June 16, 1925. 1,541,907

J. DENEMARK

PRESSING MACHINE

Filed Nov. 22, 19[illegible] 4 Sheets-Sheet 1

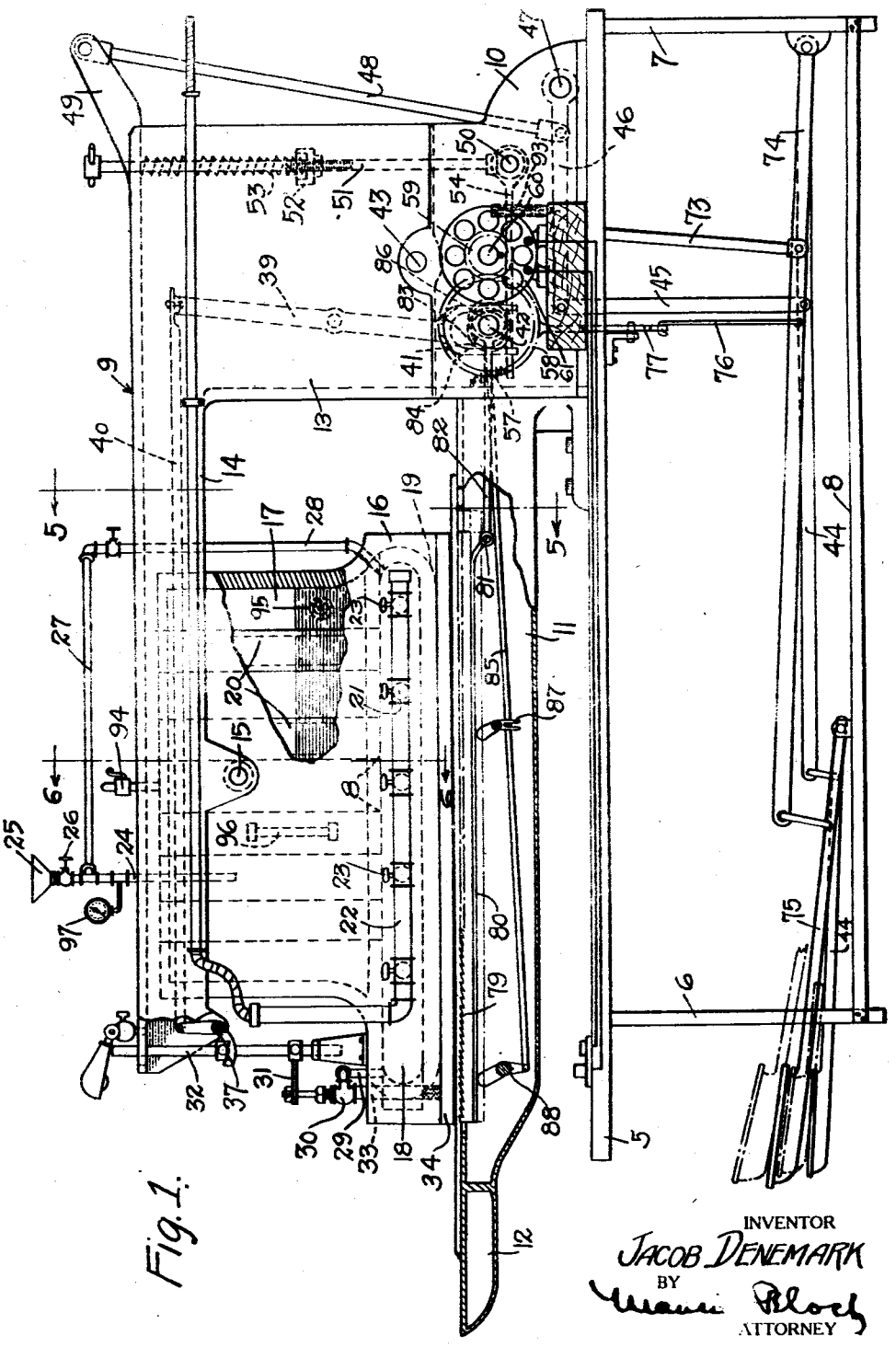


Fig. 1.

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Fig. 2.

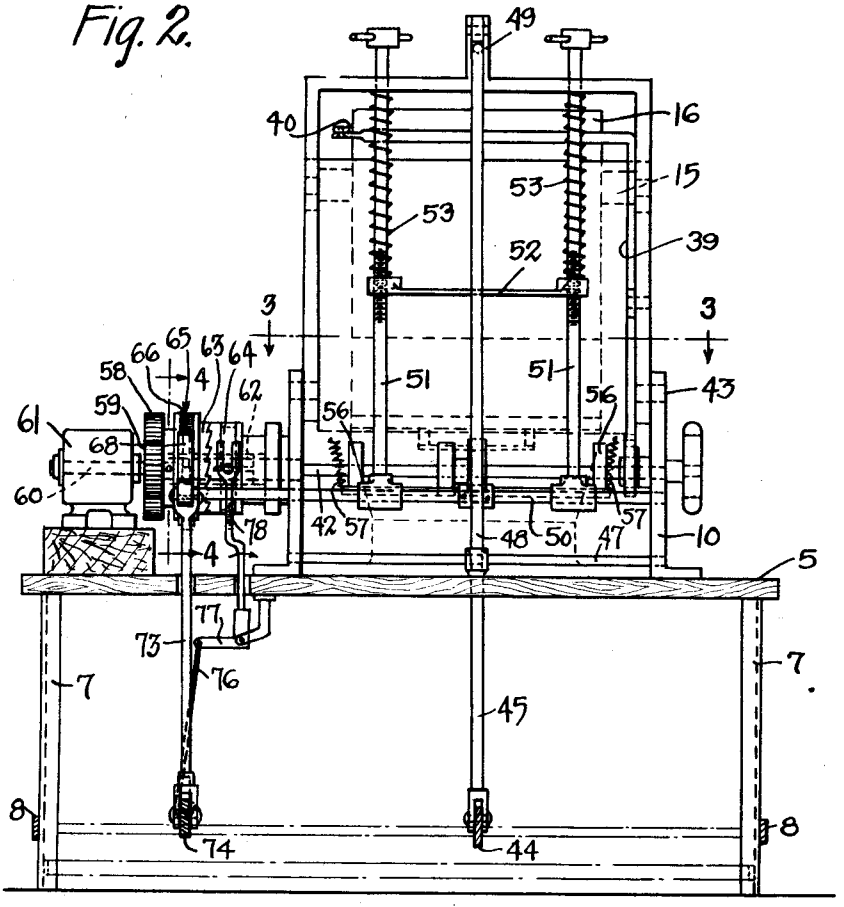


Fig. 3.

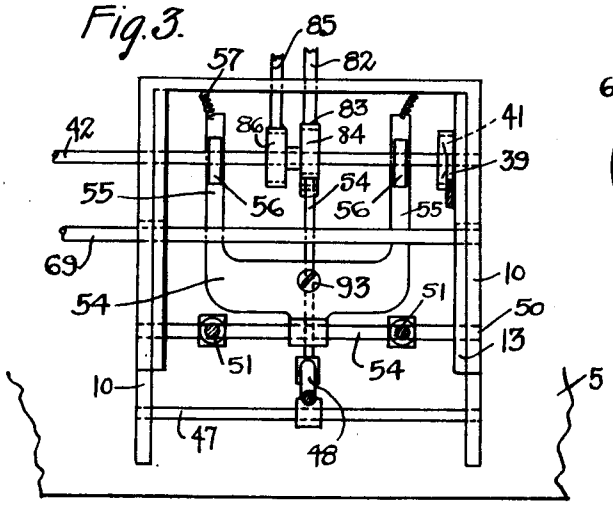
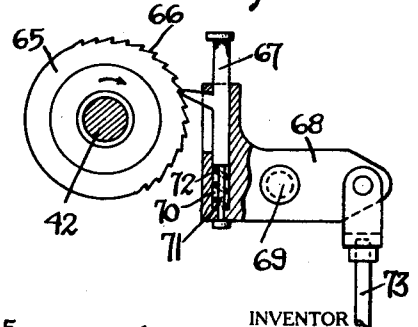


Fig. 4.



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Fig. 5.

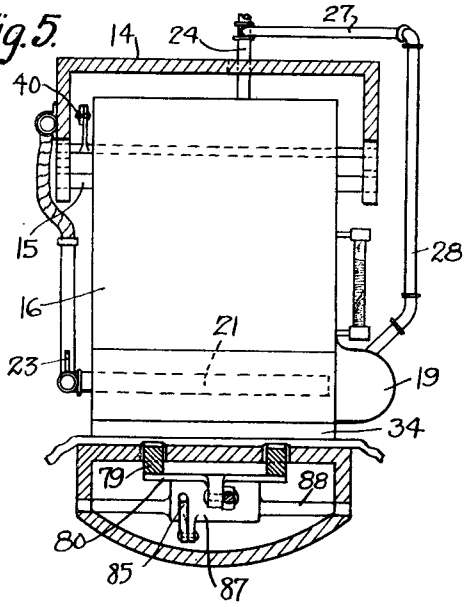


Fig. 6.

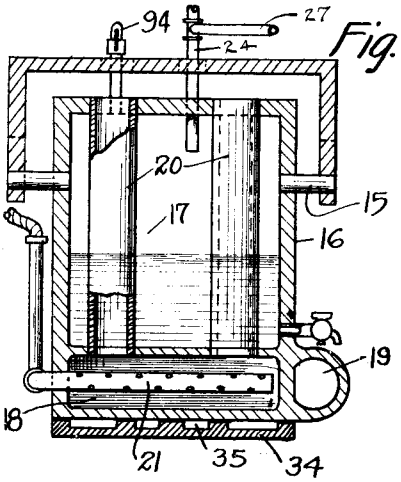
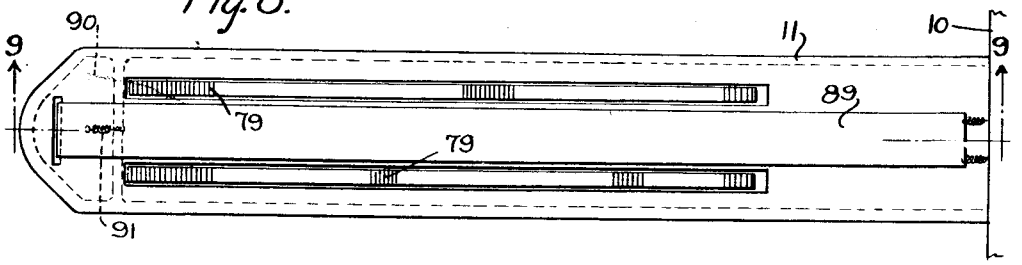


Fig. 7.



Fig. 8.



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Fig. 9.

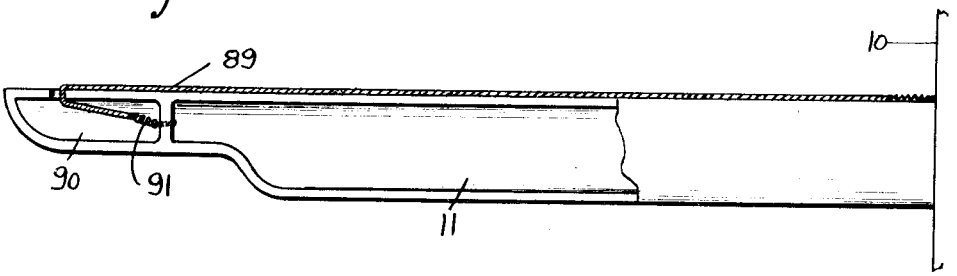
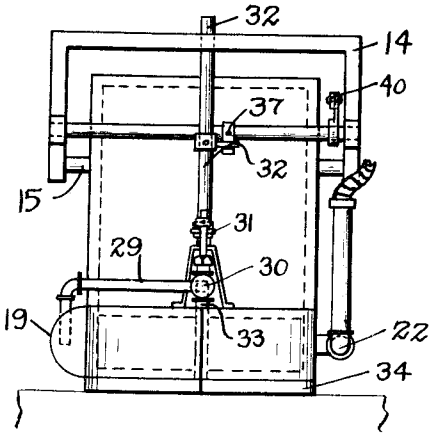


Fig. 10.



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Patented June 16, 1925. 1,541,907

UNITED STATES PATENT OFFICE.

JACOB DENEMARK, OF TRENTON, NEW JERSEY.

PRESSING MACHINE.

Application filed November 22, 1923. Serial No. 676,229.

To all whom it may concern:

Be it known that I, JACOB DENEMARK, a citizen of the United States of America, residing at the city of Trenton, Mercer County, State of New Jersey, have invented certain new and useful Improvements in Pressing Machines, of which the following is a specification.

This invention relates to pressing machines and in particular to a type used in the pressing of seams of garments.

An object of the invention is to provide in a machine of this character, an iron wherein may be generated steam to be applied to the goods to be pressed at the forward part of the iron.

A further object is providing an iron having a combustion chamber, reservoir and a steam super-heating chamber all preferably cast integral with the body of the iron.

A further object is to provide means for leading the steam that has been generated in the interior of the iron through the superheating chamber to a point adjacent the front of the iron where it may pass through a valve which is intermittently opened and closed to discharge the steam directly upon the goods.

Another object is to provide a base having therein a feed bar which is raised to position and drawn rearwardly to feed the goods in a step by step motion along the undersurface of the pressing iron.

As the pressing bar will be alternately above and below the surface of the base upon which the iron rests, it is necessary that the same be always brought to rest beneath the surface of the base when the iron is resting on the latter, and it is one of the objects of my invention to provide mechanism whereby this feature will automatically be carried out.

Another object is to provide a machine of the character referred to which can be manufactured cheaply and which will do the work of pressing efficiently and rapidly.

Referring to the drawings wherein I have shown a preferred embodiment of my invention:

Fig. 1 is a view in side elevation of a machine constructed in accordance with my invention,

Fig. 2 is a rear end elevation showing the driving motor and power shaft operated thereby,

Fig. 3 is a top plan view taken on the line 3—3 of Fig. 2,

Fig. 4 is a section taken on the line 4—4 of Fig. 2, and shows a stop member associated with the power shaft and adapted to bring the same to a stop at a predetermined position,

Fig. 5 is a section on the line 5—5 of Fig. 1,

Fig. 6 is a section on the line 6—6 of Fig. 1,

Fig. 7 is a top plan view of the bottom plate of the iron showing grooves cut therein for the purpose of drying the steam,

Fig. 8 is a top plan view of the base extension arm showing the use in combination therewith of a belt backing for pressing, and

Fig. 9 is a section on the line 9—9 of Fig. 8.

Fig. 10 is a front elevation of the pressing iron.

Referring more particularly to the drawings, 5 denotes the table having legs 6 and 7, and braces 8 upon the top of which is mounted or otherwise secured the pressing machine 9. This machine consists of essentially three parts, a base 10 having an extended supporting arm 11, the front end of which is tapered as at 12 to allow a tubular piece of material to be passed thereover for the pressing operation. To the base 10 is pivoted a supporting arm 13 having an overhanging arm 14 in the latter of which is pivotally supported as at 15, the pressing iron 16, the base extension 11 forming a support for the iron. The base 10 and arm member 13 are hollow as is also the base extension 11. The overhanging portion 14 of the arm 13 being channelled as shown to provide a receptacle for the upper end of the pressing iron 16.

The iron per se is hollow and is cast to provide interior compartments, 17 being the reservoir, 18 the combustion chamber and 19 a super-heating chamber. Extending from the top of the iron and through the bottom of the reservoir into the bottom of the combustion chamber, at 8 there is provided air flues 20 which are open at their top end to the atmosphere and which assist in the combustion of the gas which is allowed in to suitable burners 21 through the medium of an exterior pipe 22, carried on the side of the iron as shown in Fig. 1.

I may provide this gas line with any number of suitable valves 23 to regulate the amount of heat required. Carried in the top of the iron and passing therethrough is an inlet pipe 24 having a funnel 25 at its upper end, and a valve 26. This inlet pipe serves two purposes. First, the reservoir within the iron may be partly filled with water and then the valve 26 closed and after steam has been generated, the steam passes up through the pipe 27, down pipe 28 and into the super-heating chamber 19 of the iron.

This super-heating chamber is, of course, heated by the burning of the gas in the combustion chamber 18, and serves to dry the steam before it reaches the forward end of the iron at which point it passes out through the pipe 29, and into a valve 30, the valve stem of which is engaged by a finger 31 carried adjacent the lower end of a vertical operating bar 32. Upon operation of the bar 32, the valve will, of course, be alternately opened and closed in rapid succession so that the steam will pass therethrough and into the pipe 33 which passes downwardly through the iron to the bottom thereof.

The iron, in order to present a polished surface to the goods to be pressed, is provided with a highly polished metal bottom 34, which is welded or otherwise fastened to the bottom of the iron. This auxiliary bottom is provided with a longitudinal tortuous groove which permits, after extending the length of the bottom several times, at the front portion thereof, (at which point the bottom of the plate 34 is perforated as at 36,) to allow the exit of steam directly upon the goods to be pressed.

In order to provide for the vertical movement of the rod 32, I employ a bell-crank 37, pivotally mounted in the side walls of the over-hanging arm 14, said bell-crank being connected to a vertical lever 39 pivoted in the arm 13, through the medium of a rearwardly extending link 40, the arm 39 being forked at its lower end to engage the opposite sides of a cam 41 carried by a power shaft 42. The over-hanging arm 14, and its enlarged portion 13, is pivoted to the base 10 by the pivot pins 43, and due to the weight of the arm it normally keeps the iron on the base extension 11, or pressing table. In order to provide for the iron to be raised clear of the table or extension 11, I employ a series of levers 44 which draw down on a link 45, which is connected to the forward end of an arm 46, pivoted on a shaft 47, carried by the side walls of the base 10. The arm 46 operates in its downward movement, a vertical connecting rod 48 which is attached at its upper end to an arm extension 49.

In Fig. 1 therefore, it is clearly shown that a pressure on the foot pedal of the lever 44 will cause downward movement of the rod 48, which in turn causes raising of the over-hanging arm 14 about its pivot point 43, to raise the iron 16 clear of the base extension 11.

I provide in the base 10 a shaft 50 upon which are supported two spring carrying rods 51 which are threaded intermediate their ends to carry a cup member 52, the same connecting the two rods 51.

Encircling the rods 51 are springs 53, which rest in the cup members 52 and abut against the top wall of the arm 13. These springs keep the iron normally in pressing contact with the extension 11. The shaft 50 also carries a forked lever 54, the legs 55 of which extend forwardly, and are caused to press upwardly against the spaced cam members 56 carried on power shaft 42 from the medium of springs 57 extending between the ends of the lever and the forward wall of the base 10.

The power shaft 42 carries on its outer end a gear 58, which meshes with and is driven by a pinion 59 carried on the end of a motor shaft 60, the motor 61 being a conventional electric type.

The shaft 42 carries a sleeve 62, to which is affixed the gear 58, and one-half of a clutch member 63, the other half 64 of the said clutch member being slidably connected to the power shaft 42. The clutch portion 63 is formed to provide a flange 65, half of the periphery of which is provided with teeth 66 which are adapted to be engaged by a vertical movable stop member 67, held in a suitable carrier 68, which is pivoted on a shaft 69 which is carried in the side walls of the base 10.

The carrier is provided with a bore 70 in which the stop 67 rides, the stop being provided with a smaller portion 71 around which passes a compression spring 72 against which the downward movement of the stop 67 must act. When the stop 67 is engaged by the teeth 66, the rear end of the carrier 68, is pivotally engaged by a vertical rod 73, which engages an operating lever 74 on its lower end.

This operating lever 74 having a foot pedal portion 75 through the medium of which it is operated when the latter is depressed, also operates a vertical rod 76 connected to the end of a bell-crank 77, pivotally carried beneath the table 5, and having its end extending thereabove, and formed to provide the usual forked members 78 of the conventional clutch operating lever. When the lever 74 is therefore depressed, it can be readily seen that the carrier is thrown to a position where the stop 67 does not engage the teeth 66. This action is slightly slower than the action of the clutch lever, so that the stop will be withdrawn before

the clutch is connected up to operate the power shaft 42, which sets the machine in motion; reversely the releasing of the lever 74 disengages the clutch and throws the carrier 68 to a position where its stop engages the teeth 66 as soon as the momentum of the machine carries shaft 42 around to position where the teeth may be engaged by the stop, the stop yielding slightly due to the spring 72 against the turning movement of the flange 65.

In order to provide a feeding mechanism, I employ longitudinal feed bars 79, connected by a bottom plate 80, the rear end of which is turned down to form an eye 81, with which is pivotally connected an operating lever 82, the forward end of which is formed to provide a cam engaging strap 83, which surrounds a cam 84, carried by a power shaft 42, a similar rod 85 operated by a cam 86, causes the pivotal movements of spaced bell-cranks 87 and 88, which simultaneously raise the plate 80 and cause a rising movement to be imparted to the feed bars 79. The operation of the cams 84 and 86, provide in sequence a lifting of the feed bars, the upper surfaces of which, by the way, are serrated to a point above the surface of the base extension 11, to engage the goods and draw it along the bottom of the iron.

At the end of the drawing movement, which is caused by the lever 82, the feed bars 79 are lowered and returned in their lowered position to their starting point, at which time they begin the operation again, whereby the material to be pressed is fed in a step by step motion along the table and between the upper surface of the same and the bottom surface of the pressing iron.

I may provide a spring held belt 89, to form a backing for the goods to be pressed. This belt can extend from the base 10, along the upper surface of the extension 11, between the two feed bar openings into a suitable hollowed portion or chamber 90 in the front of the arm 11 where it can be yieldably maintained through the medium of a coil spring 91.

In order to prevent the iron from coming down upon the serrated teeth of the feed bar when the same is in raised position, I provide in the arm 54, an adjustable set screw 93, which is adapted to press downwardly on the lever 46. It can be seen, therefore, that at the finish of the pressing operation when the operator removes the feet from the pedals and allows the levers 44 and 74 to rise, the supporting arm 13 will be forced to drop the iron on the extension 11, and thus before the momentum of the power shaft 42 has died out, so that the iron would come down upon top of the moving feed bars which would cause breakage to the machine.

The cams 56 operate in unison with the feed bars so that every time the feed bar is in raised position, the lever 54 will be in its lowermost position, and the set screw 93, will engage the lever 46 to depress the same, and cause the iron thereby to raise from the table 11.

I may provide with the iron any of the necessary accessories, such as the blow-off valves 94, drips 95, and gauge glass 96 in addition to a pressure indicator 97, and means for throwing a light upon the front of the machine where the work is introduced thereto.

It will be seen, therefore, that I have provided an efficient machine which will rapidly and thoroughly press a quantity of material. Also the use of the flat iron apparently is advantageous over the use of roller members inasmuch as the iron presses a continued smooth heated surface to the goods, so that the same will be thoroughly pressed and dried. Also, the operation of the machine is carried out with the smallest amount of mechanism and in the most efficient manner.

Having described my invention what I claim is:

1. A pressing machine comprising a pressing iron, means for generating steam, a material feeding element beneath the iron, means for operating the feeding element, means for periodically introducing the generated steam to the material to be pressed, said means being operated by the feeding element operating means.

2. A pressing machine embodying an iron, a combustion chamber in the iron and bounded by the bottom wall thereof, an auxiliary bottom plate on the bottom wall of the iron said plate being grooved lengthwise to form a tortuous passageway between said bottom wall and said plate, and an outlet adjacent the forward end of said plate to which said passageway leads.

3. In a pressing machine, an iron, means for generating steam in the interior of the iron, a bottom plate on said iron having a tortuous passageway formed therein, means for leading the steam from the interior of the iron to the passageway in the bottom plate, and means for periodically admitting steam to said bottom plate.

4. A pressing machine comprising a pressing element, a channeled supporting arm therefor, a base having an extension adapted for periodically supporting the pressing element, a power operated shaft in the base, a feed bar in the base extension, an eccentric on the shaft for operating the feed bar, and a stop member associated with said shaft for permitting the shaft to come to rest when the feed bar is in non-feeding position.

5. In a pressing machine, a pressing iron,

a power shaft, a base having an extension upon which the iron is normally adapted to rest, a feed bar in the extension operated by the shaft, operator operated means for raising the iron off said extension, and means for periodically raising the iron automatically when the power shaft is operating and the iron is resting on said extension.

6. In a pressing machine, an iron, means for generating steam within said iron, a valve for intermittently feeding the steam to the goods to be pressed, a power shaft, a feed bar operated from said shaft for moving the goods in a step by step motion through the machine, an eccentric on the shaft for operating the feed bar, and a cam member on said shaft for causing the simultaneous operation of the steam valve.

7. A pressing machine comprising an ironing member, a base upon which the ironing member rests, material feeding members in said base, a belt facing for said base disposed between said feeding members, and a spring fastening means to yieldably hold one end of said belt inside the base member.

8. A pressing machine comprising a base, an arm pivoted to said base and having an overhanging channeled portion, a pressing iron pivotally suspended in said channeled portion and adapted to rest on said base during a pressing operation, a steam valve outlet from said iron, and a lever pivoted in the arm co-operating with the valve outlet and means to actuate said lever to cause an intermittent flow of steam therefrom.

In testimony whereof I hereunto affix my signature.

JACOB DENEMARK.