

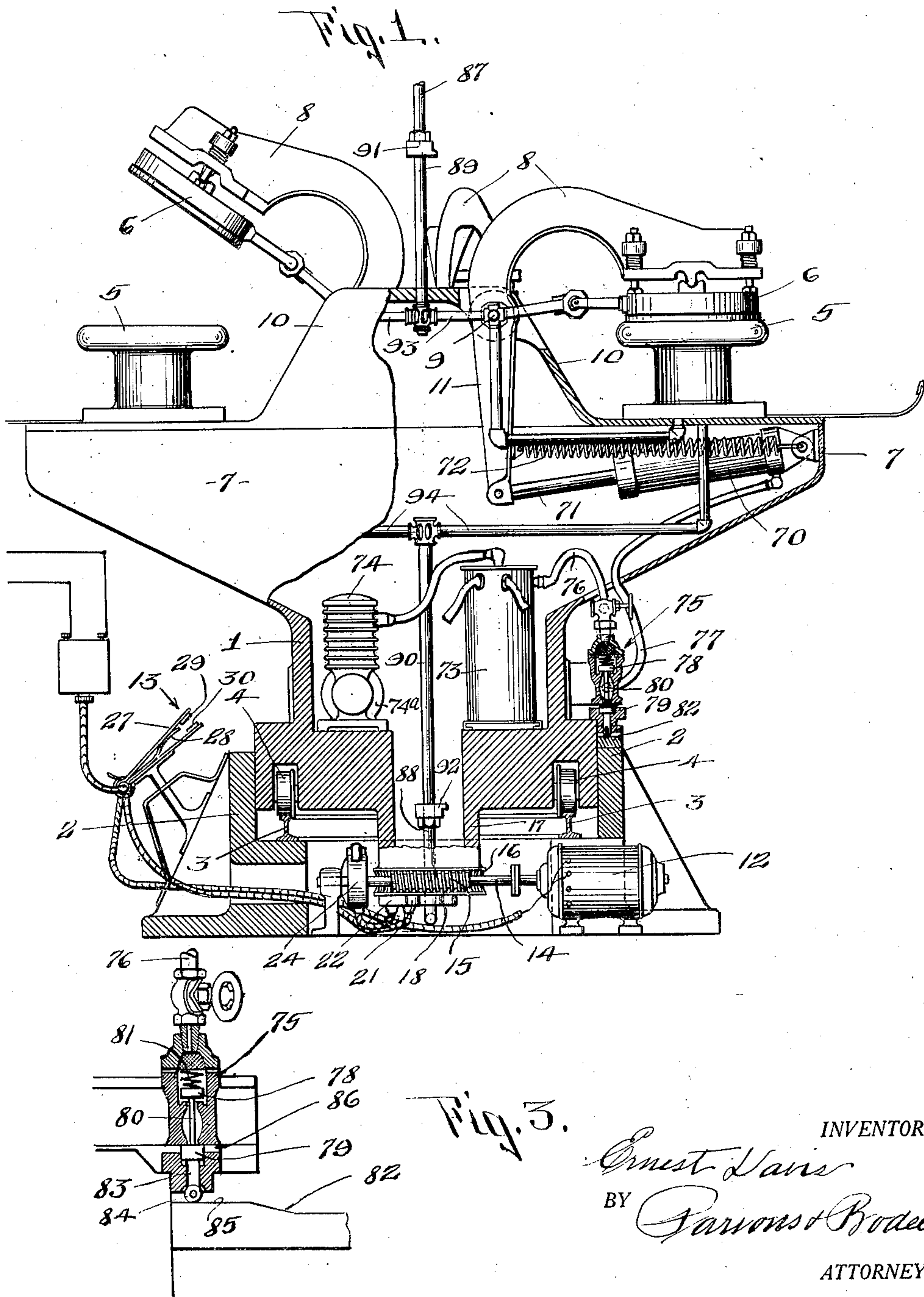
Oct. 7, 1930.

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MULTIPLE PRESSING APPARATUS

Original Filed Oct. 20, 1926 4 Sheets-Sheet 1



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MULTIPLE PRESSING APPARATUS

Original Filed Oct. 20, 1926 4 Sheets-Sheet 2

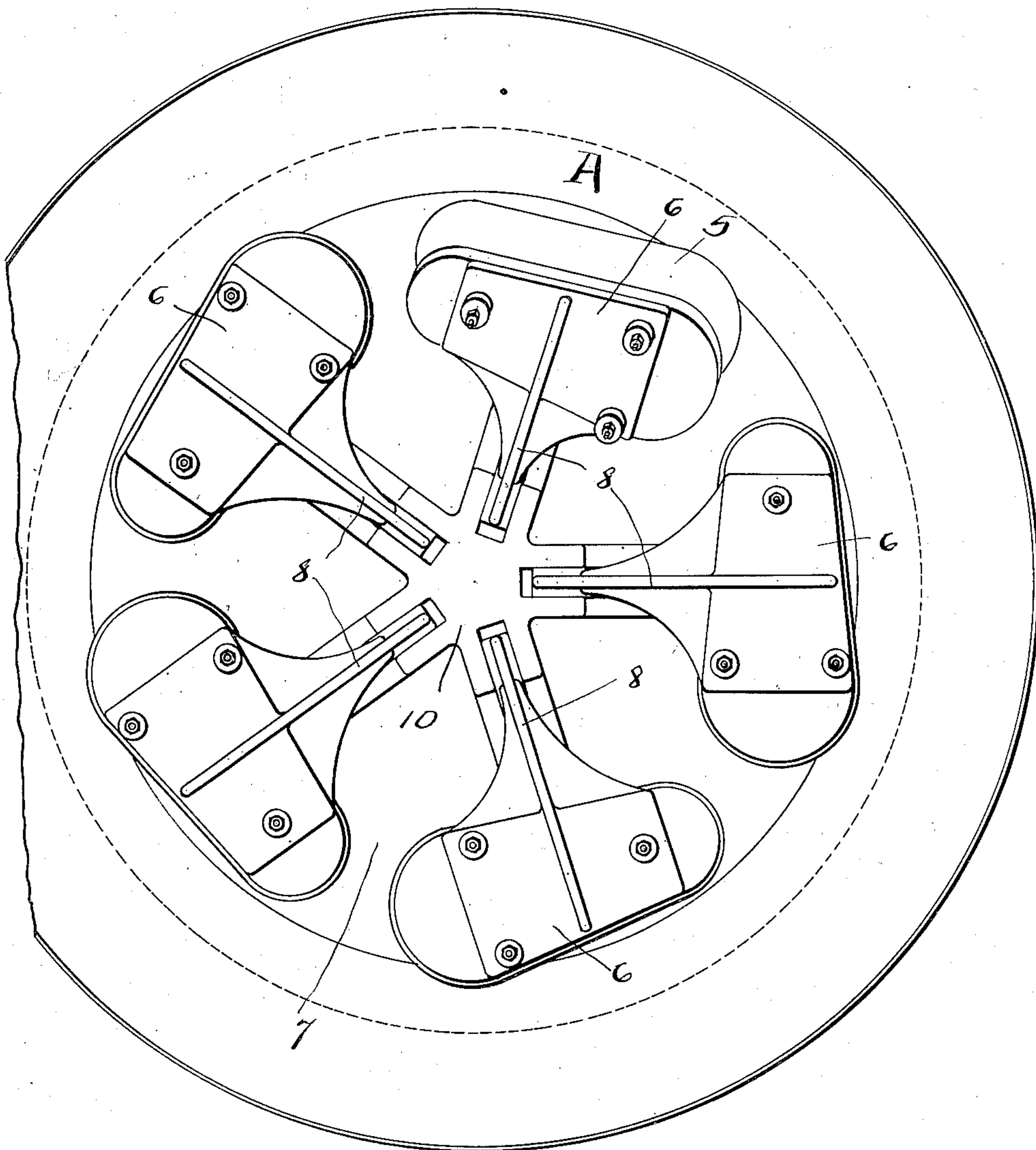


Fig. 2.

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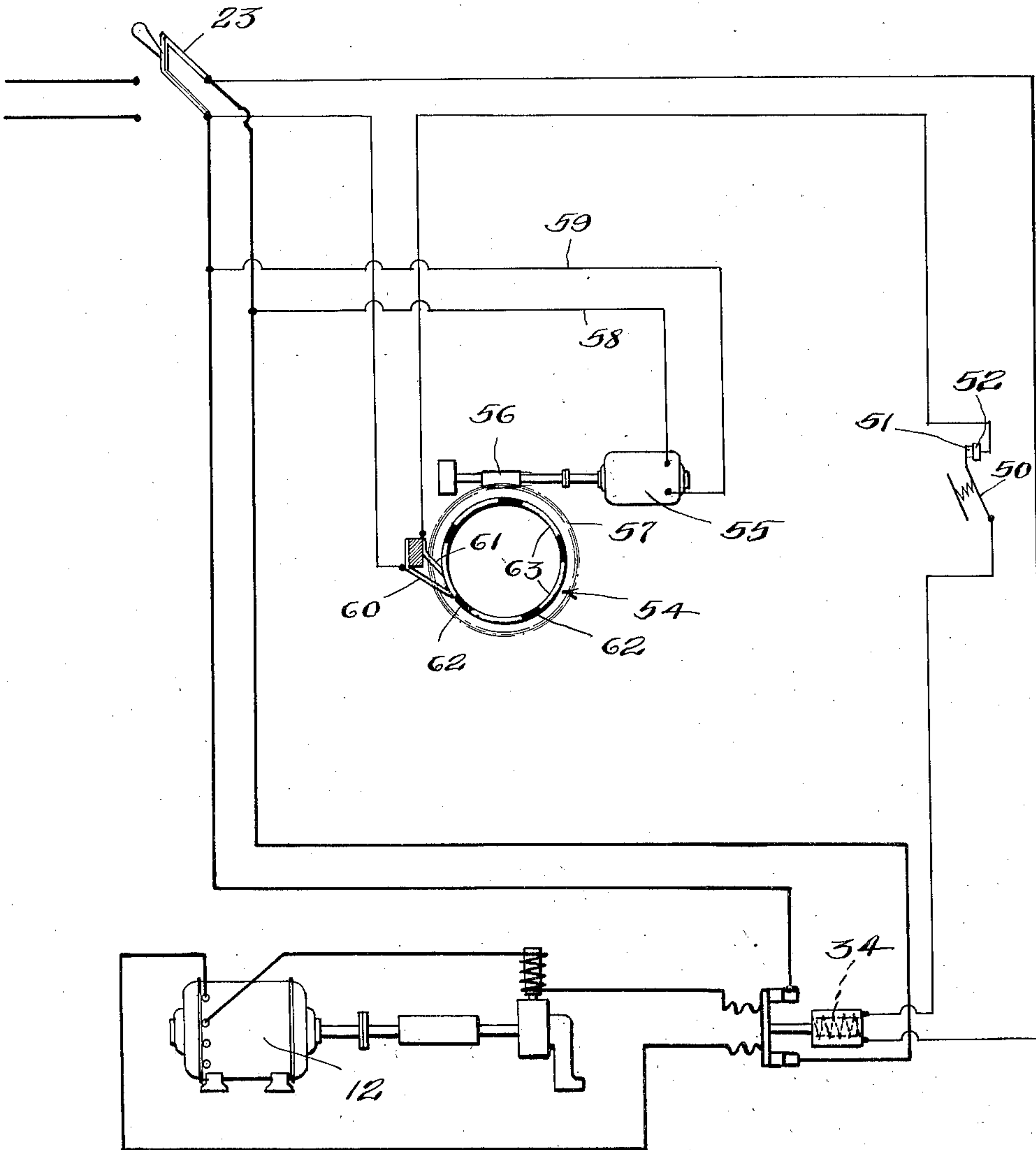


Fig. 5.

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UNITED STATES PATENT OFFICE

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MULTIPLE PRESSING APPARATUS

Application filed October 20, 1926, Serial No. 142,854. Renewed March 8, 1930.

This invention relates to a pressing apparatus and has for its object an apparatus which includes a plurality of individual pressing machines, which is particularly simple in construction, highly efficient and rapid in its operation and durable in use, and by which one operator can attend to several pressing machines without moving from one machine to the other, but by which the machines move successively to the operator.

The invention consists in the novel features and in the combinations and constructions hereinafter set forth and claimed.

In describing this invention, reference is had to the accompanying drawings in which like characters designate corresponding parts in all the views.

Figure 1 is a side elevation, partly in section, of an apparatus embodying my invention.

Figure 2 is a plan view of parts seen in Figure 1, parts being omitted.

Figure 3 is a detail view of one of the controlling valves for the individual pressing machines.

Figure 4 is a diagrammatic view illustrating the electric wiring of this machine.

Figure 5 is a view similar to Figure 4 illustrating another wiring diagram.

This pressing apparatus comprises generally, a movable carrier, a plurality of individual pressing machines supported by the carrier and movable thereby into different locations or to different stations, means for intermittently actuating the carrier, and means for opening and closing the pressing machines at certain locations or stations in their cycle of movement with the carrier.

In the illustrated embodiment of my invention, the carrier is a turret turnable about an upright axis and the pressing machines are carried by the turret, the turret forming the frame of the machine or rather the upper portion of the turret constituting the frame of the machine.

1 designates the turret mountable upon a suitable base 2, the base being formed with a circular track 3 and the turret having wheels 4 movable around the track.

Each pressing machine includes a buck 5

and a movable pressing element or head 6 movable toward and from the buck 5. The bucks 5 are mounted on the frame 7 which constitutes the upper part of the turret. Each head 6 is carried by a lever 8 pivoted between its ends at 9 to an upright central portion 10 of the frame 7. Each lever 9 is formed with a downwardly extending arm 11 located within the frame 7.

As here illustrated, the turret 1 is intermittently actuated from an electric motor 12 and this motor is a start and stop motor controlled by a suitable switch 13. The movement of the motor is transmitted through a shaft 14 and worm 15 to a worm gear 16 mounted on the depending central hub 17 of the turret. The starting and stopping of the motor is controlled by a controller 18 in the form of a ring mounted on the hub 17 and having conductor sections 19 and insulated sections 20, this ring 18 coacting with spaced apart brushes 21 and 22. When the brushes are engaged with a conductor section 19, the motor is connected in the electric circuit and when the brushes are on the insulated sections or spaces 20, the motor is cut out of the circuit. The switch 13 operates when closed to provide a circuit in shunt with the brushes 21, 22 when they are in contact with the insulated portions 20.

Referring to Figure 4, 23 is the switch for cutting in the motor circuit in the feed line. 24 is a magnetic brake for stopping the motor when the circuit is broken. 25 designates generally, a cut out switch which when the circuit through the switch 13 and the controller 19 is broken, breaks the feed line circuit so as to avoid arcing at the brushes 21, 22. This magnetic brake 24 and cut out switch 25 as well as the switch 23 are standard in the electrical field.

In operation, assuming that the switch 23 is closed permanently and the brushes 21, 22 in contact with one of the insulated sections 20, to start the machine, the operator momentarily depresses the movable arm 27 of the switch 13 against the action of the spring 28 to engage the contacts 29 and 30. The engagement may be but momentarily. During such engagement, the current will

pass from the feed wire 31 across one arm of the switch 23, the switch terminal 32, wire 33 to the winding 34 of an electromagnet, thence through wires 35 and 36 to contact 30, thence to contact 29, wire 37, terminal 23^a, thence across the other arm of the switch 23 to the feed wire 38. During the closing of the switch 13 to bring the contacts 29 and 30 in engagement, the solenoid 34 is momentarily energized to bring the relay member 39 into engagement with the contacts 40, 41 so that the current will flow from the feed wires 31 to terminal 32, wire 42, terminal 40, relay member 39, wire 43 through the motor 12 and from the motor through wire 44, magnetic brake 24, wire 45, relay member 39, terminal 41, wire 46 to terminal 23^a through the other arm of the switch 23 to the feed wire 38. Upon the motor being energized, the turret and hence the controller ring 18 revolve to bring the brushes 21, 22 in engagement with a conductor segment 19, so that now the circuit is completed, the same as before with the exception that the current instead of going through the switch 13 passes from the wire 35 to the wire 47 to the brush 22, thence through one of the segments 19 to the other brush 21 and then to terminal 23^a through wire 48. The magnetic switch is merely operated by the magnetic coil 34 against the action of a spring which throws it to open position when the coil is deenergized. The magnetic brake 24 is the usual brake which is held engaged by a spring and held disengaged by the force of an electromagnet 24 acting against the spring.

As seen in Figure 5, the machine may be wired so that it starts and stops automatically and the operator only exercises control when she does not want the machine to start or when she wants it to stay idle a longer period than the predetermined period controlled by the automatic operation. In Figure 5, 50 designates the switch corresponding to the switch 13 except that its contacts 51 and 52 are normally engaged, the coil 34 is normally energized, and the circuit through the motor 12 normally closed. The controller 54 is actuated constantly from an electric motor 55 through a worm 56 and worm gear 57. This motor 55 is connected in the feed circuit through wires 58 and 59. When the brushes 60 and 61 are on an insulated portion 62 of the controller, the controller is being rotated by the motor 55 and the adjustment is such that it takes a predetermined time to move the controller to carry the brushes 60 and 61 onto a conducting portion or plate 63 on the controller. The amount of time it takes to so move the controller is the time the turret remains idle or stops. The switch 23 is operated to stop the machine for an indefinite period as in closing down at nights or at the noon hour.

The means for opening and closing the

pressing machines comprises motor means as a cylinder 70 for each machine and a piston movable therein, the rod 71 of which is connected to the arm 11 of the lever 8, there being one cylinder and associated parts for each lever 8. The pressure of a motive fluid as air on the piston or the cylinder 70 tends to close the press. It is opened by a spring 72. The cylinder 70 is single acting and the flow of motive fluid is controlled to each of said cylinders from a tank 73 by a suitable automatically operable valve mechanism individual to each cylinder. The tank 73 as well as an air compressor 74 and motor, the casing of which is indicated 74^a, and are carried by the turret 1.

75 is the valve casing connected through a pipe 76 to the tank 73 and through a pipe 77 to the cylinder 70. Within the casing 75 is a normally open intake valve 78, a normally closed exhaust valve 79, these valves being connected by a stem 80 to act as a unit. The pipe 77 leads from the casing between these valves 78 and 79. A spring 81 normally tends to close the intake valve 78 and open the exhaust valve 79. There is one valve casing with valves therein for each cylinder, and these valves are operated by a member as a cam 82 arranged concentric with the turret. Each exhaust valve 79 has a stem 83 provided with a follower or roller 84 on the cam. When the intake valve 78 is open and the exhaust valve 79 closed, the air enters the various cylinders and closes the presses or holds them closed against the action of springs 72. The valves are held in this position by a high portion 85 of the cam 82. The cam 82 is formed with a low portion arranged to permit the exhaust valve 79 to open and the intake valve 78 to close as the machine controlled by these valves approaches the position of the operator designated A. Thus, when the intake valve 78 is open and the exhaust valve closed, air enters the corresponding cylinder and actuates the piston therein to close the press.

When the machines come successively to the operator's station A, the follower 84 of the corresponding exhaust valve 79 rides down on the low portion of the cam 82 permitting the exhaust valve 79 to open and the intake valve 78 to close so that air exhausts back out of the cylinder 70 through the pipe 77, valve casing 75 out past the exhaust valve 79 through the discharge opening 86 so that the spring 72 can open the press. During the turning of the turret, to carry the press away from station A, the follower 84 again rides up on the high part of the cam 82 thus closing the exhaust valve 79 and again opens the intake 78 so that air again enters the cylinder 70 and effects the closing of the press. Steam or other heating medium is supplied to and exhausted from one or both of the pressing elements 5, 6 through a feed pipe

87 and exhaust pipe 88 arranged coaxially with the turret, and connected to pipes 89—90, which revolve with the turret by revolving or swivel steam joints 91—92, the pipes 89—90 having branches 93—94 heating to and from the head and buck of the machine. The steam connectors and steam attachments form no part of this invention.

In operation, the operator standing or sitting at A arranges the garment or other work on the buck 5 stopped at station A, and then operates the switch 13 to close the circuit through the contacts 29, 30 whereupon the motor 12 is cut into the circuit and turns the turret until the circuit is again broken by the brushes 21, 22 coming opposite an insulated section 20 of the controller, whereupon the turret stops with another machine in front of the operator at station A, this machine being also open. After the operator has removed the garment from the machine in front of her, she places another one thereon and again closes the switch 13. As the machine moves away from her during the rotation of the turret, it closes and another machine with the work thereon moves into position in front of her.

As before explained, instead of the switch 13, a normally closed switch 50, Figure 5, may be used which is operated only to momentarily stop the machine when a longer period than the automatic period of stopping is required by the operator to arrange the work.

What I claim is:—

1. A pressing machine comprising a turret movable about an upright axis, a plurality of pressing machines, each including cooperating pressing elements, one of which is movable toward and from the other, the pressing machines being carried by the turret, actuating mechanism for the movable pressing element of each machine including levers carrying said element and arranged substantially radially relatively to the axis of the turret and means acting on the levers for closing the machines and opening them one by one at a predetermined station during the turning of the turret.

2. A pressing machine comprising a turret movable about an upright axis, a plurality of pressing machines, each including cooperating pressing elements, one of which is movable toward and from the other, the pressing machines being carried by the turret, actuating mechanism for the movable pressing elements including levers carrying said elements and arranged substantially radially relatively to the axis of the turret and means acting on the levers for closing the machines and opening them one by one at a predetermined station during the turning of the turret, means for intermittently actuating the turret and motor means carried by and rotatable with the turret for actuating the movable pressing elements.

3. A pressing machine comprising a turret movable about an upright axis, a plurality of pressing machines carried by the turret and rotatable into different positions, each pressing machine comprising cooperating pressing elements, one of which is movable toward and from the other, means for intermittently rotating the turret, power actuating means for the movable elements carried by the turret and means for controlling the opening and closing of the machines including a motor and a controlling member for each machine carried by the turret and operating means common to all the motors and fixed from movement with the turret and co-acting with the former means.

4. In a pressing apparatus, the combination of a turret movable about an upright axis, a plurality of pressing machines carried by the turret, each including cooperating platen pressing elements, one of which is movable toward and from the other, and means for actuating the movable element, means for rotating the turret, means operable by the turning of the turret to effect the operation of the actuating means for the movable elements of the pressing machines by their respective actuating means in order to close the machines and open the same one by one at a predetermined station and operator-operated means for controlling the starting of the turret, and automatic means for controlling the stopping of the turret and causing it to have a step by step movement.

5. In a pressing apparatus, the combination of a turret movable about an upright axis, a plurality of pressing machines carried by the turret, each including cooperating platen pressing elements, one of which is movable toward and from the other, and means for actuating the movable element of each machine, means operable by the turning of the turret for controlling the operation of the actuating means for the machines to close the machine and open the same at a predetermined station in the cycle of movement of the turret, power means for turning the turret, operator-operated means for controlling the starting of the turret by its motor means and automatic means for controlling the stopping of the turret at predetermined intervals during the rotation of the turret whereby the turret has a step by step movement.

6. In a pressing machine, the combination of a turret movable about an upright axis, a plurality of pressing machines carried by the turret, each including cooperating platen pressing elements, one of which is movable toward and from the other, and motor means for actuating the movable element of each machine, means operable by the turning of the turret for controlling the operation of the motor actuating means for the machines, motor means for turning the turret, operator-

operated means and automatic means for controlling the stopping of the turret at predetermined intervals whereby the turret has a step by step movement, the means for stopping the rotation of the turret and the means for controlling the operation of the motor means for the individual machines being relatively arranged to open the machines one by one when the machines reach a predetermined station in the cycle of movement of the turret.

7. In a pressing apparatus, the combination of a turret movable about an upright axis, a plurality of pressing machines carried by the turret, each including cooperating platen pressing elements, one of which is movable toward and from the other, and means for actuating the movable element of each machine, motor means for rotating the turret, means for controlling the rotation of the turret whereby it has a step by step movement including operator-operated means for starting the turret, timer means for maintaining the rotation of the turret after it is started and stopping the turret at predetermined intervals and means controlled by the turning of the turret for controlling the opening and closing of the movable elements of the pressing machines and the opening of the pressing machines one by one when they reach a predetermined station in the rotation of the turret.

8. In a pressing apparatus, the combination of a turret movable about an upright axis, a plurality of pressing machines carried by the turret, each including cooperating platen pressing elements, one of which is movable toward and from the other, and means for actuating the movable element of each machine, motor means for rotating the turret, means for controlling the rotation of the turret whereby it has a step by step movement including operator-operated means for starting the turret, timer means for maintaining the rotation of the turret after it is started and for stopping the turret at predetermined intervals and means controlled by the turning of the turret for controlling the closing of the movable elements of the pressing machines by their actuating means and the opening of the pressing machines one by one when they reach a predetermined station in the rotation of the turret, the actuating means for the movable pressing element of each pressing machine comprising parts extending radially relatively to the axis of the turret.

9. In a pressing apparatus, the combination of a turret movable about an upright axis, a plurality of pressing machines carried by the turret, each including cooperating platen pressing elements, one of which is movable toward and from the other and a motor for each machine and motion transmitting means between the motor and the movable

element of each machine, motor means for rotating the turret, means for controlling the rotation of the turret whereby it has a step by step movement including operator-operated means for starting the turret, timer means for maintaining the rotation of the turret after it is started and stopping the turret at predetermined intervals, and means controlled by the turning of the turret for controlling the motors of the machines to close the movable elements of the pressing machines and open the same when the machines reach a predetermined station in the cycle of movement of the turret, the motion transmitting means between the motor for each machine and the movable element of each pressing machine comprising parts extending radially relatively to the axis of the turret, and said motor means including parts extending radially relatively to the axis of the turret.

In testimony whereof, I have hereunto signed my name, at Syracuse, in the county of Onondaga, and in the State of New York, this 13th day of September, 1926.

ERNEST DAVIS.