March 10, 1931. R. A. JONES 1,796,253

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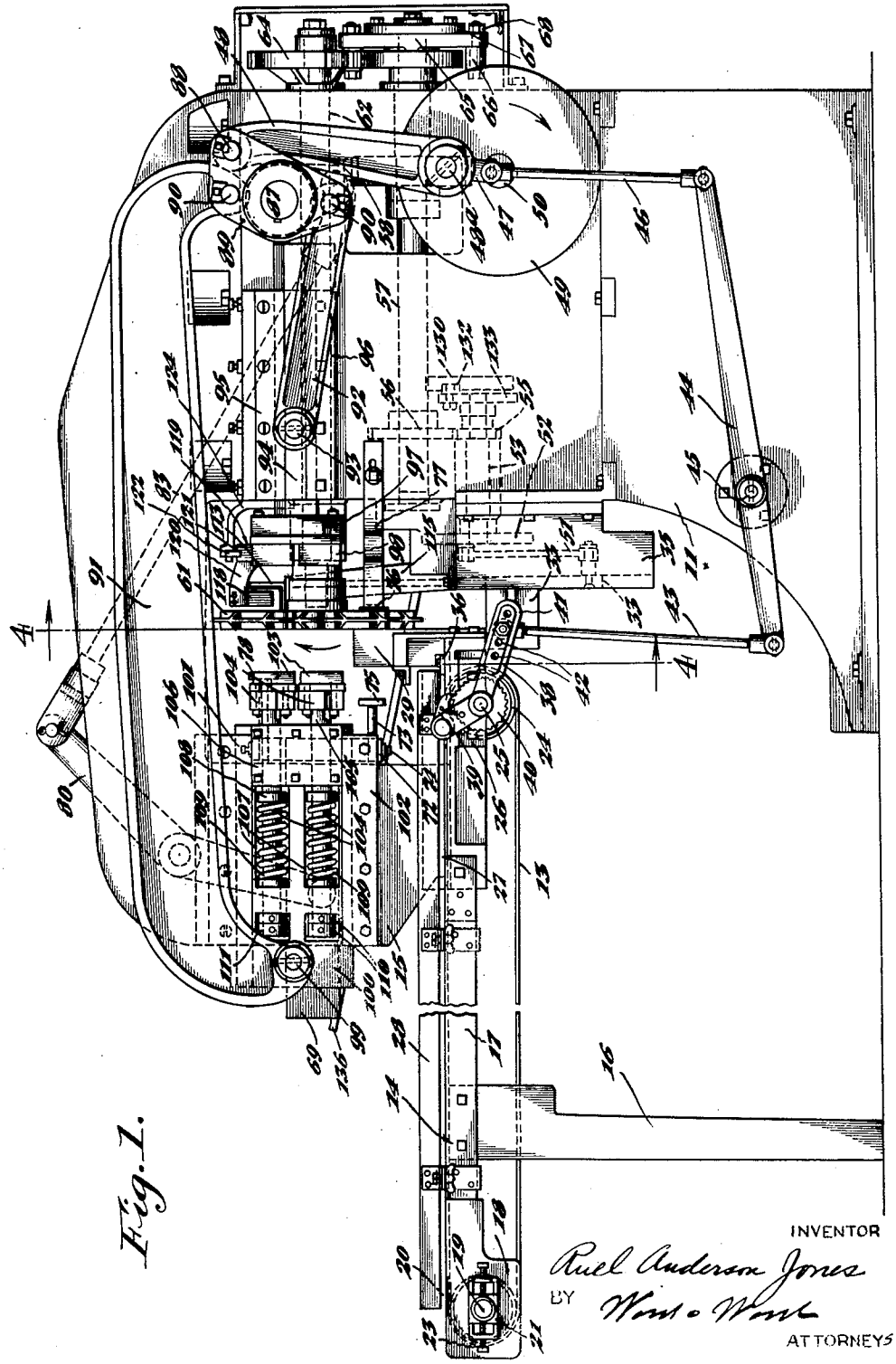

Fig. 1.

INVENTOR

Ruel Anderson Jones

BY Wins & Wins

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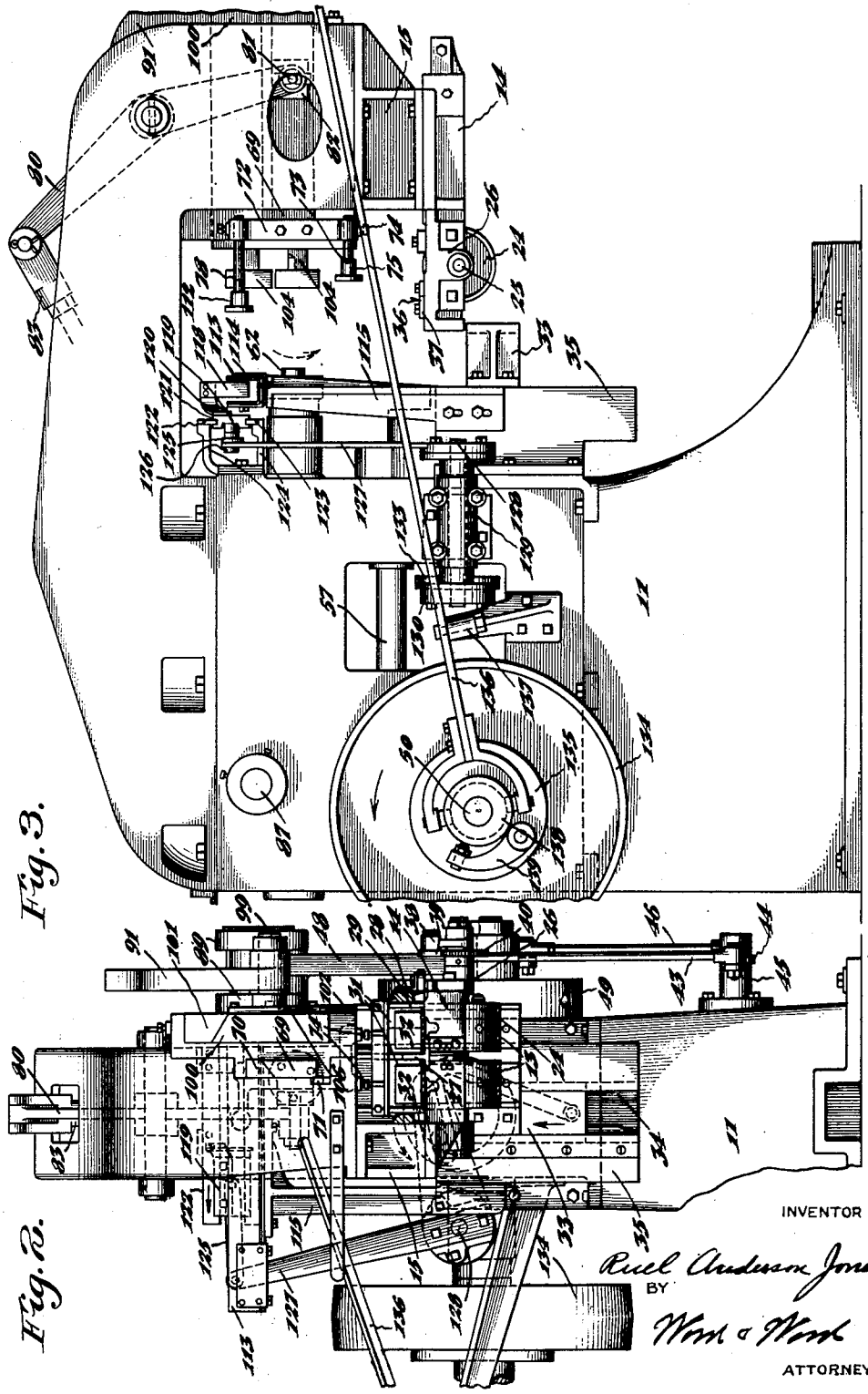

Fig. 2.

Fig. 3.

INVENTOR

Ruel Anderson Jones

BY

Wm. & Wm.

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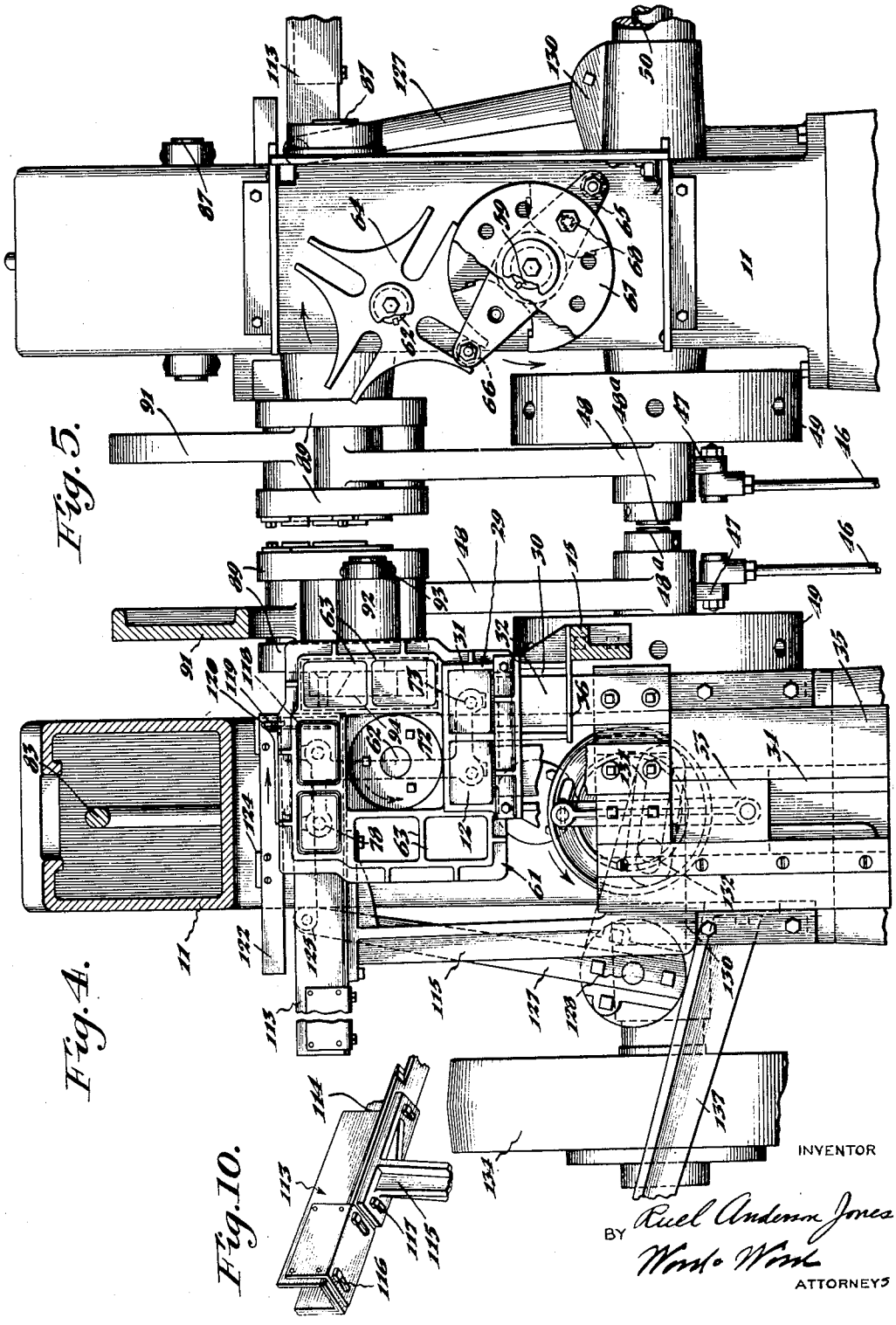

Fig. 5.

Fig. 4.

Fig. 10.

INVENTOR

BY Ruel Anderson Jones

Wood & Wood

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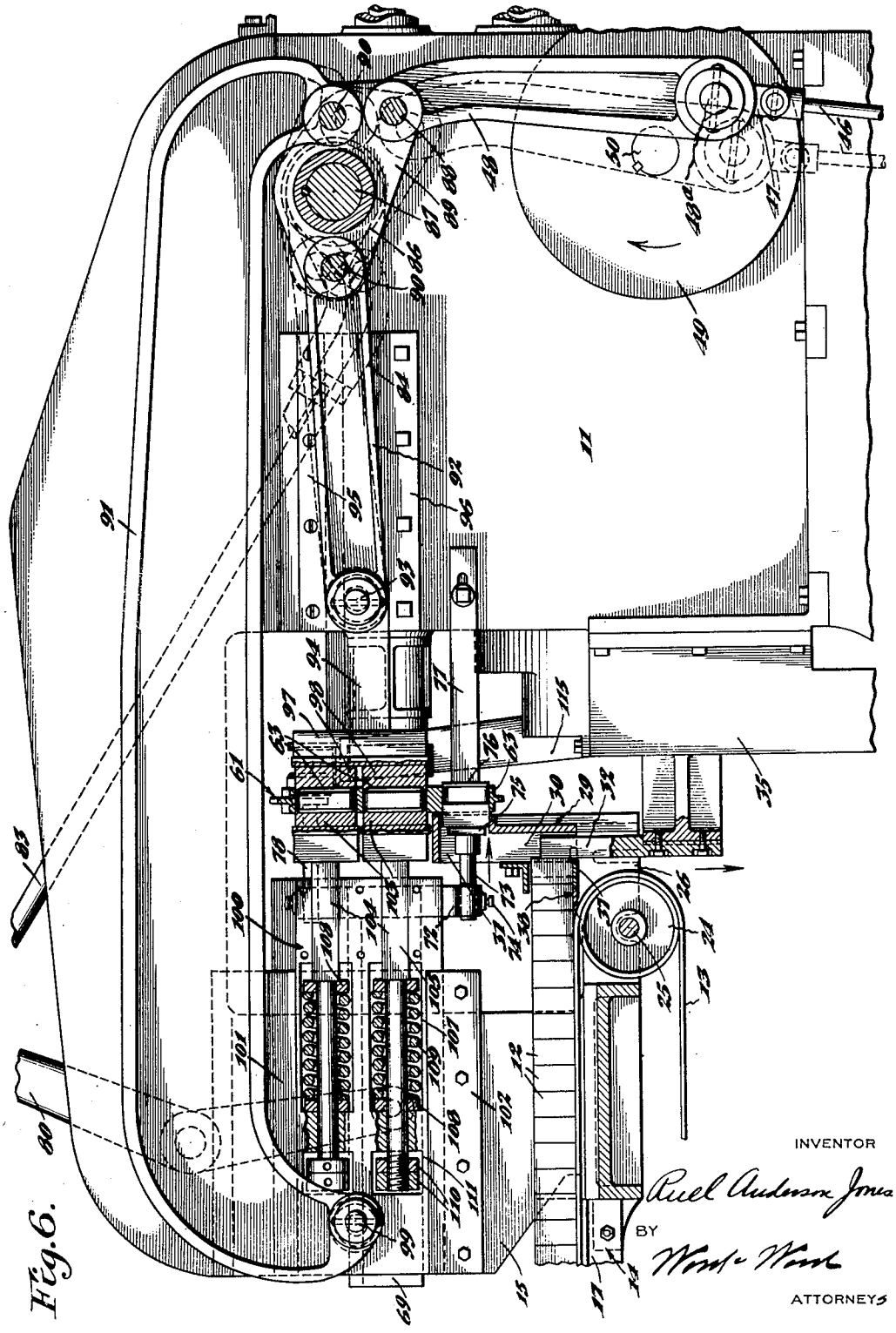

Fig. 6.

INVENTOR

Ruel Anderson Jones

BY

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March 10, 1931. R. A. JONES 1,796,253

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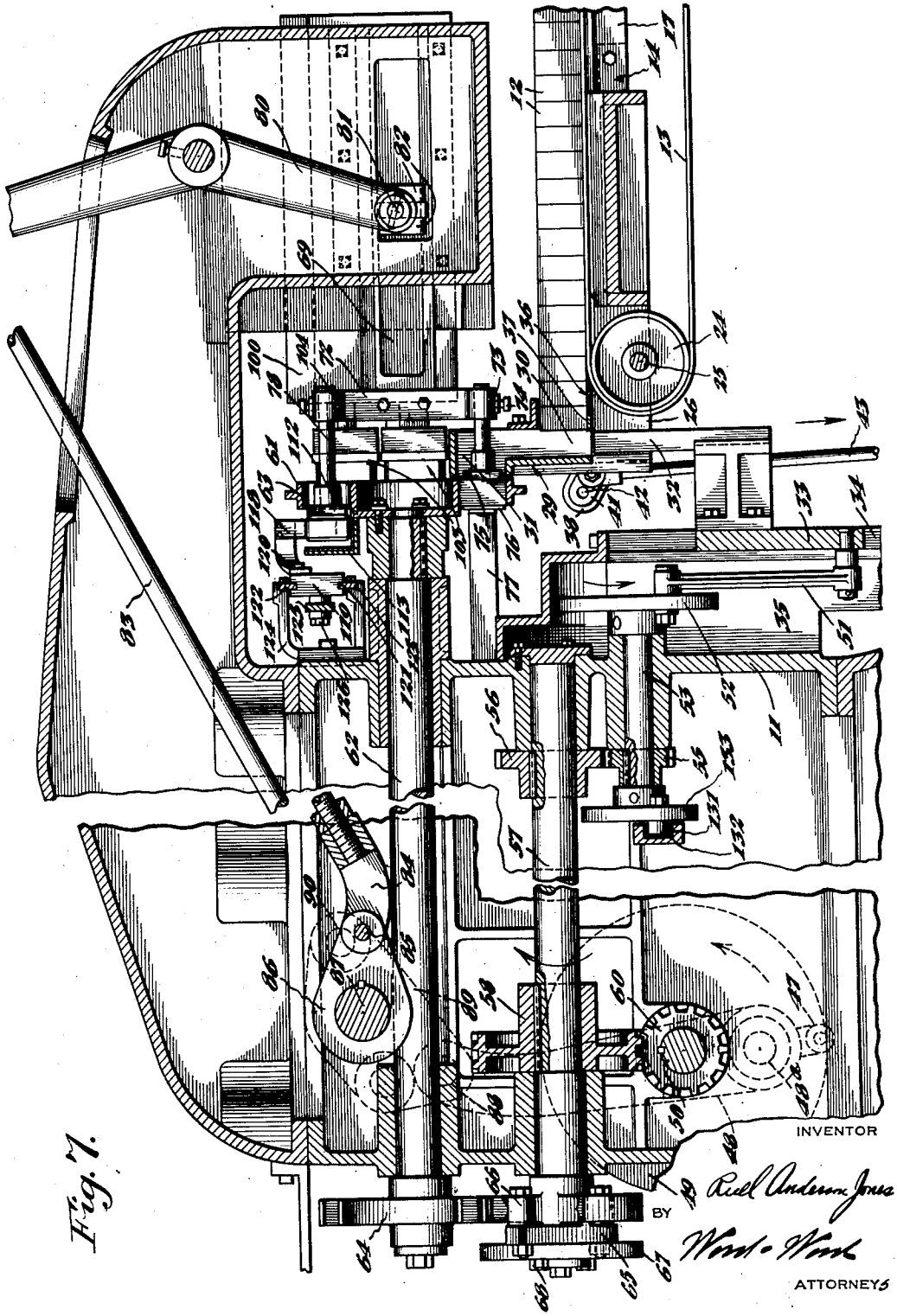

Fig. 1.

INVENTOR

BY Reed Anderson Jones

Wood & Wood

ATTORNEYS

March 10, 1931. R. A. JONES 1,796,253

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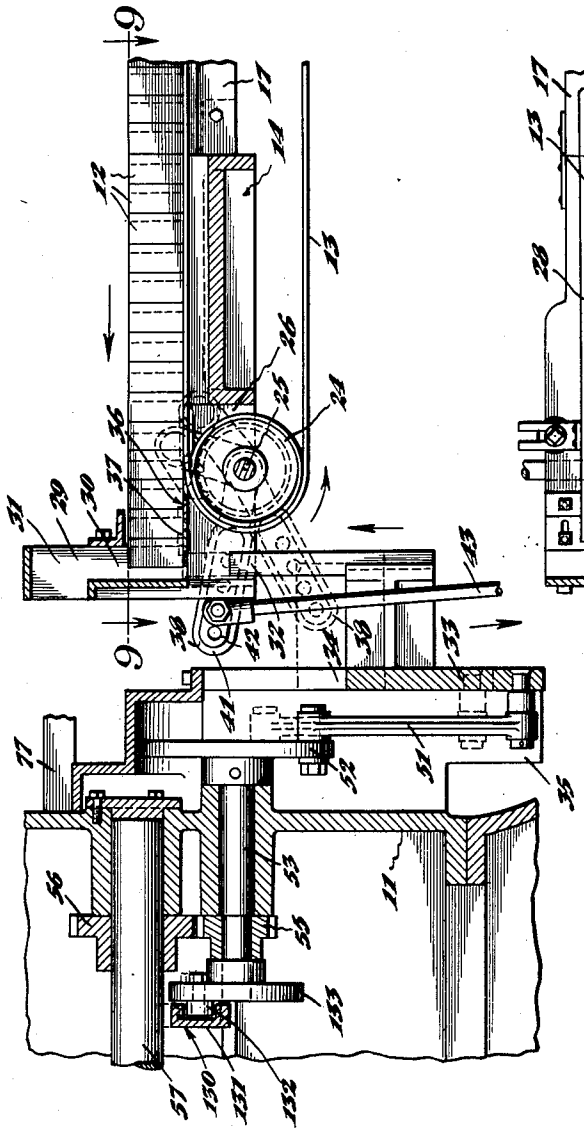

Fig. 8.

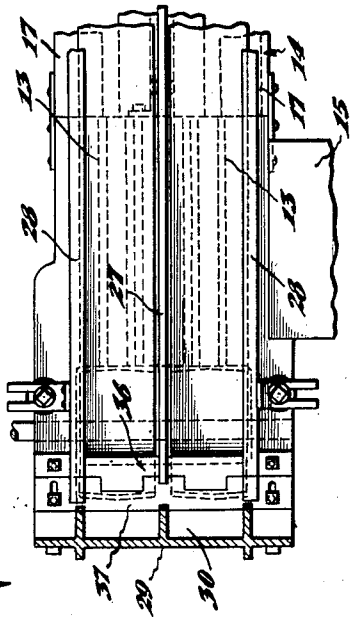

Fig. 9.

INVENTOR

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BY

Wood Wood

ATTORNEYS

Patented Mar. 10, 1931

1,796,253

UNITED STATES PATENT OFFICE

RUEL ANDERSON JONES, OF COVINGTON, KENTUCKY, ASSIGNOR TO R. A. JONES & COMPANY, INC., OF COVINGTON, KENTUCKY, A CORPORATION OF KENTUCKY

SOAP PRESS

Application filed November 9, 1928. Serial No. 318,209.

This invention relates to improvements in machines for pressing plastic material, such as soap, into cake form and is particularly directed to a type of machine having a rotary carrier providing mold openings, which carrier is serially stationed by periodic rotation for the various steps in the handling of the material, such as the loading of the carrier, cooperative positioning of the loaded openings relative to pressing dies to form a pressing chamber and discharging of the finished product.

It is therefore an object of this invention to provide an improved mechanism relative to a rotary carrier for cooperation with the mold openings thereof at a primary or loading station, for feeding the crude plastic cakes into the rotary carrier.

Another object is to provide an improved mechanism for actuating pressing dies, this mechanism synchronizing with the movement of the carrier and adapted to cooperate therewith at an advanced or loaded station to press the soap within the mold apertures, to provide a mechanism incorporated in the die movement for permitting the proper compressibility in die engagement to govern the pressure applied to the soap, and to further provide die operating means for imparting successive pressures to each bar of soap in a single cycle of movement of the means.

Another object is to provide a mechanism relative to a further advanced or discharge station of the carrier, for moving the discharged or finished product from a point adjacent the carrier to a suitable conveyor.

Another object is to provide a machine of this type which performs each of the serially arranged foregoing operations on a plurality of the articles simultaneously, thereby increasing the output of the machine.

Another object is to provide a die pressing mechanism which operates a plurality of dies simultaneously and in which the respective dies are cushioned independently so that they automatically adjust to accommodate for variations in the quantity of material upon which they act and thereby produce articles which are uniformly pressed and sharply contoured.

Further objects and advantages will be more fully set forth in a description of the accompanying drawings, forming a part of this specification, in which:

Figure 1 is a side elevation of the complete soap press, this view illustrating the various feeding and pressing mechanisms at rest and the rotary soap carrying frame midway between stations.

Figure 2 is a view of the intake end of the machine showing the soap intake conveyor belts in section.

Figure 3 is a side elevation of the machine looking at the machine from the discharge side or the side opposite to that shown in Figure 1, the carrier and loading mechanism at the end of the conveyors being removed from the machine to simplify the view.

Figure 4 is a sectional view taken on line 4—4, Figure 1, detailing the rotary soap frame or carrier in face view and the mechanisms adjacent thereto.

Figure 5 is a view of the rear end of the machine.

Figure 6 is an enlarged view similar to Figure 1, various parts of the mechanism being shown in section, the soap pressing dies being shown in soap pressing position, and the rotary soap carrier frame being reloaded and unloaded.

Figure 7 is a view taken longitudinally of the machine, this view showing the rotary carrier frame reloaded and the finished soap discharged, the pressing dies being retracted and the soap lifter in position to receive the next bars from the conveyor.

Figure 8 is a fragmentary view of a portion of Figure 7, illustrating the conveyor belts moving forward to deposit the bars of soap in the path of the lifter plungers.

Figure 9 is a sectional view taken on line 9—9, Figure 8, showing the conveyor belts in plan view and the relation of the intake conduit thereto.

Figure 10 is a perspective view of the discharge trough removed from the machine.

The crude blocks of soap are fed into the machine over a dual conveyor, the respective belts of the conveyor moved by an intermittent motion device for feeding two cakes of

soap into the mechanism for each quarter turn thereof and each movement of the various mechanisms.

The conveyor in its intermittent motion moves the blocks of soap into conduits in the path of reciprocating lifter plungers which elevate the soap to a plane for engagement by horizontally moving feeder plungers at which time a pair of mold openings in the rotary carrier frame is in alignment with the feeding plungers.

Upon retraction of the feeding plungers the rotary carrier frame is rotated a quarter of a turn by a Genéva gear movement which brings the loaded openings in alignment with pairs of dies coming in from the respective opposite sides thereof, these dies being operated from a common eccentric plate and pressing the soap in the desired shape within the mold openings. Thereupon the rotary carrier frame is turned a quarter of a turn and the pressed bars of soap are brought into alignment with ejector plungers which push them laterally from the carrier frame into a discharge trough. A feed slide moving through the discharge trough pushes the finished products through the trough and discharges them laterally of the machine.

Every time the fully loaded carrier frame is moved a quarter of a turn, three distinct functions thereupon take place; two bars of soap are ejected, two are pressed, and two are fed thereinto so that it may be said that upon each quarter turn of the carrier frame all mechanisms of the machine perform their respective functions.

Referring to the drawings illustrating an embodiment of the mechanism performing in the above described manner, the details thereof are as follows:

The frame of the machine, indicated at 11 is cast hollow and provides a body portion, and an overhanging forward end, the throat formed between the overhanging portion and the body being the location where the various operations are performed on the article.

The soap is fed into the machine in a pliable condition and in this instance is cut in crude rectangular blocks indicated in the drawings at 12. These blocks are fed in rows on conveyor belts 13 mounted in a rack 14, this rack being suspended from the overhanging end of the frames by means of a bracket 15 bolted to the underside thereof, and at the other or outer end being mounted on standards 16.

Angle iron lengths 17—17, are secured to the bracket 15 at their inner ends, and at their outer ends carry a journal frame 18 mounting the shaft 19 for a pair of conveyor belt pulleys 20—20, the shaft being adjustably mounted in bearing blocks 21 slidable in the journal frame 18 and adjustably set by means of set screws 23. A second pair of pulleys 24—24, is secured to a cross shaft 25 journaled in the side flanges 26 of the bracket 15.

The conveyor belts passing around the respective aligned pulleys at each end of the conveyor frame, pass along the top of the frame, the angle iron lengths being secured flush with the top of the bracket. As shown in Figures 2 and 9, the respective conveyor belts are slightly spaced apart and a partition extends longitudinally therebetween, this partition being in the nature of a T-iron length 27 countersunk in the bracket. The row of blocks 12 being fed into the machine on each belt are guided at the outer longitudinal edge of the belts by means of guide rails 28 laterally adjustably mounted on the frame to accommodate for the particular length of blocks being fed.

At the inner end of the conveyor frame, the blocks of soap 12 are discharged into the lower end of a vertically disposed conduit 29 bolted to the bracket, the conduit providing a vertical passageway 30 at the discharge ends of each conveyor belt. The conduit passageways are open at the base ends and enter horizontal passageway portions 31 which are adapted to be traversed by plungers moving the block of soap into the mold openings of the carrier. The vertical conduit passageways are traversed by plungers 32 secured to a slide 33 vertically reciprocable in a slideway 34 formed in a casing 35 bolted to the body of the frame 11.

A two-piece take-off plate 36 is secured to the top face of the bracket 15 at the conduit end of the conveyor frame, one element 37 of the plate being adjustable toward and from the lifter plungers 32—32 in order to provide that the bars of soap being displaced from the conveyor belts and from the plate 36 are disposed in proper alignment for engagement by the lifter plungers.

The conveyor belts 13 are intermittently fed by means of a pawl and ratchet mechanism. A bell crank lever 38 is loosely mounted on the outer end of the inner pulley shaft 25, one arm of the bell crank lever carrying a pawl 39 spring urged into engagement with the teeth of a ratchet wheel 40 secured to the shaft 25. The other arm 41 of the lever is provided with a series of apertures 42 for adjustable connection to a link 43, the opposite end of which is pivotally connected to one end of a lever 44 fulcrumed on a bearing standard 45 secured to the frame 11, the opposite end of the fulcrumed lever being connected to an eccentric movement by means of a link 46. The link 46 is connected for actuation from the eccentric movement by virtue of its connection to a depending lug 47 formed on the lower end of a die crank lever 48 (see later description) in direct connection with an eccentric pin 48ª provided on a flywheel 49 secured to the main drive shaft 50 of the machine.

The means for reciprocating the lifter plungers 32 is of the following nature:

A pitman 51 is connected at its lower end to the wrist pin of the slide 33 and at its upper end to the crank pin of the crank wheel 52 secured to the forward end of a shaft 53, this crank mechanism being housed in the before-mentioned casing 35. The shaft is driven by means of a gear 55 keyed thereto and in mesh with a companion gear 56 keyed to a shaft 57 journalled in the respective end walls of the body of the frame 11. A spiral gear 58 is keyed to the shaft 57 toward the rear end of the machine, and is in mesh with a companion spiral gear 60 keyed to the main drive shaft 50 which extends crosswise of the frame and is suitably journalled in the side walls thereof.

The rotary carrier 61 is secured to the end of a shaft 62 journalled longitudinally of the body portion of the frame 11, the rotary carrier 61 being disposed for rotation in the vertical plane with pairs of mold openings 63 therein moving into periodic alignment with the horizontal discharge passageways in the conduits. As shown in Figure 4, the rotary carrier has the pairs of mold openings 63 formed laterally therethrough, the openings, regarded in pairs, being disposed at right angles to each other, in the same relation to the axis of rotation and along each side of the substantially square rotary carrier.

Intermittent motion is imparted to the rotary carrier for causing each pair of mold openings to be disposed adjacent the loading conduits upon 90° of carrier revolution. This movement is imparted by means of a Geneva gear movement at the opposite end of the machine, the slotted follower or star wheel 64 of the Geneva gear movement providing four points and being keyed to the outer end of the rotary carrier driving shaft, and the driver 65 of the movement providing a pair of diametrically disposed rollers 66 cooperating with the slots of the first mentioned element to impart a quarter turn to the rotary carrier driving shaft upon a half turn of the driver of the Geneva gear, this driver 65 being loosely mounted on the outer end of the before-mentioned lifting element driving shaft 59.

A collar 67 is keyed to the shaft adjacent the Geneva gear driver and provides a series of apertures therethrough selectively traversible by screws 68 which connect the keyed driving collar 67 to the loosely mounted driver 65. This adjustment is provided in order to vary the movement of the rotary carrier relative to the movement of the pressing dies as will be hereinafter described.

In order to move the elevated bars of soap from the conduits into the aligned mold openings of the rotary carrier, a loading device is provided of the following nature:

A slide 69 is horizontally slidably mounted in the overhanging portion of the frame, being suitably guided and slidably maintained by means of the usual gib plate 70 and guide block 71. A yoke element 72 is secured to the inner end of the slide and has a pair of lower forwardly extending rods 73 adjustably secured therein by means of set screws 74, these rods traversing the discharge passageways of the conduits. The rods carry shoes 75 at their outer ends having wide faces for engagement with the bars of soap.

A plate 76 is provided extending across behind the pairs of mold openings and adjustably secured to the main frame by a bracket 77, this plate limiting loading movement of the bars into the mold openings. A pair of ejector rods 78 is provided at the upper side of the horizontally movable pusher yoke element 72 for the purpose of discharging the finished product from the upwardly disposed mold openings. The yoke element thus loads and unloads the carrier in the same movement and the dies act at the side or intermediate position of the mold openings.

The slide 69 is reciprocated by means of a bell crank lever 80 journalled in the overhanging portion of the frame above the slide, one arm of the bell crank lever carrying a wrist pin 81 having a headed end engaged between a pair of spaced bosses 82 cast on the slide. The upper end of the bell crank lever extends through a slot in the top of the frame and is connected to one end of a link 83, the other end of the link carrying a yoke 84 adjustable thereon, the arms of the yoke 84 being pivotally connected to the eccentric pin 85 of an eccentric plate 86 keyed to a rocker shaft 87 disposed crosswise to the frame and journalled in its respective side walls. The rocker shaft 87 is oscillated by means of the crank lever 48 as will be described in the description of the mechanism for operating the die.

The before-mentioned crank lever 48 as described, has its lower end connected to the crank pin 48[a] of the flywheel 49 and its upper end is connected to a cross pin 88 extending between and journalled in a pair of die-operating spaced toggle plates 89 keyed to the rocker shaft 87 on the outer end thereof exteriorly of the frame. The toggle plates also carry a pair of cross pins 90 diametrically related relative to the rocker shaft, the connection of the crank lever 48 to its cross pin being toward the rear of these diametrically related pins.

A pair of pitmen, 91, 92, forward die-operating and rear die-operating respectively, have their adjacent ends connected to the diametrically related cross pins. The lower pitman 92 is comparatively short in length and has its outer end connected to the wrist pin 93 of a horizontally mounted slide 94. The slide is mounted on the side wall of the

frame in a slideway and is maintained therein by means of a gib plate 95 and overhanging plate 96.

One end of the slide 94 disposed toward the rotary carrier is provided with a headed portion 97 providing an attaching face for a pair of dies 98—98, these dies in their reciprocation being in perfect alignment with a pair of the mold openings 93 when the rotary carrier is at rest. The upper or long pitman 91 is connected at its outer end to the wrist pin 99 of a forward die-carrying slide 100, this slide being maintained in a slideway parallel with the rear die slide and in the overhanging portion of the frame by means of a gib plate 101 and overhanging plate 102.

Forward dies 103—103 are mounted on the headed ends of individual rods 104—104 slideably mounted parallel with and in the slide. The portion of each slide rod adjacent the head thereof is square at at 105, moving in a square channel in the side face of the slide and a plate 106 is attached to the side of the slide by means of screws for maintaining the slide rods against rotation within the channels.

The rods 104 pass through respective lateral openings 107 in the slide and a pair of washers 108 is provided on each rod, one washer being disposed against a shoulder formed by the termination of the squared portion and the other being slideably disposed against the opposing wall of the lateral opening.

A coil spring 109 is disposed within each lateral opening under compression between the washers 108—108. A pair of adjustment nuts 110 is screwed onto the forward end of each rod, these nuts engaging the respective side walls of a second pair of openings 111 for limiting the action of the compressed springs, the nut housing openings 111 being of sufficient dimension to allow movement of the nuts relative thereto under spring compression. The springs compress under die engagement and cushion the engagement of the dies with the cakes of soap being pressed. The dies are easily removable from the respective slide heads and may be of any desired formation.

The pairs of dies as mounted on the respective slide heads are disposed one above the other and act upon the soap in what may be termed an intermediate station of the carrier, the carrier having been brought up a quarter of a turn from the loading station. Each forward die exerts an individual spring-governed yielding pressure on the soap. Thus, if two cakes of soap to be simultaneously pressed in a pressing cycle are not uniform as to size or contain air holes, the respective dies are free to take up for the loss of material and a requisite pressure is always imparted to each cake sufficient to form and pack the material.

The toggle plates 89 are moved by means of the crank lever, and in combination with the pitmen or toggle levers 91, 92 impart great force to the dies. The movement of the diametrically related pins and the swing of the eccentric plate is past dead center and to a position shown in dotted lines in Figure 6, the point of greatest pressure being indicated in full lines in this view.

This movement of the toggle elements past dead center imparts a double die pressing action on each pair of cakes, there being a slight retraction of the dies in the period of movement past dead center. This double action insures a solidly pressed article with the material permanently set, the slight retraction permitting any air to escape which might be trapped between the dies. There is also a longer period over which pressure is being exerted on the soap, this aiding in the permanent formation of the finished product.

The third step or discharging operation is performed on the pressed bars of soap after they are moved a quarter turn from the pressing position. The before-mentioned soap discharging rods 78 have shoes 112 on their outer ends and move into engagement with the pressed bars of soap resting within the mold openings as the previously described loading operation is being performed by the lower pusher rods 73.

As shown in Figures 4, 7, and 10, a trough 113 extends laterally of the machine from a point just in back of the upper portion of the rotary carrier, this trough 113 being cut away adjacent the mold openings as at 114 and being supported on a standard 115 adjustably secured to the side of the casing 35. The standard is vertically adjustable so as to correctly align the base of the trough with the base of the mold openings as shown in Figure 7. The trough is also adjustable as to width (see Figure 10) by means of a slotted connection 116 of the side wall thereof relative to the base, and the trough is adjustable relative to the carrier by means of a slotted connection 117 to the standard.

A pusher blade 118 extends vertically into the trough and is movable longitudinally thereof from a point beyond the cakes of soap as pushed into the trough to slide them through the trough to any sort of a conveyor extending from the machine. The blade 118 is secured to a slide 119 by means of a bracket 120, the slide having its top and bottom edges longitudinally slotted as at 121 for engagement with top and bottom rails 122, 123, these rails being secured to brackets 124 attached to the frame.

A link 125 is connected to the wrist pin 126 of the slide 119 and to a lever 127 secured to a stub shaft 128 journalled in a bearing

129 secured to the side face of the frame. The opposite end of the stub shaft 128 carries a lever 130 having its grooved swinging end 131 engaged by the eccentric roller 132 of a rotary element 133 pinned to the end of the shaft 53.

The shaft 50 is driven by means of a driving pulley 134 loosely mounted thereon and a clutch 135 for connecting the pulley to the shaft, this clutch being controlled by means of a lever 136 fulcrumed on a bracket 137. The handle extends to the intake end of the machine. The lever connects to a translatable clutch member 138 actuating the clutch lever 139.

A detailed description of the operation of the machine follows, this description following a pair of the cakes of soap through the machine and describing the operations as they are performed successively on the cakes. It will be understood that the mechanisms are acting upon three sets of cakes simultaneously, that is to say, a pair is being fed into the machine, a pair being pressed, and a pair discharged, these three operations being performed each time the rotary carrier is moved a quarter of a turn.

The blocks of material 12 are fed into the lower end of the intake conduit 29 by means of the intermittently actuated conveyor belts 13. As the blocks are displaced from the plate 36 at the end of the conveyor belts, they are engaged by the upwardly moving lifter plungers 32 and are elevated to a plane within the conduit which is in alignment with a pair of mold openings in the rotary carrier, which may be described as in a loading or lower position.

At the time the blocks are brought into this alignment, the pusher rods 73 for loading the carrier come into engagement with the blocks of soap and move them horizontally into the registering mold openings. (It is simultaneously with this loading movement of these plungers that the three operations are performed on the cakes of soap within a fully loaded carrier.)

As soon as the yoke carrying the loading pusher rods has moved back from the rotary carrier, a quarter turn is imparted to the rotary carrier and the described loaded mold openings are brought into alignment with the incoming dies.

An adjustment is provided as described relative to the Geneva movement for causing the rotary carrier to receive motion just at the time that the dies are passing out of the respective sides of the mold openings. This close synchronism provides that the soap is effectively stripped from the dies and is left in the mold openings. The soap will normally adhere to the side of the mold openings except in some cases where the quality of the material is not conducive to this adhesion.

After the dies have retracted sufficiently to clear the rotary carrier, another full quarter turn being imparted, the pressed bars of soap are then disposed at the upper side of the carrier and in alignment with the discharge pusher rods 78. These rods pass entirely through the carrier and move the soap laterally therefrom into the discharge trough or channel 113, the pusher rods then being retracted to permit the ensuing quarter turn of the carrier to be made.

Intermediate of the discharging of the pressed soap a movement is imparted to the pusher blade 118 in the trough to move the bars of soap laterally from the machine, the pusher blade moving back in time to leave the space clear for the next discharge. Any sort of traveling arrangement may be provided at the end of the trough for receiving the pressed bars of soap.

Having described my invention, I claim:

1. A machine of the class described, comprising, a rotary carrier having mold openings therein parallel with the axis of carrier rotation, a conveyor for moving a row of blocks of soap to a point below the rotary carrier, said mold openings adapted to be successively positioned above said conveyor, a reciprocating lifter plunger for lifting the blocks of soap successively displaced from the end of the conveyor into alignment with a respective mold opening of the carrier, and a loading plunger for pushing the elevated block of soap into the mold opening.

2. A machine of the class described, comprising, a rotary carrier having mold openings therein parallel with the axis of carrier rotation, a conveyor for moving a row of blocks of soap in a direction parallel with the axis of the rotary carrier and below the rotary carrier, a conduit disposed between the end of the conveyor and the rotary carrier, said conduit providing a vertical passageway intersecting a horizontal passageway, said mold openings adapted to be successively aligned with said horizontal passageway, a lifter plunger reciprocating in the vertical passageway for lifting a block of soap disposed from the end of the vertical conveyor into alignment with a respective mold opening of the carrier, and a loading plunger traversing the horizontal passageway of the conduit for pushing the elevated block of soap into the mold opening.

3. A machine of the class described, comprising, a rotary carrier having mold openings therein, a conveyor moving a row of blocks of soap to the take-off thereof below the rotary carrier, a reciprocating lifter plunger moving laterally of the discharge end of the conveyor for elevating the block of soap displaced from the conveyor to a position adjacent the circle of rotation of the mold openings, and a loading plunger for pushing the elevated block of soap from the

lifting plunger into the respective aligned mold opening.

4. A machine of the class described, comprising, a rotary carrier having mold openings therein parallel with the axis of carrier rotation, a conveyor for feeding a row of blocks of soap to a point below the rotary carrier, a conduit disposed between the take-off end of the conveyor and the lower side of the rotary carrier, said conduit providing a vertical passageway intersecting a horizontal passageway, means for successively aligning the mold openings in said carrier with said horizontal passageway, a lifter plunger reciprocating in the vertical passageway for lifting the block of soap displaced from the end of the conveyor into the horizontal passageway and in alignment with a respective mold opening of the carrier, and a loading plunger traversing the horizontal passageway of the conduit for pushing the elevated block of soap into the mold opening.

5. In a machine of the class described, an intermittently rotating carrier having mold openings therein, a reciprocating loading plunger for inserting a block of soap into a registering mold opening, a pair of dies for pressing the soap at the next position of the mold opening, an ejector plunger traversing the mold opening in the ensuing position for ejecting the soap therefrom, a laterally disposed trough extending from the point of the upper mold opening for receiving the discharged soap, and a pusher blade traversing the trough for clearing the discharge space thereof after each discharge.

6. In a machine of the class described, an intermittently rotating carrier having mold openings therein, means for inserting a block of soap into each mold opening registering therewith, a paid of dies for pressing the soap at the ensuing position of each loaded mold opening, means for emptying the mold opening in the next ensuing position, a laterally disposed trough extending from the rear of the upper mold opening for receiving the discharged soap, and a pusher blade traversing the trough for clearing the discharge space thereof after each discharge.

7. In a machine of the class described, an intermittently rotating carrier having sets of mold openings at each side thereof, reciprocating loading plungers for loading blocks of soap into the registering set of mold openings, pairs of dies for pressing the soap at a side position of the mold openings, ejector plungers traversing the upwardly disposed mold openings for ejecting the soap therefrom, a laterally disposed trough extending from the point of the upper mold opening for receiving the discharged soap, and a pusher blade traversing the trough for clearing the discharge space thereof after each discharge.

8. In a machine of the class described, an intermittently rotatable carrier having mold openings therein, an elevating plunger for lifting a bar of soap to a position opposite to each mold opening as the opening is rotated into loading position, a reciprocating loading plunger for loading the block of soap into the mold opening, a pair of dies for pressing the soap at the next position of the loaded mold opening, an ejector plunger traversing the mold opening at an ensuing position of the loaded opening for ejecting the pressed soap therefrom, a laterally disposed channel element extending from the point of the upper mold opening for receiving the discharged soap, and a pusher blade traversing the channel element for clearing the discharge space thereof after each discharge.

9. In a machine of the class described, an intermittently rotatable carrier having mold openings therein, means for loading a block of soap into each successively registering mold opening, a pair of dies for pressing the soap at the next position of the loaded mold opening, a means for imparting a double pressing action to the dies, and an ejector plunger traversing the mold opening at an ensuing position of the carrier for ejecting the pressed soap therefrom.

10. In a machine of the class described, an intermittently rotatable carrier having mold openings therein, an elevating plunger for aligning a block of soap with each mold opening, a reciprocating loading plunger for inserting the block of soap into the registering mold opening, a pair of dies for pressing the soap at the second position of the loaded mold opening, an adjustment device between the carrier movement and the die movement for minutely varying their synchronism, and an ejector plunger traversing the mold opening at the third position of the opening for ejecting the pressed soap therefrom.

11. In a machine of the class described, an intermittently rotatable carrier having mold openings therein, an elevating plunger for aligning a block of soap with each mold opening, a reciprocating loading plunger for loading the block of soap into the registering mold opening, a pair of dies for pressing the soap at the second position of the loaded mold opening, and an ejector plunger traversing the mold opening at the third position of the opening for ejecting the pressed soap therefrom.

12. A die pressing means, comprising, a frame, a rocker shaft mounted therein, a toggle plate secured to said shaft, a pair of slides mounted in the frame, a die on the adjacent end of each slide, a pair of pitmen respectively pivotally connected to the slides and to diametrically opposite cross pins of the toggle plates, a rotary crank element, a crank lever secured between the outer edge of the toggle plate and the rotary crank element, a soap carrying rotary carrier having mold openings therein intermittently rotatable be-

tween the dies, and means for adjusting the intermittent motion of the carrier relative to the movement of the dies.

13. A die pressing means, comprising, a frame, a rocker shaft mounted therein, a toggle plate secured to said shaft, a pair of slides mounted in the frame, a die on the adjacent end of each slide, a pair of pitmen respectively pivotally connected to the slides and to diametrically opposite cross pins of the toggle plate, means for rocking said shaft to bring the dies together, and a carrier moving the articles to be pressed between the dies.

14. A pressing mechanism, comprising, a frame, a pair of slides mounted in said frame, dies mounted on the adjacent ends of said slides, a carrier moving laterally between the dies for disposing the article to be pressed between the dies, a toggle mechanism for operating the slides to bring the dies together, and means for moving the toggle past dead center to impart a double pressing action to the article in each cycle of die movement.

15. A die pressing mechanism, comprising, a frame, a pair of slides mounted therein, a plurality of dies mounted on the adjacent ends of the slides, the dies on one slide being independently yieldably mounted relative to the slide, means for disposing the articles to be pressed between the dies, and means for operating the slides to bring the dies together.

16. A pressing machine, comprising, a frame, a pair of slides mounted in parallelism in said frame, a plurality of dies mounted on the respective adjacent ends of said slides, a plunger for each die of the plurality of dies of one of the slides, said plungers yieldably mounted in said slide, a carrier for disposing the article to be pressed between the dies, and means for reciprocating the slides and bringing the dies together relative to the carrier.

17. A pressing mechanism, comprising, a frame, a pair of slides mounted in said frame, a die mounted on the adjacent end of each slide, a yieldable connection between one of said dies and its slide, a carrier moving laterally between the dies for disposing the article to be pressed between the dies, a toggle mechanism for operating the slides to bring the dies together, and a crank for moving the toggle past dead center to impart a double pressing action to the article in each cycle of die movement.

18. A die pressing mechanism, comprising a frame, a pair of slides mounted therein, a plurality of dies mounted on adjacent ends of the slides, depressible plunger rods slidably mounted longitudinally in one of said slides and each carrying a die of the plurality, means for disposing the articles to be pressed between the dies, and means for operating the slides to bring the dies together.

19. A pressing machine, comprising, a frame, a pair of slides mounted in parallelism in said frame, a plurality of dies mounted on the respective adjacent ends of said slides, a plunger for each die of the plurality of dies in one of the slides, said plungers yieldably mounted in said slide, an intermittently rotating carrier for disposing the article to be pressed between the dies, a toggle mechanism for reciprocating the slides and bringing the dies together relative to the stationary carrier, and means for adjusting the movement of the carrier relative to the movement of the dies.

20. A soap pressing mechanism, comprising, a frame, a rocker shaft mounted therein, a pair of slides mounted in the frame, dies mounted on the respective adjacent ends of the slides, a toggle plate secured to the rocker shaft, a pair of pitmen, one end of each pitman connected to a respective slide, and the other ends connected to the toggle plate, the connections of the pitmen to the toggle plate being at diametrically opposite points, a crank mechanism connected to the plate for rocking the same to move the toggle plate connections to the pitmen past dead center, a plunger for each of the dies mounted in one of the slides, a spring between the plungers and the slide for independently yieldingly mounting each die relative to the slide, and a carrier element for disposing the article to be pressed between the dies.

21. A soap pressing mechanism, comprising, a frame, a rocker shaft mounted therein, a pair of slides mounted in the frame, dies mounted on the respective adjacent ends of the slides, a toggle plate secured to the rocker shaft, a pair of toggle levers, one end of each lever connected to a respective slide, and the other ends connected to the toggle plate, the connections of the levers to the toggle plate being at diametrically opposite points, and means for rocking the plate to move the toggle plate connections to the levers past dead center.

22. A soap pressing mechanism, comprising, a frame, a rocker shaft mounted therein, a pair of slides mounted in the frame, dies mounted on the respective adjacent ends of the slides, a toggle member secured to the rocker shaft, a pair of levers, one end of each lever connected to a respective slide, and the other ends connected to the toggle member, the connections of the levers to the toggle member being at diametrically opposite points, means for rocking the shaft to operate the toggles, a plunger for each of the dies mounted in one of the slides, springs between the plungers and the slide for independently yieldingly mounting each die relative to the slide, and a carrier element for disposing the article to be pressed between the dies.

23. In a machine of the class described, an intermittently rotating carrier having mold openings therein, a reciprocating load-

ing plunger for inserting a block of soap into a mold opening registering therewith, dies for pressing the soap at the next position of the mold opening, an ejector plunger traversing the mold opening in the next ensuing position for ejecting the pressed soap therefrom, and a laterally disposed trough extending from the discharge side of the carrier at the last mentioned position of the mold opening for receiving the discharged soap.

In witness whereof, I hereunto subscribe my name.

RUEL ANDERSON JONES.