No. 754,699. PATENTED MAR. 15, 1904.

# J. G. & M. O. REHFUSS.

## CAN SOLDERING MACHINE.

APPLICATION FILED MAR. 1, 1902. RENEWED JAN. 4, 1904.

NO MODEL. 5 SHEETS—SHEET 1.

Fig. 1.

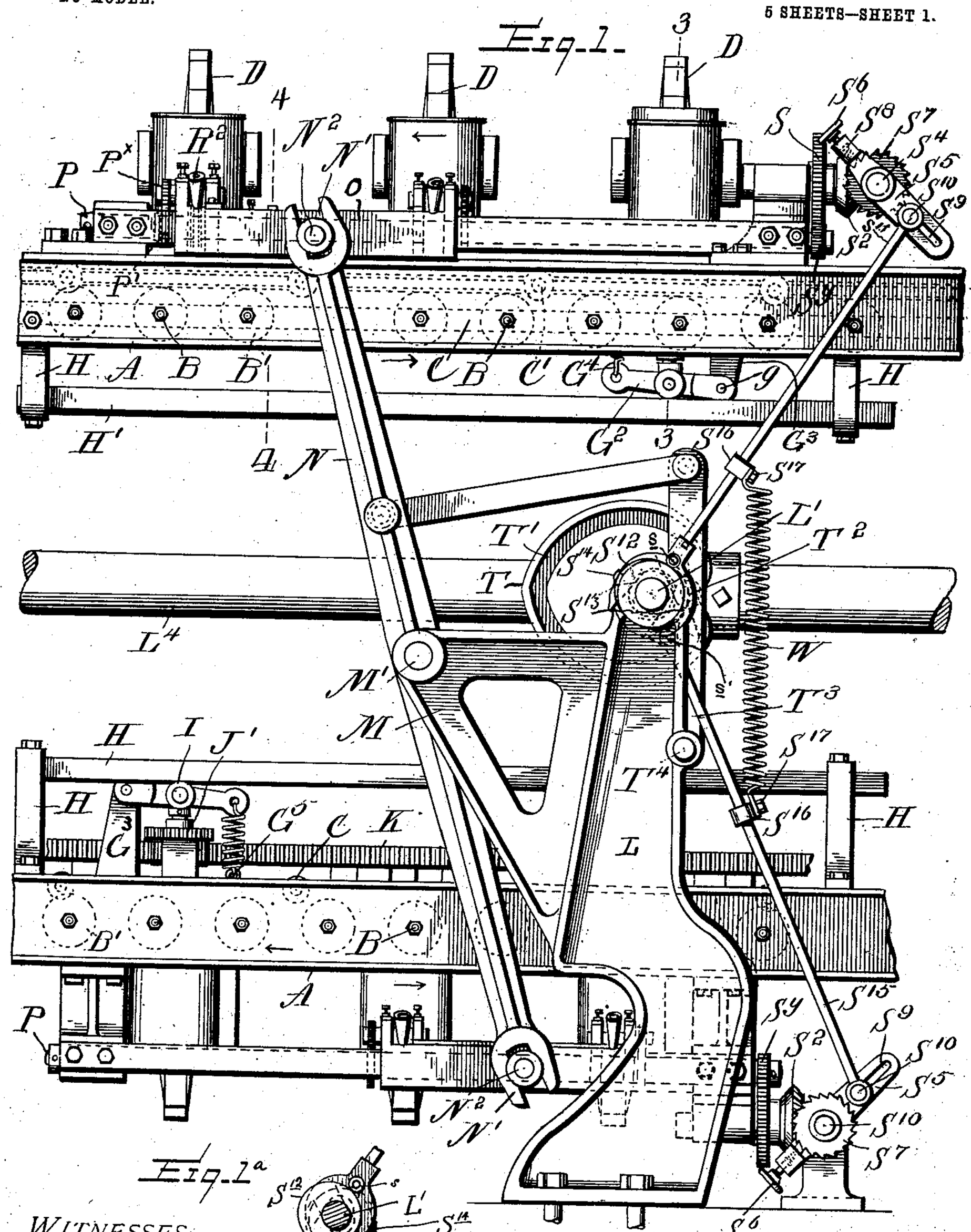


Fig. 1a.




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Fig. 6.

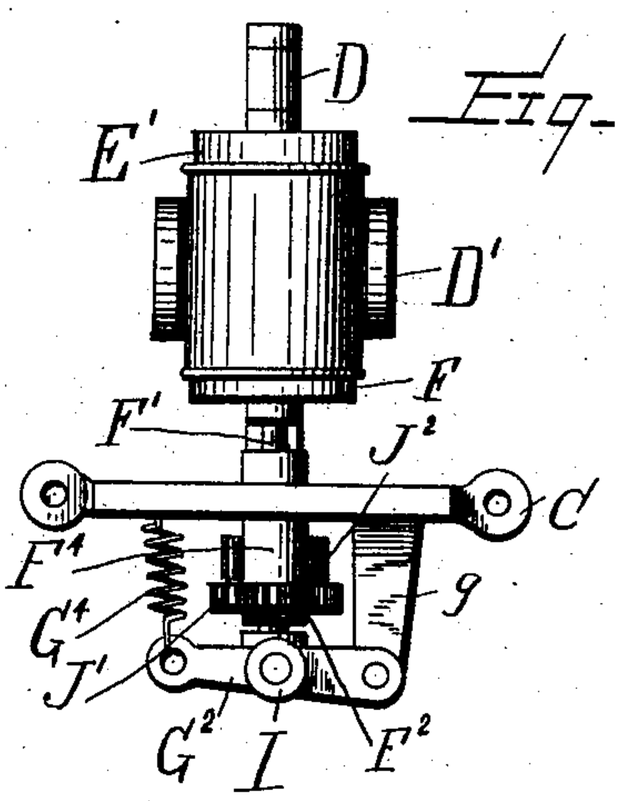



Fig. 2.

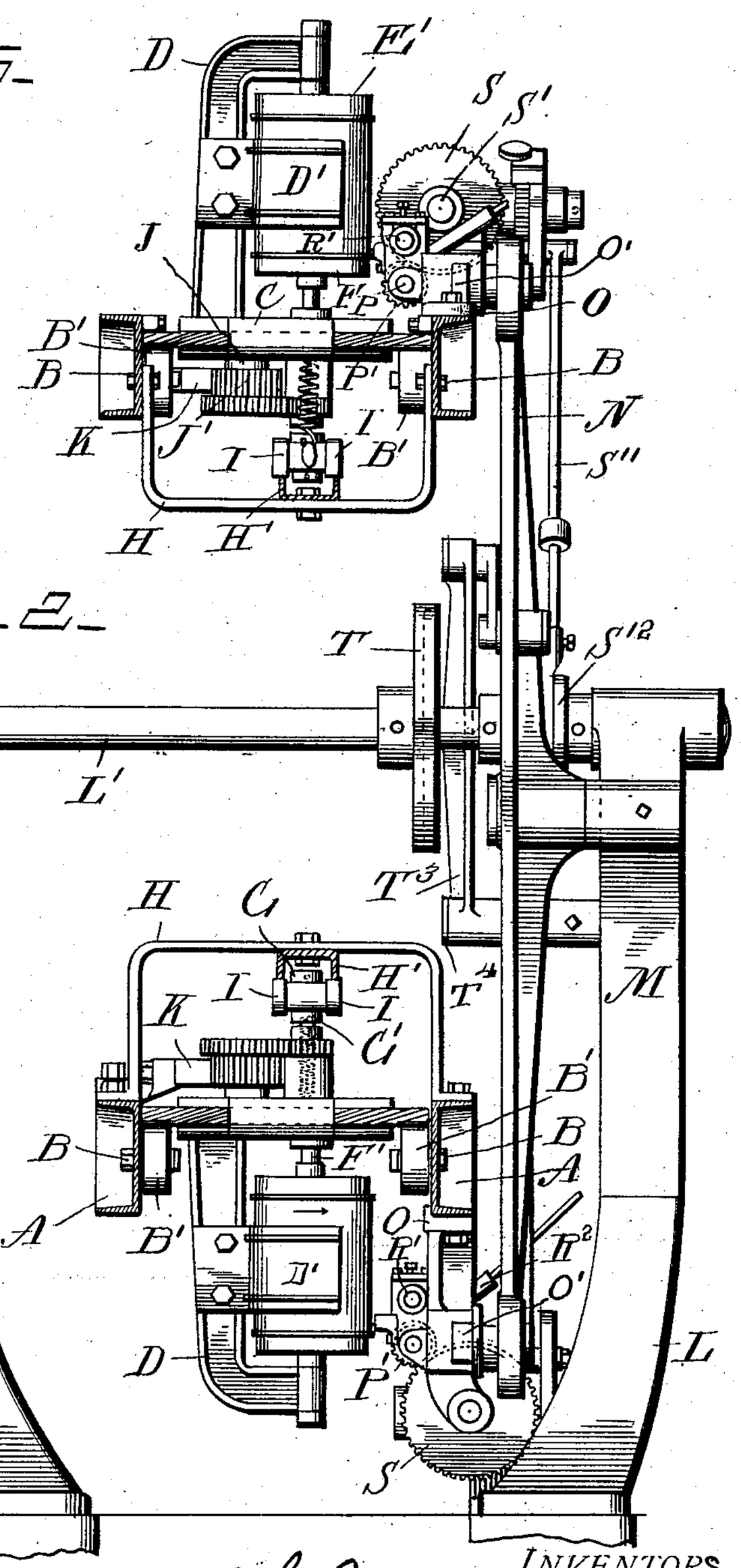
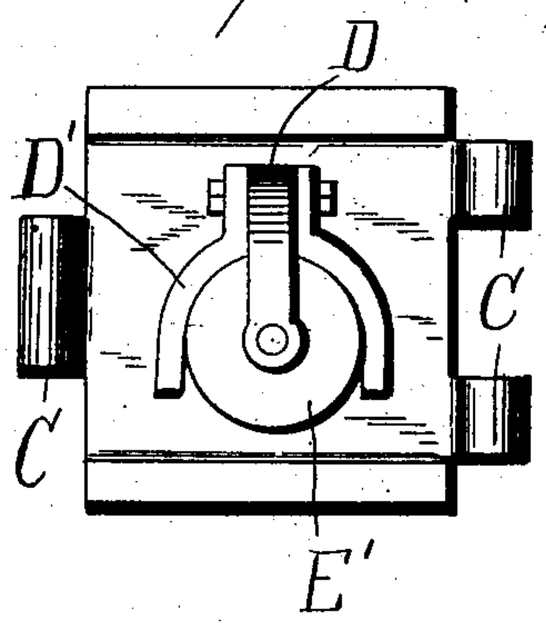



Fig. 7.

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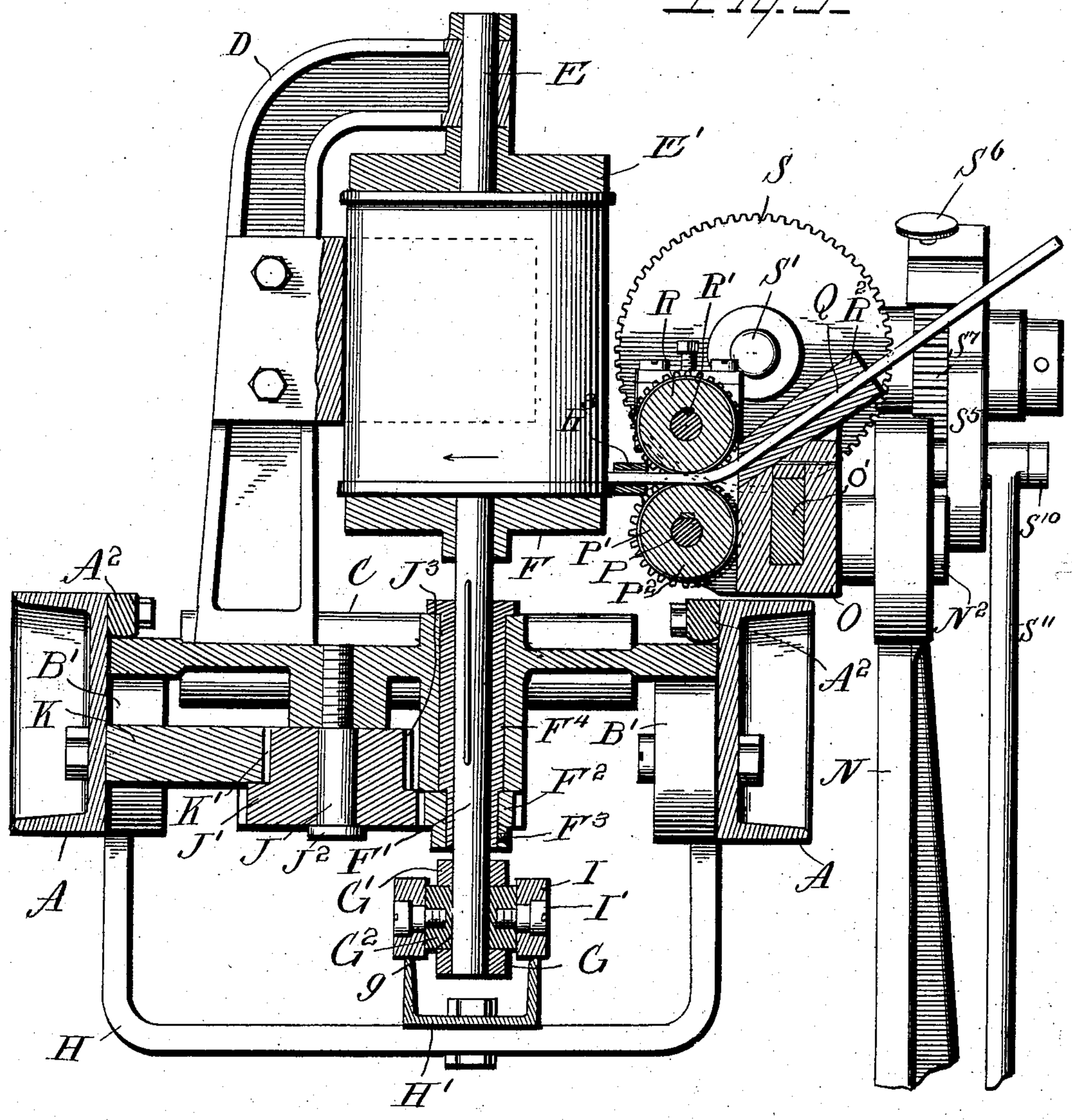
NO MODEL. 5 SHEETS—SHEET 3.

Fig. 3.

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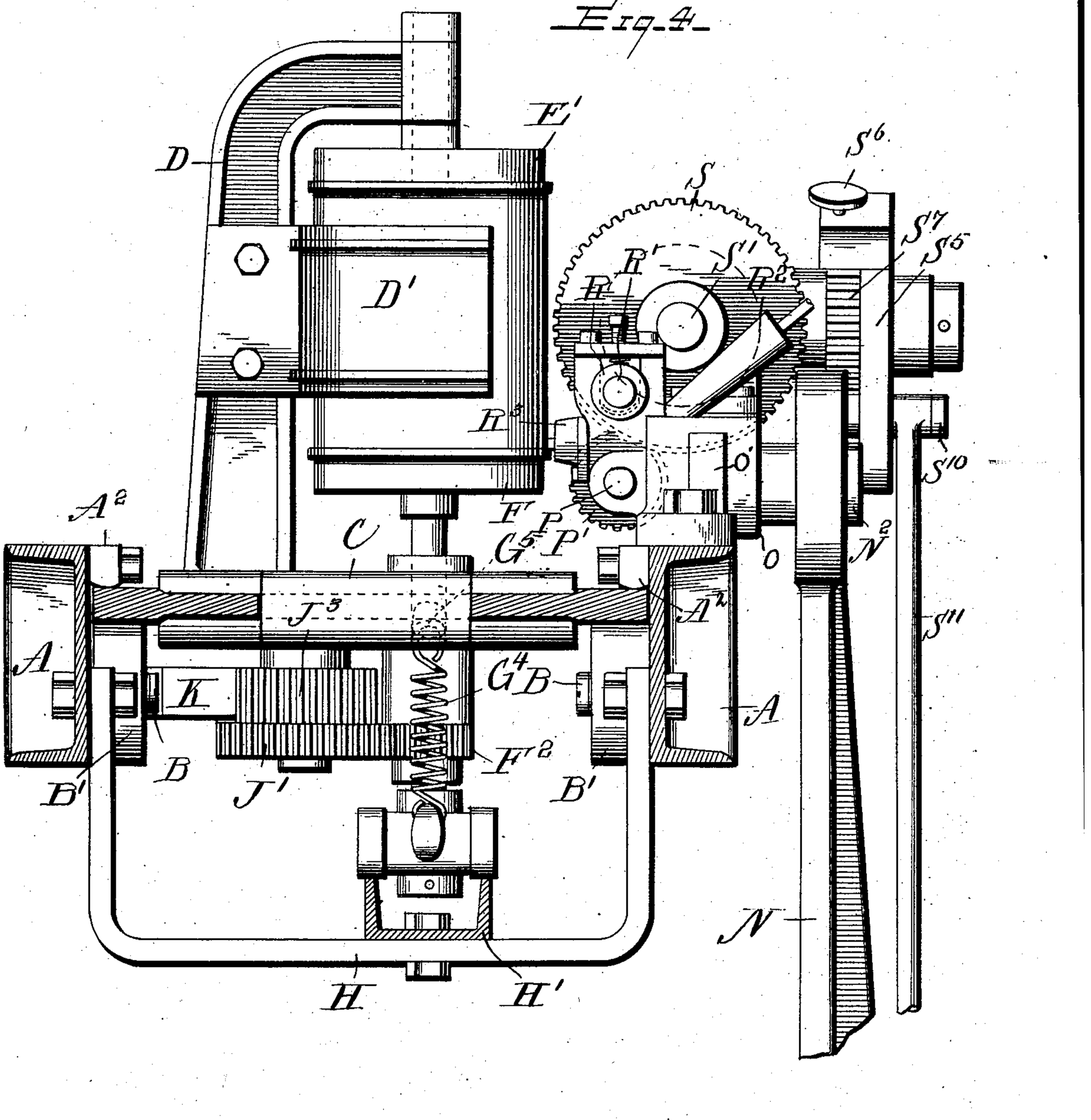
NO MODEL. 5 SHEETS—SHEET 4.

Fig. 4.

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NO MODEL. 5 SHEETS—SHEET 5.

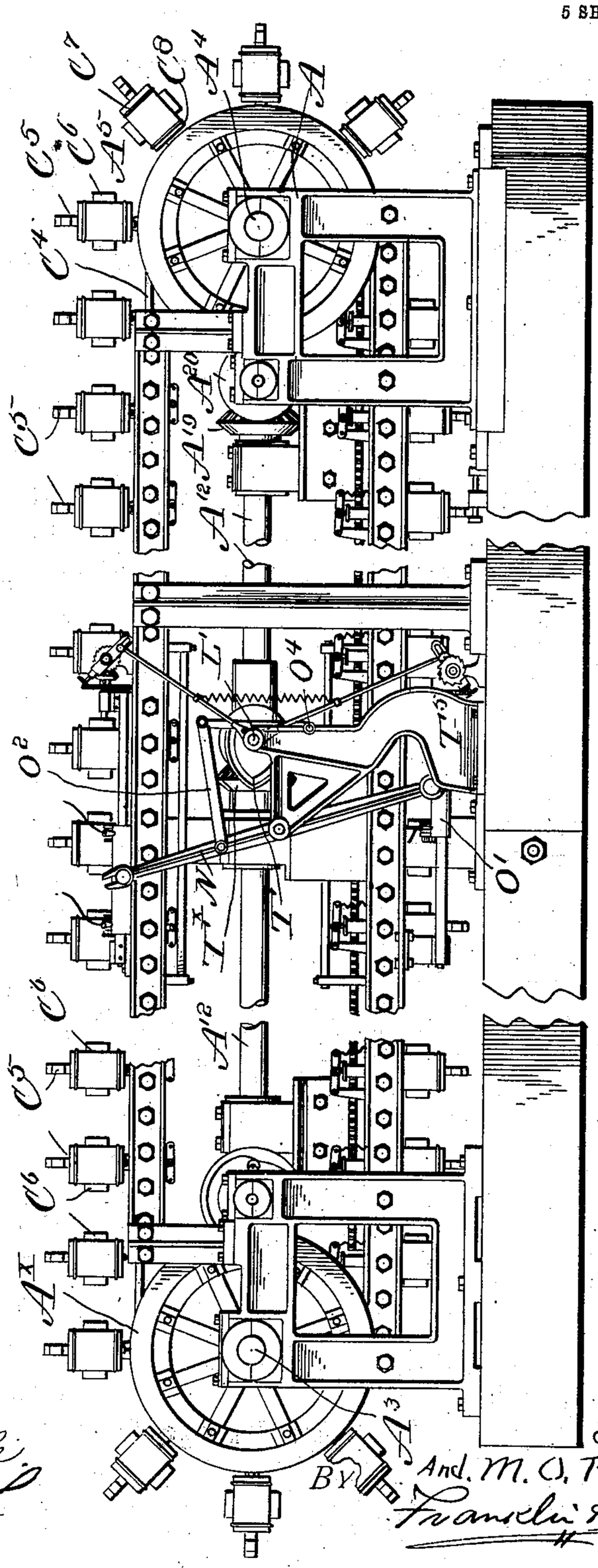


Fig. 5.

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# UNITED STATES PATENT OFFICE.

JOHN GEORGE REHFUSS AND MARTIN O. REHFUSS, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO BUREAU CAN AND MANUFACTURING COMPANY, A CORPORATION OF DELAWARE.

## CAN-SOLDERING MACHINE.

SPECIFICATION forming part of Letters Patent No. 754,699, dated March 15, 1904.

Application filed March 1, 1902. Renewed January 4, 1904. Serial No. 187,737. (No model.)

*To all whom it may concern:*

Be it known that we, JOHN GEORGE REHFUSS and MARTIN O. REHFUSS, citizens of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Can-Soldering Machines; and we do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

This invention relates to new and useful improvements in mechanism for automatically soldering cans; and it consists in the provision of means whereby the bodies of cans upon which the flanged tops and bottoms have been previously placed are carried in perpendicular positions by an endless chain, each can being caused to rotate as it travels with the chain and each top and bottom designed to be automatically soldered to the body portion while thus in motion and during a single cycle of the endless-chain carrier.

More specifically, the invention comprises an endless-chain carrier each link of which carries clamping-plates engaging the tops and bottoms on the opposite ends of the cans with sufficient frictional force to cause the can to rotate axially with the clamping-plates as one of the latter is positively driven and in the provision of solder carrying and feeding mechanism having a predetermined variable movement, whereby the bottoms on the inner ends of a plurality of consecutive cans are soldered simultaneously with the soldering of the tops on the outer ends of the cans on the opposite portion of the endless-chain carrier.

The invention consists, further, in various details of construction and combinations of parts, as will be hereinafter more fully described and then specifically defined in the appended claims and as illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this application, and in which drawings similar letters of reference indicate like parts throughout the several views, in which—

Figure 1 is a side elevation showing parallel portions of the endless-chain carrier, also the solder-carrying mechanism and means for positively driving the same, the sprocket-wheels over which the chain travels not being shown. Fig. $1^a$ is a detail sectional view showing the cams which actuate rods for operating the solder-feeding apparatus. Fig. 2 is a vertical sectional view through the carrier and main driving-shaft, showing various parts in elevation. Fig. 3 is a sectional view taken on line 3 3 of Fig. 1 when the oscillating lever N is at its farthest forward movement. Fig. 4 is a vertical sectional view taken on line 4 4 of Fig. 1. Fig. 5 is a side elevation of the complete machine. Fig. 6 is a detail view showing in side elevation one of the links of the endless carrier, also attachments thereto. Fig. 7 is a detail view of one of the links of the carrier.

Reference now being had to the details of the drawings by letter, A designates the frame on which the endless-chain carrier is mounted, which is adapted to have a continuous motion, said frame comprising two parallel metallic channel or other beams spaced apart a suitable distance.

Mounted on the frame is a series of stub-shafts B, carrying antifriction-rollers B′, on which the chain travels. Said links C are held against the antifriction-wheels by means of strips $A^2$, fastened to the inner faces of the channel irons or beams A of the frame, as clearly seen in Figs. 3 and 4 of the drawings, whereby the chain may be steadied and guided while the cans are being rotated on their longitudinal axes. Integral with or secured to each link is a yoke D, at the free end of which is swiveled a stub-shaft E, carrying a clamping plate or disk E′. Also carried by this link is a second clamping plate or disk F, which is mounted to rotate with and on a spring-actuated rod F′, splined to a sleeve $F^4$, journaled in the link, and to said

sleeve is held a gear-wheel $F^2$, secured thereto by means of a screw $F^3$. Said rod F′ rotates with the sleeve $F^4$ in the link, as shown clearly in Fig. 3 of the drawings, and to the lower end of the rod are fastened collars G and G′, which are keyed or otherwise secured to the rod and spaced apart. Interposed between said collars G and G′ is a spring-actuated lever $G^2$, which is apertured to receive said rod, and one end of said lever is pivoted at *g* to a bracket $G^3$, carried by the link. The other end of said lever is connected to a spring $G^4$, which spring is in turn fastened to an eye $G^5$, carried by the link. Connecting the two parallel horizontal portions of the frame are the yokes H, there being four of these yokes shown in the drawings. Mounted on said yokes are channel-irons H′, the longitudinal edges of which serve as tracks on which the antifriction-wheels I travel when the clamping-jaws are held in clamping relation against the tops and bottoms of the can. The said antifriction-wheels I are mounted to rotate on the stub-shafts I′, which are screw-threaded at their inner ends and secured in threaded apertures in the opposite side walls of said lever $G^2$, as shown clearly in Fig. 3 of the drawings.

Mounted on each link is a stub-shaft J, which is threaded at one end and adapted to engage the threads in the wall of an aperture in the link, and journaled on each shaft J is a gear-wheel J′, having two sets of gear-teeth about its circumference. The teeth about the circumference of the enlarged end of said gear-wheel J′ are in mesh with the teeth of the gear-wheel $F^2$, which is keyed to the sleeve $F^4$. Said gear-wheel J′ is held upon the stub-shaft J by means of the head $J^2$, which is made preferably integral with said stub-shaft. Fastened to the inner face of the frame of the machine, on one side thereof, are four parallel rack-bars K, having teeth K′ on their inner edges. These rack-bars are horizontally disposed, and the teeth thereof are adapted to mesh with the teeth $J^3$, which are formed on the circumference of the gear-wheel J′, as the links of the chain are traveling horizontally during the soldering process.

Mounted in suitable bearings in the standard L is a counter-shaft L′, having a bevel-gear $L^2$ keyed at one end thereof and in mesh with a bevel-gear $L^3$, rotating with the main operating-shaft $L^4$. Mounted on the bracket M is a stub-shaft M′, keyed or otherwise fastened to said bracket, and journaled on the end of said stub-shaft is an oscillating arm N, having forked ends N′, (shown clearly in Fig. 1 of the drawings,) which ends are adapted to engage laterally-projecting pins $N^2$, fastened to the carriage O, which carries the solder-feeding mechanism. In the drawings we have shown two of these carriages, each having a variable motion and one mounted on each longitudinal bar O′, supported adjacent to the frame A and adapted to be reciprocated by said arm N as the latter is caused to oscillate. Each carriage is longitudinally apertured to receive a horizontally-disposed iron O′, on which it rides, and carries a shaft P, which is suitably journaled thereon and which shaft is longer than the carriage carrying the same, and on said shaft are keyed grooved wheels $P^2$, each adapted to receive a wire of solder Q, which is positively fed between a wheel $P^2$ and a grooved wheel R, keyed to a stub-shaft R′, carried by an adjustable boxing on said carriage, on which stub-shaft is keyed a gear-wheel $P^x$ in mesh with wheel P′, keyed to shaft P. Said wire of solder is guided through longitudinally-inclined and apertured guides $R^2$ and also an apertured lug $R^3$, which are adjacent to the circumference of the can during the soldering process.

Shaft P has keyed to one end thereof a gear-wheel $S^y$, which is in mesh with gear-wheel S, keyed to a stub-shaft S′, and keyed to said stub-shaft S′ is a bevel-gear $S^2$, which in turn is in mesh with a gear-wheel keyed to rotate on a stub-shaft $S^4$, journaled in suitable bearings on said carriage. Loosely journaled on the end of the stub-shaft $S^4$ is an oscillating arm $S^5$, which carries a spring-actuated pawl $S^6$, the inner end of which pawl is held in mesh with the teeth of the ratchet-wheel $S^7$ by means of a spring $S^8$, said ratchet-wheel being keyed to the shaft $S^4$. Said arm $S^5$ has an elongated slot $S^9$, in which the adjusting-bolt $S^{10}$ is mounted. Connected to the adjusting-bolt $S^{10}$ is a rod $S^{11}$, the inner end of said rod being forked and carrying an antifriction-roller *s*, traveling upon the circumference of the cam $S^{12}$, which is keyed to and rotates with the counter-shaft L′. By means of the adjusting-bolt $S^{10}$ the feed of the wire of solder may be regulated by fastening said bolt at different locations in the elongated slot $S^9$ of said arm.

Keyed to the counter-shaft L′ is a cam T, in one face of which is a substantially heart-shaped groove T′, in which a roller $T^2$, carried by a lever $T^3$, is adapted to travel. Said lever $T^3$ is pivoted at $T^4$ to the standard L and has pivotal connections with the oscillating lever N, as clearly illustrated in Fig. 1 of the drawings. By reason of the cam-wheel T having a groove in one face thereof and connections between the same and the carriages it will be observed that a variable movement is imparted to the carriages, whereby a gradual movement equal to the speed at which the endless carrier travels is afforded while the soldering is being effected, and an accelerated motion is given to the carriages on their return movements after the soldering has been effected.

Referring to Figs. 1 and 2 of the drawings, it will be observed that the soldering process is carried on on the upper and lower longitudinal portions of the frame simultaneously,

and that the construction shown in Figs. 1 and 2 above and below the counter-shaft L′ are counterparts of each other, and that the two carriages which carry the solder-feeding mechanism are reciprocated by the opposite forked ends of the oscillating lever N. Mounted upon the shaft L′ is another cam $S^{13}$, against which an antifriction-roller *s′* bears, which latter is journaled on the forked end $S^{14}$ of the rod $S^{15}$, and carried upon each of said rods $S^{11}$ and $S^{15}$ are collars $S^{16}$, which are held at any suitable locations on said rods by means of adjusting-screws $S^{17}$. Connecting said collars is a spring W, the office of which is to hold the antifriction-rollers mounted on said forked ends of the rods in contact with the cams $S^{12}$ and $S^{13}$, said spring being under tension when the forked rod is driven outward in the act of imparting an intermittent motion to the solder-feeding mechanism, and on the return movement of said rod the spring is adapted to hold the roller of the forked end of the rod on the cam when the latter completes its revolution, the various parts of this feeding mechanism being so arranged and adapted to operate at such predetermined moments that the feeding of the solder will only take place during the period that the cans and carriages are traveling together in the same direction.

Mounted on the standards D are the wings or stop-plates D′, (shown clearly in Figs. 2 and 4 of the drawings,) which guard-plates are substantially U-shaped in horizontal section and provided to hold the body portions of the can in positions to be engaged by the clamping-plates before referred to.

The operation of our machine is as follows: The bodies of the cans, to which the tops and bottoms have been applied by mechanism which forms no part of the present invention, but which will be shown and described in a subsequent application, are engaged by the clamping-plates being securely held to the stationary plates by the spring-actuated clamping-plates with sufficient friction to cause the cans, with the tops and bottoms applied thereto, to rotate as said spring-actuated clamping-plates are positively driven. Motion is imparted to the endless chain by any suitable means, (not shown,) said chain being caused to travel in a direction indicated by the arrows in Fig. 1. While the endless chain, each link of which carries a can, with tops and bottoms to be soldered thereto, is in motion the counter-shaft L′, which is driven from the main operating-shaft, will cause the grooved cam carried by shaft L′ to rotate, and as the roller $T^2$, mounted on the lever $T^3$, travels in the groove T′ in the cam it will be observed that a variable tilting movement will be imparted to the lever N, which will cause the two carriages O and O to be actuated at the ends of said lever N in opposite directions. In the drawings we have illustrated two solder-feeding devices mounted on each carriage in such positions that successive cans will be soldered simultaneously on the opposite longitudinal portions of the carrier. While the endless chain is in motion the gear-wheels J′, one being carried by each link of the chain, will be caused to rotate only when in mesh with the teeth of said rack-bars as the cans are about to be soldered, and motion is communicated from the gear-wheel J′ to gear-wheel $F^2$, which is keyed to rotate with the rod or shaft F′, which will cause the cans to rotate while receiving the solder. At each rotation of the shaft L′ and grooved cam mounted thereon the carriage carrying the solder-feeding mechanism is reciprocated by the lever N being driven to its farthest forward limit and returned to its starting position. When the solder is being applied to the can, which is on the travel of the carriage in the direction of the moving carrier, the rod $S^{11}$ is driven by the cam $S^{12}$ for the purpose of imparting intermittent motion to the ratchet-wheel, which through its connections with the gear-wheel S will cause the gear-wheel $P^2$ to make a partial rotation, also the grooved wheel R driven thereby, causing the wire of solder which is held between the two feed-wheels $P^2$ and R to be fed against the rotating cans. The cans which are to be soldered may be heated to a sufficiently high temperature to melt the solder as it is brought in contact with the body of the can by any suitable means, (not shown) so that when the can makes a complete rotation against the end of the wire of solder the top and bottom will be thoroughly soldered to the body of the can.

By the construction shown it will be observed that the cans are caused to rotate in the direction illustrated by the arrows in Figs. 1 and 3 of the drawings as they are carried forward by the endless chain. As the soldering process is being carried on at the upper and lower longitudinal portions of the frame simultaneously, it will be observed that the tops and bottoms will be soldered to the body portions of the cans as the endless chain makes a complete revolution, and suitable means may be provided, which are not shown, for releasing the cans after the tops and bottoms have been thoroughly soldered.

Having thus fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. A machine for soldering tops and bottoms to the body portions of cans, comprising an endless-chain carrier, means secured to and moving with the latter for holding and rotating the cans on the carrier, and a solder-holding carriage having a variable movement, and solder-feeding means, as set forth.

2. A machine for soldering tops and bottoms to the body portions of cans, comprising a continuously-moving endless-chain carrier, means secured to and moving with the latter for holding the rotating cans on the carrier, a solder-

carriage having a variable motion, means for operating the same, and solder-feeding mechanism, as set forth.

3. A machine for soldering tops and bottoms to the bodies of cans, comprising an endless carrier and means for rotating the cans in perpendicular positions with tops and bottoms thereon, which are held to said carrier, a solder-supporting carriage having a variable motion, and means for feeding the solder as the carriage is traveling at the same speed of and with the carrier.

4. A machine for soldering tops and bottoms to the bodies of cans, comprising an endless carrier and means holding the cans perpendicular and for rotating the same with tops and bottoms thereon, which are held to said carrier, a variably-movable reciprocating carriage with solder-feeding mechanism thereon adapted to move with and in the direction of the travel of said carrier during the soldering process, an oscillating lever for actuating said carriage and means for operating said lever, as set forth.

5. A machine for soldering tops and bottoms to the bodies of cans, comprising an endless carrier having a continuous motion and means for rotating the cans with tops and bottoms thereon, which are held perpendicular to said carrier, a variably-movable reciprocating carriage with solder-feeding mechanism thereon adapted to move with and in the direction of the travel of said carrier during the soldering process, an oscillating lever for actuating said carriage and means for imparting a variable motion to said carriage, as set forth.

6. A machine for soldering tops and bottoms to the bodies of cans, comprising an endless carrier, means for rotating cans with tops and bottoms thereon, a reciprocating solder-carriage, a guide-bar passing longitudinally through the latter, means for feeding solder from the carriage while the latter is in motion and mechanism for imparting an accelerated motion to the solder-carriage while the solder-feeding means is at rest, as set forth.

7. A machine for soldering tops and bottoms to the body portions of cans, comprising an endless carrier on which the can-bodies with tops and bottoms thereon are held and rotated, carriages with solder-feeding mechanism thereon adapted to travel adjacent to and along with successive cans and at the same rate of speed as the carrier during the soldering process, and having an accelerated speed on the return movement of said carriage, as set forth.

8. A machine for soldering tops and bottoms to the bodies of cans, comprising an endless carrier on which cans with tops and bottoms thereon are held and rotated, a longitudinally-movable horizontally-disposed solder-carriage and means for feeding the solder while the carriage is traveling with a can, as set forth.

9. A machine for soldering tops and bottoms to the bodies of cans, comprising an endless carrier, to which cans with tops and bottoms thereon, are held and rotated, horizontally-disposed and longitudinally-reciprocating carriages having variable movements, solder-feeding mechanism thereon, an oscillating lever for reciprocating said carriages simultaneously in opposite directions, as set forth.

10. A machine for soldering the tops and bottoms to the bodies of cans, comprising an endless carrier on which cans, with tops and bottoms thereon, are held and rotated, longitudinally-movable carriages, solder-feeding mechanism thereon, an oscillating lever for actuating said carriages, an operating-shaft, a grooved cam-wheel rotating therewith, a pivoted lever having a lug thereon which travels in the groove of said cam, and a pivotal link connection between said levers, as set forth.

11. A machine for soldering tops and bottoms to the bodies of cans, comprising an endless carrier, rotary clamping-plates mounted on the carrier, a stationary rack-bar, and gear-wheel connections between the same and said plates, a horizontally-disposed and longitudinally-reciprocating solder-carriage, and cam-wheel, connections between the same and said carriage for imparting a variable movement to the latter, as set forth.

12. A machine for soldering the tops and bottoms on cans, comprising an endless-chain carrier, rotary clamping-plates mounted on the links of said carrier, one of said plates being spring-actuated, a stationary rack-bar and gear-wheel connections between the same and said spring-actuated plates, whereby as the carrier passes by a rack-bar, a can, frictionally held by the clamping-plates, will be rotated, carriages and solder-feeding mechanism thereon, a cam-wheel, and connections between the same and said carriage for imparting variable reciprocating movements to said carriages, as set forth.

13. A machine for soldering tops and bottoms on cans, comprising an endless-chain carrier, clamping-plates carried by each link of the chain carrier, one of said plates being swiveled and the other being spring-actuated, a stationary rack-bar, and gear connections between the same and said spring-actuated clamping-plate, whereby as the carrier travels by the rack-bar, said spring-actuated plate will be positively driven, a horizontally-disposed and longitudinally-movable solder-feeding apparatus adapted to travel adjacent to the rotating cans, as set forth.

14. A machine for soldering tops and bottoms on cans, comprising an endless-chain carrier, a clamping-plate mounted on each link of the chain carrier, one of said plates being spring-actuated, a shaft secured to said spring-actuated plate, a gear-wheel rotating with said shaft, a horizontally-disposed rack-bar, gear connections between said rack-bar and gear-

wheel on said shaft, and guard-wings carried by the link and adapted to partially surround the can, and reciprocating horizontally-disposed solder-carrying apparatus designed to move adjacent to the rotary cans, as set forth.

15. A machine for soldering tops and bottoms on cans, comprising an endless carrier, a yoke secured to each link, a clamping-plate swiveled at the end of said yoke, a guard-plate adapted to partially surround the can, a clamping-plate with a shaft secured thereto, a sleeve journaled in the link, said shaft being splined to said sleeve, a spring-actuated lever pivoted at one end to the link and fastened to said shaft, a spring secured at one end to said lever and at its other end fastened to the link, and solder-feeding mechanism adapted to travel with the carrier and adjacent to successive cans during the soldering process, as set forth.

16. A machine for soldering tops and bottoms on cans, comprising an endless carrier, a yoke secured to each link, a clamping-plate swiveled at the end of said yoke, a guard-plate adapted to partially surround the can, a clamping-plate with a shaft secured thereto, a sleeve journaled to said link, and in which sleeve, said shaft is splined, a spring-actuated lever pivoted at one end to the link and fastened to said shaft, a spring secured at one end to said lever and at its other end fastened to the link, antifriction-rollers carried by said lever, and tracks on which said rollers travel while the clamping members are in engagement with the tops and bottoms of a can, and solder-feeding mechanism adapted to travel with the carrier and adjacent to two or more consecutive cans, while the soldering is being effected, as set forth.

17. A machine for soldering tops and bottoms on cans, comprising an endless carrier, a yoke secured to each link, a clamping-plate swiveled at the end of said yoke, a stop-plate adapted to partially surround the can, a clamping-plate with a shaft secured thereto, a sleeve journaled in the link, and in which sleeve said shaft is splined, a spring-actuated lever pivoted at one end to the link and fastened to the shaft, a spring secured at one end to said lever and at its other end fastened to the link, antifriction-rollers journaled on said lever, a frame on which the carrier is mounted, yokes secured to said frame, and tracks carried by said yokes, and on which tracks said antifriction-rollers are adapted to travel while the clamping members are in engagement with the tops and bottoms of a can, and the solder-feeding mechanism adapted to travel with the carrier and adjacent to two or more consecutive cans while the soldering is being effected, as set forth.

18. A machine for soldering tops and bottoms on cans, comprising an endless carrier, a yoke secured to each link, a clamping-plate swiveled at the end of said yoke, a stop-plate adapted to partially surround the can, a clamping-plate with a shaft secured thereto, a sleeve journaled to each link, and in which sleeve said shaft is splined, a gear-wheel keyed to said sleeve, a rack-bar, a gear-wheel adapted to engage said rack-bar and in mesh with the gear on said sleeve, a spring-actuated lever pivoted at one end to the link, collars for holding said lever to said shaft, antifriction-rollers journaled on said lever, a frame on which the carrier is mounted, yokes secured to said frame, tracks carried by said yokes and on which tracks the antifriction-rollers are adapted to travel while the clamping members are in engagement with the tops and bottoms of the cans, and feeding mechanism adapted to travel with the carrier and adjacent to two or more consecutive cans, while the soldering is being effected, as set forth.

19. A machine for soldering tops and bottoms on cans, comprising a frame, an endless carrier traveling thereon, clamping means held by each link of the carrier and means for rotating the can as it travels with the carrier, a reciprocating carriage, solder-feeding mechanism carried thereby comprising a set of friction driving-wheels between which a wire of solder is driven, an operating-shaft, a grooved cam rotating therewith, a pivoted lever mounted on the frame of the machine and having a lug traveling in the grooves of said cam, an oscillating lever having connection with said carriage, pivotal link connections between said levers, a cam on said shaft, and a rod having a forked end, an antifriction-roller on said rod engaging said cam, a ratchet-and-pawl gear connection, actuated by said rod, whereby solder is fed against the cans while said carriage is traveling with the carrier, as set forth.

20. A machine for soldering tops and bottoms on cans, comprising an endless carrier, means for holding and rotating cans on said carrier, a reciprocating carriage, an oscillating lever for actuating said carriage, a grooved cam, an operating-shaft on which the same is mounted, a pivoted lever with antifriction-roller thereon, which latter travels in the groove of said cam, pivotal link connections between said levers, a cam on said shaft, a forked rod actuated thereby, a pivotal lever, a spring-actuated pawl thereon, a ratchet-wheel on the shaft on which said pawl-carrying lever is mounted, said forked rod being adjustably held to the pawl-carrying lever, grooved friction feeding-wheels between which a wire of solder is adapted to be fed against a can while the solder-feeding mechanism and carrier are traveling together during the solder-feeding process, and gear connections between the ratchet-wheel and said feeding-wheels, as set forth.

21. A machine for soldering tops and bottoms on cans, comprising an endless-chain carrier, means carried by each link of the carrier for clamping and rotating a can with tops and

bottoms thereon, an oscillating lever, an operating-shaft, a grooved cam rotating therewith, a pivoted lever having a roller adapted to travel in the groove of said cam, pivotal link connections between said levers, two reciprocating carriages, solder-feeding mechanism carried by said carriages, the opposite ends of the oscillating lever adapted to actuate the carriages simultaneously in opposite directions, cams mounted on the operating-shaft, forked rods, antifriction-rollers on said rods, actuated by said cams, said rods adapted to operate the solder-feeding mechanism, adjustable collars mounted on said rods, and a spring connecting said collars, as set forth.

22. A machine for soldering tops and bottoms on cans, comprising an endless-chain carrier, a frame on which the carrier is mounted, antifriction-wheels journaled on said frame, the links of the chain carrier adapted to ride upon said antifriction-wheels, keepers adapted to hold said links in contact with the antifriction-wheels, can-clamping plates carried by the links of the chain, a rack-bar fastened to the frame, a gear mechanism in mesh with said rack-bar adapted to rotate the cans held by the clamping-plates, a solder-feeding mechanism adapted to travel with the carrier and adjacent to consecutive cans, and means for actuating the solder-feeding mechanism, as set forth.

23. A machine for soldering tops and bottoms on cans, comprising a frame, an endless-chain carrier mounted thereon, clamping-plates carried by each link of the carrier, a horizontally-disposed rack-bar and geared connections therewith for rotating one of said clamping-plates, a reciprocating carriage mounted horizontally adjacent to the carrier, an oscillating lever, adapted to actuate said carriage, frictional feed-wheels having grooved circumferences, and mounted on the solder-carriage and between which a wire of solder is adapted to be fed against a rotary can, guideways on the opposite sides of the frictional feed-wheels through which the wire is fed, and means for positively rotating the solder-feeding wheels, as set forth.

In testimony whereof we hereunto affix our signatures in presence of two witnesses.

JOHN GEORGE REHFUSS.
MARTIN O. REHFUSS.

Witnesses:
HENRY PENNINGTON,
JOS. ZIEGLER.