier M so that the limbs m^3 m^3 of each piece of sheet metal will form two shelves or pockets for receiving and holding covers during the drying operation. The limbs m^3 m^3 are preferably furnished with downturned lips m^4 near their outer edges for guiding and holding the covers in place. The U shaped limbs m^3 m^3 are further preferably provided with stop pins m^5 to keep the can covers from coming in contact with the links of the carrier chain.

N is a connecting chute or passageway for delivering the coated can covers from the rotary holder B after being delivered therefrom by the ejector F into the pockets of the carrier of the drier, this connecting chute being preferably curved so that its lower portion delivers the coated cover in a substantially horizontal position onto the shelf of the carrier M. The connecting chute or passageway N is preferably hinged at *n* to the frame and supported at its lower end from the bracket n^1 by a spring n^2 surrounding the guide rod n^3 which extends through the bracket n^1 so that in case a projecting cover on the carrier M should strike the end of the chute N, the latter may yield and thus prevent injury. The required motion may be imparted to the several moving parts of the machine by any suitable operating or connecting mechanism from the driving shaft P, that which I prefer to employ being illustrated in the drawing.

The rotary holders B are preferably continuously rotated from the driving shaft P through spur gears *p* thereon, meshing with spur gears b^1 on the shafts b^2 of the rotary holders. The feeder D and upper chuck or clamp E are preferably operated as required from the driving shaft P by a cam p^1 thereon through the reciprocating connecting bar *d*, which is furnished with a roller d^1 engaging the cam p^1, the feeder D and spindle E^1 of the chuck or clamp E being both connected to this reciprocating bar *d*. The ejector F is preferably also operated from the cam p^1 through an arm d^2 on the reciprocating bar *d*, which engages the stem *f* of the ejector F. The distance nozzle J is preferably movable so that it may move up and down to facilitate the delivery of the cover X to the rotary holder B, and it is preferably movable up and down as required by means of an arm d^3 connected to the same reciprocating bar *d*, operated by the cam p^1. The agitator or mixer H in the packing composition tank G is preferably operated or moved up and down as required by a cam p^2 on the driving shaft P which engages a friction roller *h* on the stem h^1 of the agitator or dasher H. The packing composition feed device or pump I is preferably operated as required from the driving shaft P by a cam p^3 thereon which engages a friction roller I^2 on the slotted link I^3 which is connected by a lever I^4 and link I^5 with the stem I^1 of the pump piston. The carrier M of the drier or its driving pulley M^2 is intermittently operated as required by a crank p^4 on the driving shaft P through the connecting link M^3, pawl lever M^4 and pawl M^5 engaging a ratchet M^6 on the driving shaft M^7 of said pulley or sprocket wheel M^2.

The interior of the drying chamber L may be heated by any suitable means: We, however, prefer to employ for this purpose steam pipes or coils Q.

The operation is as follows: The can heads or covers X to be coated are placed by the operator in the feed chute or passage C and sliding down by gravity are automatically fed one by one to the rotary holder B, the downward movement of the cover being arrested by the upwardly projecting stop shoulder or lip F^1 of the ejector F which at this time projects above the face of the holder B. After striking the stop shoulder or lip F^1, the can cover slightly rebounds while the downward movement of the ejector F withdraws the stop shoulder or lip F^1 below the surface of the rotary holder B; and at the same time, the upper chuck or clamp E moves down and clamps and seats the cover on the rotary holder, thus causing it to rotate. The piston I^1 of the pump I then makes a downward stroke and forces a measured quantity of the liquid or plastic packing composition through the nozzle J onto the seaming flange *x* of the rotating cover X at the outer portion x^2 of the seaming flange, thus coating the same with a thin film of the packing composition. The upper chuck E and ejector F then move upward, thus freeing the coated cover from the rotary holder B and delivering it into the connecting chute N by which the coated cover is delivered into one of the pockets onto one of the shelves of the carrier M of the drier L. The carrier conveys the coated can covers slowly first upward and then downward through the drying chamber, the coated side of the seaming flange being upward as the same moves upward and the coated side being downward as it moves in a downward

direction through the drier, the carrier operating to reverse or turn the covers over as the carrier chain passes around the upper sprocket wheel. A pair of stationary stop or centering pins T T on the frame of the machine arranged outside of and concentrically with the rotary holder B, by engagement with the periphery of the cover, centers it with the rotary holder when the cover again slides down after first striking the stop shoulder F^1 of the ejector F. After the cover has been coated, the upward movement of the ejector F lifts the coated cover above the upper ends of the guide pins T T, so that it may slide forward into the connecting chute N.

We claim:—

1. In a machine for coating or lining the seaming flanges of can heads or covers with packing composition, the combination with a drying chamber, of a plurality of movable can cover carriers therein furnished each with a series of pockets or shelves for receiving the coated covers, a plurality of rotary holders, a plurality of can cover feed chutes, a plurality of ejectors, a plurality of upper chucks for clamping the covers against the rotary holders, a plurality of packing composition discharge nozzles, a plurality of pumps, a tank or receptacle for the packing composition, a plurality of return pipes below the discharge nozzles, and a plurality of connecting chutes extending from the rotary holders to the carriers of the drier, substantially as specified.

2. In a machine for coating the seaming flanges of can covers with packing composition, the combination with a feed chute for the covers, of a movable feeder, a rotary holder, a discharge nozzle for the packing composition, a tank or receptacle therefor and a pump for forcing the packing composition in measured quantity through the discharge nozzle upon the seaming flange of the cover as the cover is rotated by said holders with its seaming flange under said nozzle, substantially as specified.

3. In a machine for coating the seaming flanges of can covers with packing composition, the combination with a feed chute for the covers, of a movable feeder, a rotary holder, a discharge nozzle for the packing composition, a tank or receptacle therefor and a pump for forcing the packing composition in measured quantity through the discharge nozzle upon the seaming flange of the cover as the cover is rotated, and an upper movable chuck for clamping the cover against the rotary holder, said nozzle being above the seaming flange of the cover as the cover is rotated by said holder, substantially as specified.

4. In a machine for coating the seaming flanges of can covers with packing composition, the combination with a feed chute for the covers, of a movable feeder, a rotary holder, a discharge nozzle for the packing composition, a tank or receptacle therefor, a pump for forcing the packing composition in measured quantity through the discharge nozzle upon the seaming flange of the cover as the cover is rotated, and a movable ejector fitting within the rotary holder for discharging the coated cover from the holder, said nozzle being above the seaming flange of the cover as the cover is rotated by said holder, substantially as specified.

5. In a machine for coating the seaming flanges of can covers with packing composition, the combination with a feed chute for the covers, of a movable feeder, a rotary holder, a discharge nozzle for the packing composition, a tank or receptacle therefor, a pump for forcing the packing composition in measured quantity through the discharge nozzle upon the seaming flange of the cover, and a movable ejector fitting within the rotary holder for discharging the coated cover from the holder, said ejector having an upwardly projecting stop or lip for the cover to strike against as it slips down the feed chute, substantially as specified.

6. In a machine for coating the seaming flanges of can covers with packing composition, the combination with means for rotating the can cover, of a closed tank or receptacle for the packing composition, a discharge nozzle for directing it upon the seaming flange of the rotating can, and a pump for forcing the packing composition in measured quantity through the discharge nozzle upon the seaming flange of the cover, said nozzle being above the seaming flange of the cover as the cover is rotated by said means for rotating it, substantially as specified.

7. In a machine for coating the seaming flanges of can covers with packing composition, the combination with a rotary holder for the cover, of a tank for the packing composition, a discharge nozzle, and a pump for forcing the packing composition in measured quantity through the discharge nozzle upon the seaming flange of the cover as the cover is rotated, substantially as specified.

8. In a machine for coating the seaming flanges of can covers with packing composition, the combination with a rotary holder for the cover, of a tank for the packing composition, a pump, a discharge nozzle, a drying chamber, a carrier for the covers in the drying chamber and means for delivering the coated covers from the rotary holder onto the carrier of the drying chamber, substantially as specified.

9. In a machine for coating the seaming flanges of can covers with packing composition, the combination with a rotary holder for the cover, of a tank for the packing composition, a pump, a discharge nozzle, a drying chamber, a carrier for the covers in the

drying chamber, means for delivering the coated covers from the rotary holder onto the carrier of the drying chamber, a feed chute, and a feeder for delivering the can covers one by one upon the rotary holder, substantially as specified.

10. In a machine for coating the seaming flanges of can covers with packing composition, the combination with a rotary holder for the cover, of a tank for the packing composition, a pump, a discharge nozzle, a drying chamber, a carrier for the covers in the drying chamber, means for delivering the coated covers from the rotary holder onto the carrier of the drying chamber, a feed chute, a feeder for delivering the can covers one by one upon the rotary holder, and an ejector, substantially as specified.

11. In a machine for coating the seaming flanges of can covers with packing composition, the combination with a rotary holder for the cover, of a tank for the packing composition, a pump, a discharge nozzle, a drying chamber, a carrier for the covers in the drying chamber, means for delivering the coated covers from the rotary holder onto the carrier of the drying chamber, a feed chute, a feeder for delivering the can covers one by one upon the rotary holder, and an ejector, said ejector having a stop shoulder or lip for the cans to strike against, substantially as specified.

12. The combination with an inclined can cover feed chute, of a rotary holder and a reciprocating ejector furnished with an upwardly projecting stop shoulder or lip to arrest the downward movement of the covers, substantially as specified.

13. The combination with an inclined can cover feed chute, of a rotary holder and a reciprocating ejector furnished with an upwardly projecting stop shoulder or lip to arrest the downward movement of the covers, and a movable feeder, substantially as specified.

14. The combination with an inclined can cover feed chute, of a rotary holder and a reciprocating ejector furnished with an upwardly projecting stop shoulder or lip to arrest the downward movement of the covers, a movable feeder, and a movable upper chuck to clamp and seat the cover on the rotary holder, substantially as specified.

15. The combination with an inclined can cover feed chute, of a rotary holder and a reciprocating ejector furnished with an upwardly projecting stop shoulder or lip to arrest the downward movement of the covers, a movable feeder, a movable upper chuck to clamp and seat the cover on the rotary holder, and a discharge nozzle arranged above and outside of the rotary holder to direct the packing composition upon the seaming flange of the cover, substantially as specified.

16. The combination with an inclined can cover feed chute, of a rotary holder and a reciprocating ejector furnished with an upwardly projecting stop shoulder or lip to arrest the downward movement of the covers, a movable feeder, a movable upper chuck to clamp and seat the cover on the rotary holder, a discharge nozzle arranged above and outside of the rotary holder to direct the packing composition upon the seaming flange of the cover, and a pump for forcing the packing composition through the discharge nozzle, substantially as specified.

17. The combination with an inclined can cover feed chute, of a rotary holder and a reciprocating ejector furnished with an upwardly projecting stop shoulder or lip to arrest the downward movement of the covers, a movable feeder, a movable upper chuck to clamp and seat the cover on the rotary holder, a discharge nozzle arranged above and outside of the rotary holder to direct the packing composition upon the seaming flange of the cover, a pump for forcing the packing composition through the discharge nozzle, and a drier having a movable carrier to which the coated covers are delivered from the rotary holder, substantially as specified.

18. The combination with a rotary holder, of means for clamping the can cover thereon, a discharge nozzle and a pump for delivering the packing composition upon the seaming flange of the rotating can cover, and an upright drying chamber having a carrier furnished with a series of can receiving pockets or shelves, and means for automatically delivering the freshly coated covers onto the receiving shelves of said carrier, substantially as specified.

19. The combination with a rotary holder, of means for clamping the can cover thereon, a discharge nozzle and a pump for delivering the packing composition upon the seaming flange of the rotating can cover, an upright drying chamber having a carrier furnished with a series of can receiving pockets or shelves and a connecting chute for delivering the coated covers from the rotary holder onto the shelves or pockets of the drying carrier, substantially as specified.

20. In a machine for coating the seaming flanges of can covers with packing composition, the combination with an upright drying chamber, of an endless flexible can cover carrier furnished with a series of can cover receiving pockets or shelves by which the can covers are held in a horizontal position while moving upward and downward through the drier, a can coating mechanism and means for automatically delivering the freshly coated covers from the can coating mechanism onto the shelves of the carrier, substantially as specified.

21. In a machine for coating the seaming

flanges of can covers with packing composition, the combination with an upright drying chamber, of an endless flexible can cover carrier furnished with a series of can cover receiving pockets or shelves by which the can covers are held in a horizontal position while moving upward and downward through the drier, and means for coating the seaming flanges with packing composition, and means for automatically delivering the freshly coated covers onto the receiving shelves of said carrier, substantially as specified.

22. In a machine for coating the seaming flanges of can covers with packing composition, the combination with an upright drying chamber, of an endless flexible can cover carrier furnished with a series of can cover receiving pockets or shelves by which the can covers are held in a horizontal position while moving upward and downward through the drier, means for coating the seaming flanges with packing composition, means for discharging the coated covers from said coating means, and means for delivering the coated covers to the carrier of the drier, substantially as specified.

23. In a machine for coating the seaming flanges of can covers with packing composition, the combination with means for feeding the can covers one by one, of a rotary holder for rotating the can covers, means for applying packing composition to the seaming flanges of the covers, a drying chamber and a carrier in the drying chamber furnished with a plurality of can receiving pockets or shelves, means for discharging the freshly coated covers from said rotary holder and means for delivering the freshly coated covers to said carrier of the drier as they are discharged from said rotary holder, substantially as specified.

24. In a machine for coating the seaming flanges of can covers with packing composition, the combination with means for feeding the can covers one by one, of means for rotating the can covers, means for applying packing composition to the seaming flanges of the covers, a drying chamber and a carrier in the drying chamber furnished with a plurality of can receiving pockets or shelves, and means for delivering the coated can covers to the carrier of the drier from said means for rotating them, substantially as specified.

25. The combination with a rotary can cover holder of less diameter than the cover, of a discharge nozzle for the packing composition arranged above the seaming flange of the cover on the rotary holder, a tank for the packing composition and a return pipe for the packing composition having its mouth below the discharge nozzle to receive the charge of packing composition in case no can is present on the rotary holder to receive it, substantially as specified.

26. The combination with a rotary can cover holder of less diameter than the cover, of a discharge nozzle for the packing composition arranged above the seaming flange of the cover on the rotary holder, a tank for the packing composition and a return pipe for the packing composition having its mouth below the discharge nozzle to receive the charge of packing composition in case no can cover is present on the rotary holder to receive it, and a pump for forcing the packing composition through the discharge nozzle, substantially as specified.

27. The combination with a rotary can cover holder of less diameter than the cover, of a discharge nozzle for the packing composition arranged above the seaming flange of the cover on the rotary holder, a tank for the packing composition, a return pipe for the packing composition having its mouth below the discharge nozzle to receive the charge of packing composition in case no can cover is present on the rotary holder to receive it, a pump for forcing the packing composition through the discharge nozzle and a feed chute for the covers, substantially as specified.

28. The combination with a rotary can cover holder of less diameter than the cover, of a discharge nozzle for the packing composition arranged above the seaming flange of the cover on the rotary holder, a tank for the packing composition, a return pipe for the packing composition having its mouth below the discharge nozzle to receive the charge of packing composition in case no can cover is present on the rotary holder to receive it, a pump for forcing the packing composition through the discharge nozzle, a feed chute for the covers, and a movable feeder for releasing the covers one by one, substantially as specified.

29. The combination with a rotary can cover holder of less diameter than the cover, of a discharge nozzle for the packing composition arranged above the seaming flange of the cover on the rotary holder, a tank for the packing composition, a return pipe for the packing composition having its mouth below the discharge nozzle to receive the charge of packing composition in case no can cover is present on the rotary holder to receive it, a pump for forcing the packing composition through the discharge nozzle, a feed chute for the covers, a movable feeder for releasing the covers one by one, and an ejector for the covers seated in a recess of the rotary holder, substantially as specified.

30. The combination with a rotary can cover holder of less diameter than the cover, of a discharge nozzle for the packing composition arranged above the seaming flange

of the cover on the rotary holder, a tank for the packing composition, a return pipe for the packing composition having its mouth below the discharge nozzle to receive the charge of packing composition in case no can cover is present on the rotary holder to receive it, a pump for forcing the packing composition through the discharge nozzle, a feed chute for the covers, a movable feeder for releasing the covers one by one, an ejector for the covers seated in a recess of the rotary holder, and having an upwardly projecting stop shoulder or lip, substantially as specified.

31. The combination with a rotary can cover holder of less diameter than the cover, of a discharge nozzle for the packing composition arranged above the seaming flange of the cover on the rotary holder, a tank for the packing composition, a return pipe for the packing composition having its mouth below the discharge nozzle to receive the charge of packing composition in case no can cover is present on the rotary holder to receive it, a pump for forcing the packing composition through the discharge nozzle, a feed chute for the covers, a movable feeder for releasing the covers one by one, an ejector for the covers seated in a recess of the rotary holder, and having an upwardly projecting stop shoulder or lip, and an upper chuck for clamping the cover on the rotary holder, substantially as specified.

32. The combination with a rotary can cover holder of less diameter than the cover, of a discharge nozzle for the packing composition arranged above the seaming flange of the cover on the rotary holder, a tank for the packing composition, a return pipe for the packing composition having its mouth below the discharge nozzle to receive the charge of packing composition in case no can cover is present on the rotary holder to receive it, a pump for forcing the packing composition through the discharge nozzle, a feed chute for the covers, a movable feeder for releasing the covers one by one, an ejector for the covers seated in a recess of the rotary holder, and having an upwardly projecting stop shoulder or lip, an upper chuck for clamping the cover on the rotary holder, and a drier having a carrier furnished with a series of can receiving pockets or shelves, and means for automatically delivering the freshly coated covers onto the receiving shelves of said carrier substantially as specified.

33. The combination with a rotary can cover holder of less diameter than the cover, of a discharge nozzle for the packing composition arranged above the seaming flange of the cover on the rotary holder, a tank for the packing composition, a return pipe for the packing composition having its mouth below the discharge nozzle to receive the charge of packing composition in case no can cover is present on the rotary holder to receive it, a pump for forcing the packing composition through the discharge nozzle, a feed chute for the covers, a movable feeder for releasing the covers one by one, an ejector for the covers seated in a recess of the rotary holder, and having an upwardly projecting stop shoulder or lip, an upper chuck for clamping the cover on the rotary holder, and a drier having a carrier furnished with a series of can receiving pockets or shelves, and means for delivering the can covers from the rotary holder to the carrier of the drier, substantially as specified.

34. The combination with a can cover feed chute, of a rotary holder, and a reciprocating ejector provided with an upwardly projecting lip to arrest the forward movement of the cover as the cover slides down from the chute, substantially as specified.

35. The combination with a can cover feed chute, of a rotary holder, stop or guide pins for centering the cover with the holder, and a reciprocating ejector provided with a lip to arrest the forward movement of the cover, and an upper reciprocating chuck to clamp the cover on the holder, substantially as specified.

36. The combination with a can cover feed chute, of a rotary holder, stop or guide pins for centering the cover with the holder and a reciprocating ejector provided with a stop shoulder or lip to arrest the forward movement of the cover, substantially as specified.

37. The combination with a rotary can cover holder, of a discharge nozzle for packing composition arranged above the seaming flange of the cover on the rotary holder and beyond the periphery of the holder so that the packing composition will not be discharged upon the holder in case there is no cover thereon to receive the packing composition, a tank for the packing composition and a pump for forcing the packing composition in measured quantity upon the flange of the cover as the cover is rotated substantially as specified.

38. The combination with a rotary can cover holder, of a discharge nozzle for packing composition arranged above the seamless flange of the cover on the rotary holder and beyond the periphery of the holder so that the packing composition will not be discharged upon the holder in case there is no cover thereon to receive the packing composition and a pipe beneath the discharge nozzle to receive the packing composition, substantially as specified.

39. The combination with a rotating can cover holder, of means for applying packing composition to the seaming flange of the rotating cover on the holder, a drying chamber and a movable can cover carrier in

the drying chamber, means for ejecting the freshly coated cover from said rotating holder, and means for automatically delivering the coated covers onto the carrier of the drier substantially as specified.

40. The combination with a rotating can cover holder, of means for applying packing composition to the seaming flange of the rotating cover on the holder, a drying chamber and a movable can cover carrier in the drying chamber, and means for automatically delivering the coated can covers from the rotary holder onto the carrier of the drier, substantially as specified.

41. The combination with a rotating can cover holder, of means for applying packing composition to the seaming flange of the rotating cover on the holder, a drying chamber and a movable can cover carrier in the drying chamber, means for automatically delivering the coated can covers from the rotary holder onto the carrier of the drier, and means for automatically delivering and seating the covers on the rotary holder, substantially as specified.

42. A machine for coating can covers with packing composition having a plurality of rotary holders for the covers, and a plurality of devices for applying packing composition to the seaming flanges of the rotating covers, a drying chamber and a plurality of carriers for the covers in the drying chamber, and means for automatically delivering the freshly coated covers from said rotary holders to said carriers in the drying chamber substantially as specified.

43. A machine for coating can covers with packing composition, having a plurality of rotary holders for the covers, and a plurality of devices for applying packing composition to the seaming flanges of the rotating covers, a drying chamber and a plurality of carriers for the covers in the drying chamber, and means for delivering the coated covers from the rotary holders onto the carriers of the drier, a plurality of ejectors for said rotary holders, and a plurality of means for delivering the freshly coated covers onto the carriers of the drier substantially as specified.

44. A machine for coating the seaming flanges of can covers with packing composition, having a plurality of rotary holders for the covers, a plurality of devices for applying packing composition to the seaming flanges of the covers and a drying chamber having a carrier onto which the coated covers are delivered from the rotary holders, means for automatically feeding the covers to said rotary holders, and means for automatically delivering the freshly coated covers to the carrier of the drier substantially as specified.

45. A machine for coating can covers with packing composition, having a drying chamber and a movable carrier therein adapted to receive and hold a plurality of covers, means for applying packing composition to the covers, and means for automatically delivering the freshly coated covers to the carrier of the drier substantially as specified.

46. A machine for coating can covers with packing composition, having a rotary holder for the covers, means for automatically feeding the covers to the rotary holder, means for applying the packing composition to the rotating covers and a drying chamber into which the coated can covers are delivered from the rotary holder, means for automatically delivering the freshly coated covers into said drying chamber substantially as specified.

47. A machine for coating can covers with packing composition, having a rotary holder for the covers, means for automatically feeding the covers to the rotary holder, means for applying the packing composition to the rotating covers and a drying chamber into which the coated can covers are delivered from the rotary holder, and a carrier for moving the coated covers through the drying chamber, and means for automatically delivering the freshly coated covers to the carrier of the drying chamber, substantially as specified.

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Witnesses to signatures of George W. Weber and Felix Eberhart:
L. A. WELLES,
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Witnesses to signature of Edwin V. Swangren:
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