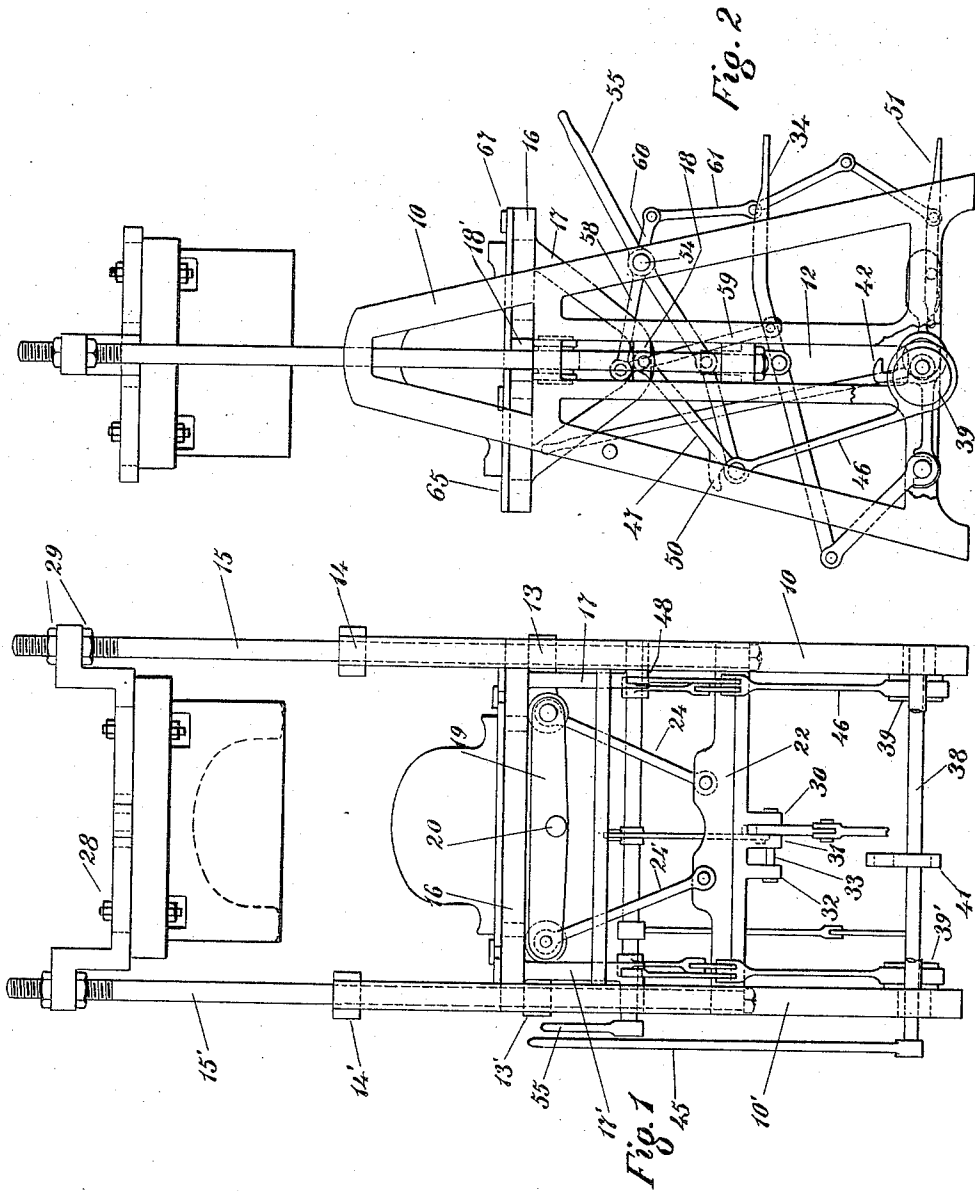


G. CIPRIANO.
HAT PRESSING MACHINE.
APPLICATION FILED SEPT. 7, 1911.

1,044,746.

Patented Nov. 19, 1912.

3 SHEETS—SHEET 1.



WITNESSES:
Nicola Giusto
F. Stinbeck

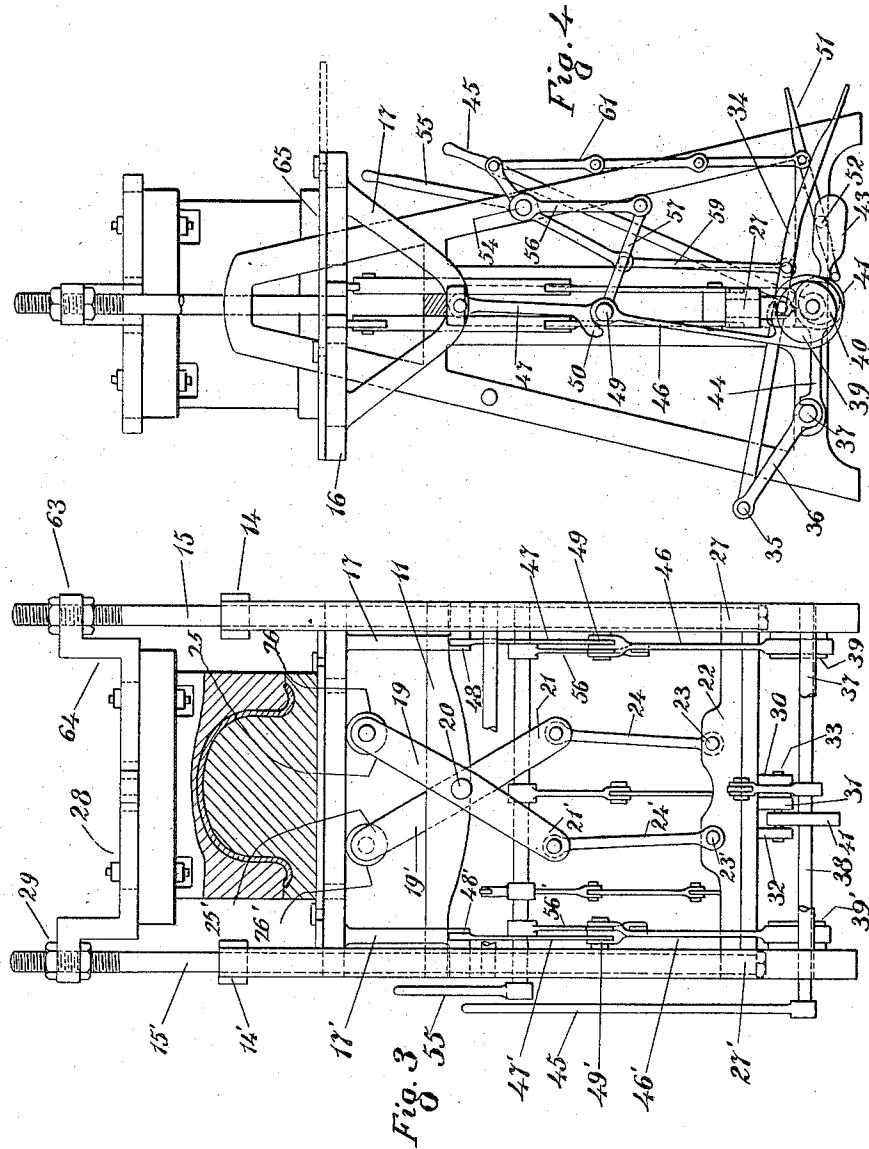
INVENTOR
Gandolfo Cipriano
BY
Guido Sacerdoti
his ATTORNEY

G. CIPRIANO.
HAT PRESSING MACHINE.
APPLICATION FILED SEPT. 7, 1911.

1,044,746.

Patented Nov. 19, 1912.

3 SHEETS—SHEET 2.



WITNESSES:
Nicola Giusto
F. Steinbeck

INVENTOR
Gandolfo Cipriano
BY
Guido Sacerdote
his ATTORNEY

G. CIPRIANO.
HAT PRESSING MACHINE.
APPLICATION FILED SEPT. 7, 1911.

1,044,746.

Patented Nov. 19, 1912.

3 SHEETS—SHEET 3.

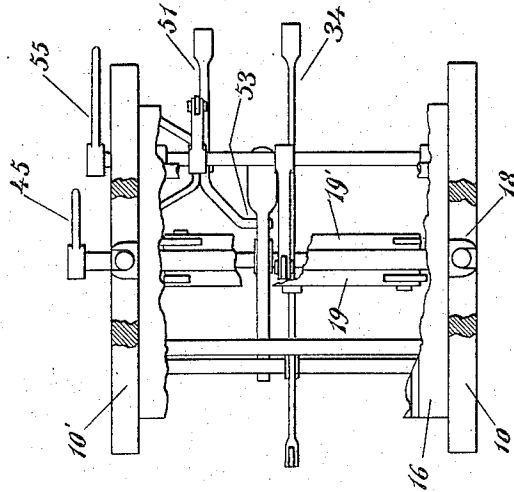


Fig. 6

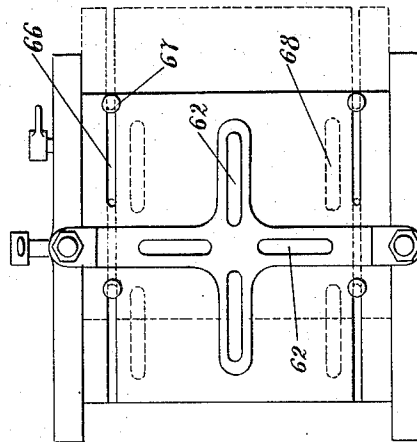


Fig. 5

WITNESSES:

Nicola Giusto
F. Steinbeck

INVENTOR

Gandolfo Cipriano
BY
Guido Sacendo
his ATTORNEY

UNITED STATES PATENT OFFICE.

GANDOLFO CIPRIANO, OF NEW YORK, N. Y.

HAT-PRESSING MACHINE.

1,044,746.

Specification of Letters Patent.

Patented Nov. 19, 1912.

Application filed September 7, 1911. Serial No. 648,015.

To all whom it may concern:

Be it known that I, GANDOLFO CIPRIANO, a citizen of the United States, and a resident of the borough of Manhattan, in the city, county, and State of New York, have invented certain new and useful Improvements in Hat-Pressing Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification.

This invention relates to machines for pressing hats and other like articles of manufacture, and has for its object to provide a machine of a simple construction adapted to be operated by foot power, and to produce the considerable pressure which is required in the pressing of hats.

A further object of this invention is to provide a machine of an improved design, adapted to create a considerable pressure, where the use of springs is completely done away with, the return of the several moving parts to their position of rest being effected by gravity.

A still further object is to provide a machine adapted for use in pressing hats and other articles of manufacture, having novel means for quickly effecting the main stroke, and novel means for giving the forcing pressure such as required in work of the character stated.

With these and other objects in view, as will more fully appear as the description proceeds, my invention consists in certain constructions and arrangements of parts, the novel and useful points of which will be described, and claimed in the appended claims.

Referring to the drawings, Figure 1 is a vertical view in elevation from the rear, of the entire machine, with some parts partly broken away, showing the machine in position of rest; Fig. 2 is a side view in elevation of the same, partly broken away; Fig. 3 is a view in elevation from the rear, with the treadle down; Fig. 4 is a side view in elevation of the same, also with the treadle down; Fig. 5 is a plan view of the machine, from the top, and Fig. 6 is a sectional plan view of the same, from the top, partly broken away.

In the pressing of hats, it is necessary to have a machine capable of receiving dies which usually have a considerable height,

and require quite a long stroke of the working parts in order to insert the work and to extract it after the operation. At the same time this operation requires a considerable pressure, such in fact as to be obtainable only with a slow speed of the moving parts when the machine is to be operated only by hand or foot power. In other words, and as it is well known, in order to obtain high pressures with the energy which can normally be produced by a man the amount of travel of the working parts will have to be much less than the amount of travel of the point in which the force is applied. In the present case, as it has been stated, the working parts need to travel considerably in order to accommodate the dies, so that it has been deemed advisable to divide the stroke of the same in two distinct periods; the first one in which a quick action of the working parts is obtained, the male and female parts of the die being quickly brought together; the second in which a supplementary motion is given to one or to both parts, in order to close them more tightly together, exerting such pressure as may be necessary or desirable.

Machines of this character have been built and used, but to my knowledge there are not machines in use in which both the male and female parts of the die are made to travel toward each other, the stroke of the treadle being utilized for moving both parts at the same time in opposite directions to obtain a quicker closing of the die. Also, I am not aware of any machine of this character, where the two moving parts are locked in position at the end of the first period of the stroke, and where independent means are provided for exerting the necessary pressure effecting a supplementary slight movement of the said moving parts.

Especial attention has been given, in the designing of this machine, to the simplicity and reliability of the various movements, and to the ease of its action; in fact the upper and the lower die holding parts being caused to move simultaneously toward each other, the weight of the upper part and of the sustaining contrivances for the same can be utilized, and it is, for cooperating with the pressure exerted on the treadle for operating the machine. The various parts can therefore be built as heavy and substantial as necessary in a machine hav-

ing to withstand considerable pressures, the weight of the lower parts being such as to surpass the weight of the upper parts of just about the quantity which can reasonably be expected to be exerted by the operator acting on the treadle. The weight of the lower parts will therefore keep the upper parts in a raised position, so as to enable the operator to insert the work; then, by pressing on the treadle, the upper and lower parts are moved toward each other and locked in position at the end of the stroke, after which the final pressure is exerted on the work.

My improved machine consists of a frame preferably comprising two uprights 10, 10' rigidly connected together by a cross member 11 or other suitable means. Centrally to said uprights and underneath cross member 11 are provided longitudinal slots 12, and above these are provided bearings 13, 13', 14, 14', within which rods 15, 15' are guided, and free to slide up and down.

16 is a table, destined to hold the lower part of the dies normally supported by cross member 11, slidable vertically, and preferably provided with side braces 17, 17'; these are provided with guiding lugs 18, while table 16 is provided with guiding lugs 18', said lugs being adapted to hold said table between rods 15, 15', and to guide the same during its vertical motion.

Two swinging levers, 19, 19', are centrally pivoted in 20 to cross member 11, and connected at one end, 21, 21' to a lower cross piece 22 at points 23, 23' by means of connecting links 24, 24'; the free ends of said levers, 25, 25', rest against the lower surface of table 16, and are preferably provided with rollers 26, 26'. The weight of table 16, as shown in Fig. 1, is used to keep down ends 25, 25' of levers 19, 19', thus keeping ends 21, 21' and cross piece 22 connected to them, in a raised position. Cross piece 22 is provided with two lugs 27, 27', adapted to freely slide within slots 12, to which are fixed rods 15, 15'. The upper ends of rods 15, 15' are connected by an upper die holding part or cross-head 28, and said ends being threaded, the position of said cross-head can be adjusted at will by means of nuts 29. Cross piece 22 is provided at its lower part with three lugs 30, 31, 32, through which a pin 33 is inserted; to this is attached, between 30 and 31, a treadle 34, pivoted in 35 to a link 36 swinging on a tie rod 37 at the rear of the frame.

A cross shaft 38 is revolubly mounted at the lower central part of the frame, through uprights 10, 10', and on the same are fixed two side eccentrics 39, 39', and an intermediate eccentric 40. These eccentrics are fixed on shaft 38 in such a manner, that upon revolving the same toward the front of the machine, the side eccentrics will tend to

raise their respective eccentric straps, while the intermediate eccentric will tend to lower its eccentric strap. This latter is constituted by a part 41 having at its upper part a hook 42, at its front part a weight 43 tending to tilt said hook forward, and at its rear an extending arm resting against rod 37, and limiting the motion forward of hook 42. Said weight 43 could of course to all effects be substituted by a spring or by any other suitable means. Eccentric 40 and eccentric strap 41 are mounted in a position directly underneath the space between lugs 31 and 32, so that upon cross piece being pulled down by means of treadle 34, hook 42 will catch pin 33 between said lugs, preventing the return of part 11 to its former position. During this downward movement of cross piece 11, the free ends 25, 25' of levers 19, 19' are raised, lifting at the same time table 16, and the part of the die fixed thereon. Rods 15, 15' follow of course the movement of cross-piece 11, bringing down cross head 28 and the part of the die fixed thereto.

To shaft 38, at one side of the frame, is fixed an operating lever 45, normally in a raised position; upon pulling the same forward and down, shaft 38 is rotated, and eccentric 40 will, as stated cause a further motion downward of its eccentric strap 41. This will pull down cross-piece 11, and therefore also cross-head 28, imparting to the same a slight movement with a great pressure, the difference in leverage between lever 45 and eccentric 40 being very considerable. The same motion is imparted to ends 21, 21' of levers 19, 19', thus causing a slight motion upward of table 16. In the position of levers 19, 19' at this point of the operation, however, the leverage between points 21, 21' and pivot 20 is considerably less than at the start, and the component of the force exerted on said points tangent to their motion is accordingly less, and always decreasing as the motion progresses. I prefer therefore to provide independent means for lifting table 16 utilizing the force exerted to the best advantage in order to produce the pressure which is essential to have. To this end, braces 17, 17' are connected to eccentrics 39, 39' by means of toggle joint connections. The lower arms 46, 46' of said toggle joints are integral with the eccentric straps for eccentrics 39, 39'.

The upper arms 47, 47' are pivoted in 48, 48' to braces 17, 17', and in 49, 49' to lower arms 46, 46'. Arms 47, 47' are preferably provided with projections or noses 50, adapted to prevent the folding of the toggle joints in the sense opposite to that shown in the drawings after passing the dead point. To this effect projections 50 could be substituted by equivalent means on lower arms 46, 46'.

Upon the lifting of table 16 by means of levers 19, 19', the said toggle joints are extended practically into uprights; the revolving of shaft 38 and eccentrics 39, 39' tends to lift lower arms 46, 46', and these will push up upper arms 47, 47' and table 16 connected thereto, the toggles being prevented from bending outward by noses or projections 50.

To release the various parts, after the operation has been completed, I use a treadle 51, pivoted in 52 to the frame, and kept normally in position by weight 43 acting on its free end 53. At the front part of the frame is rotatably mounted a shaft 54 to which are fixed a hand lever 55, two levers 56, 56' connected to points 49, 49' of the toggles by means of links 57, a lever 58 connected to treadle 34 by means of link 59, and a lever 60 connected to treadle 51 by means of a chain 61.

When pressing on treadle 51 to release the various parts, lever 45 having previously been returned to its original position, chain 61 pulls lever 60 causing shaft 54 to rotate, and deflecting the toggle joints by the action of levers 56, 56', and links 57 (see Fig. 4). At the same time lever 58 and link 59 will lift treadle 34, while hook 42 is released from its hold on cross piece 11 by the action of free end 53 of treadle 51 pushing up the front arm of eccentric strap 41, integral with said hook. The weight of table 16 will then force down levers 19, 19', thus raising cross piece 11 and rods 15, 15', with cross head 28 connected thereto.

Hand lever 55 is used to regulate the return of the various parts to their original position, in order to prevent any sudden jolting of the machine, especially in connection with heavy dies. The operator holds said lever upon the pressing of treadle 51, and acts on it so as to retard the descent of table 16.

Cross-head 28 is provided with longitudinal and transverse slots 62, or other suitable means for holding bolts or screws clamping in position the upper part of the dies. To increase the capacity of the machine for dies having a considerable height, I prefer furthermore to form said cross-head in a C shape, having two supporting lugs 63 at the base of its sides 64, and therefore having the die bearing surface at a different level from that of the points at which it is supported. This materially increases the capacity of adjustment of said cross-head, as, in the position shown in the drawings its lower surface can be brought down at a level lower than the lowest obtainable by lugs 63 by means of adjusting nuts 29, the difference being equal to the length of sides 64; and by reversing cross-head 28 so as to have lugs 63 down, and its main surface up, this can be caused to reach a distance from table 16

greater than that obtainable by lugs 63 at the highest points of their adjustment, the difference being, as before, equal to the length of sides 64.

In many cases the height of the two parts of the die is such that when they are separated and the machine is in its position of rest, the space between the said two parts is not sufficient to allow the work to be inserted; for these cases, I provide a slidable bolster plate 65 on table 16, which is extremely useful. Said bolster plate is provided with longitudinal slots 66 through which are passed guiding studs 67, fixed to table 16. Said bolster plate can thus be slid forward to the position shown in dotted lines (Figs. 4 and 5), the work freely inserted in place, and the bolster plate returned to the working position before pressing treadle 34. Said bolster plate must of course be provided with suitable means for holding the lower part of the die, which can however also be clamped to it by separate clamps. When no use is made of bolster plate 65, the lower part of the die is mounted directly on table 16, slots 68 or other suitable means being provided in it for this purpose.

From the foregoing it can be seen that I provide a machine which can be built in a solid and substantial manner, and having the moving parts of a considerable weight if required, adapted to be operated by foot power, and adapted to exert considerable pressures. Also that I provide improved means for causing the action of the machine to be quick and powerful, and that I provide novel means for effecting the various movements and for exerting the necessary pressure at the proper time. It is obvious however, that with slight modifications the machine can be built so as to be adapted to be operated by motive power; and it is also to be understood that other changes, variations, and modifications may be made such as come properly within the scope of the appended claims, without departing from the spirit of the invention or sacrificing any of its advantages.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States is:

1. In a hat pressing machine, and in combination with a frame, an upper die-holding member vertically slidable within the same, a lower die-holding member, and means for pulling down said upper die holding member, means operated thereby for simultaneously moving said lower die-holding member in an opposite direction.

2. In a hat pressing machine the combination of a frame, a table, a cross-piece vertically sliding within said frame, a cross head above said table, rigid connections between said cross-piece and said cross-head,

means for pulling down said cross-piece, and means operated by said cross-piece causing said table to move in the opposite direction.

5 3. In a hat pressing machine the combination of a frame, a table, a cross-piece vertically sliding within said frame, a cross-head above said table, rigid connections between said cross-piece and said cross-head, means for pulling down said cross-piece, means operated by said cross-piece causing said table to move in the opposite direction, and means for locking said cross-piece at the end of its downward stroke.

15 4. In a hat pressing machine the combination of a frame, a table, a cross-piece vertically sliding within said frame, a cross-head above said table, adjustable rigid connections between said cross-piece and said cross-head, means for pulling down said cross-piece, and means operated by said cross-piece causing said table to move in the opposite direction.

25 5. In a hat pressing machine the combination of a frame, a table, a cross-piece vertically sliding within said frame, a cross-head above said table, adjustable rigid connections between said cross-piece and said cross-head, means for pulling down said cross-piece, means operated by said cross-piece causing said table to move in the opposite direction, means for locking said cross-piece at the end of its downward stroke, and means for releasing the same.

35 6. In a hat pressing machine the combination of a frame, a table, a cross-piece vertically sliding within said frame, means for pulling down said cross-piece, means operated by said cross-piece causing said table to move in the opposite direction, means for locking said cross-piece at the end of its downward stroke, and means for effecting a further downward movement of said locking means and cross-piece, thereby causing said table to further move in the opposite direction.

50 7. In a hat pressing machine, the combination of a frame, a table, a cross-piece vertically sliding within said frame, means for pulling down said cross-piece, means operated by said cross-piece causing said table to move in the opposite direction, means for locking said cross-piece at the end of its downward stroke, means for effecting a further downward movement of said locking means and cross-piece, thereby causing said table to further move in the opposite direction, and means for effecting said further motion of the table independently from, or coöperating with said locking means.

65 8. In a hat pressing machine the combination of a frame, a table, a cross-head above the same, coöperating means for simultaneously moving the said two parts

toward each other, means for locking the same in position at the end of said movement, and means for effecting a further slight movement of the said two parts toward each other exerting at the same time a greater amount of pressure; for the purposes as set forth. 70

9. In a device of the character described, and in combination with a frame, an upwardly moving member, a downwardly moving member, and supporting means for the same, means for utilizing the weight of said downwardly moving member and supporting means when lifting the said upwardly moving member. 75 80

10. In a hat pressing machine the combination of a frame, a cross-piece vertically sliding within the same, uprights upon said cross-piece vertically projecting above said frame, a cross-head adjustably mounted thereon, a table vertically slidable within said frame, means for utilizing the weight of said table to hold said cross-piece, uprights and cross-head in a raised position, and means for pulling down the said three parts at the same time raising said table. 85 90

11. In a hat pressing machine the combination of a frame, a table vertically slidable within the same, means for effecting the motion of the said table in the upward direction, toggle joints attached to the same adapted to be extended during said motion and to form uprights at the end of the same, and means for communicating a further motion to said table in the same direction, by means of said uprights. 95 100

12. In a hat pressing machine, the combination of a frame, a table vertically slidable within the same, eccentrics rotatably mounted on said frame, toggle joint connections between said eccentrics and said table, means for moving said table upwardly, thereby extending said toggle joint connections into uprights, and means for rotating said eccentrics, thereby effecting a further motion of the said table in the same direction. 105 110

13. In a hat pressing machine the combination of a frame, a table supported thereby and vertically slidable within the same, a cross-piece underneath having rods guided by and upwardly projecting through said frame, acting at the same time as guides for the motion of said table, a cross-head adjustably mounted on said rods, levers centrally pivoted to said frame underneath said table, connections between one end of each lever and said rod-bearing cross-piece, and means for pulling down said cross-piece, causing the said levers to lift said table; for the purposes as set forth. 115 120 125

14. In a hat pressing machine the combination of a frame, a table supported thereby and vertically slidable within the same, a cross-piece underneath said table having rods guided by and upwardly projecting 130

through said frame, acting at the same time as guides for the motion of the said table, a cross-head adjustably mounted on said rods, levers centrally pivoted to said frame underneath said table, links connecting one end of each lever to said rod bearing cross-piece, a treadle for pulling down said cross-piece causing the said levers to lift said table, means for locking said cross-piece at the end of its downward stroke, means for effecting a further slight movement of said cross-piece in the same direction exerting at the same time a greater amount of pressure, and means for releasing the same.

15 15. In a hat pressing machine the combination of a frame, a table supported by said frame and vertically slidable within the same, a cross-piece underneath said table having rods guided by, and upwardly projecting through said frame acting at the same time as guides for the motion of said table, a cross-head adjustably mounted on said rods, levers centrally pivoted to said frame underneath said table, links connecting one end of each lever to said rod bearing cross-piece, a treadle adapted to pull down said cross-piece causing the said levers to lift said table, a shaft, eccentrics on said shaft, means for locking said cross-piece in position at the end of its downward stroke, toggle joint connections between said eccentrics and said table adapted to be extended during the upward motion of the same and to form uprights at the end of said motion, and a hand lever operating said shaft, causing said eccentrics and uprights to impart a

further slight movement to said table in the same direction.

16. In a hat pressing machine the combination of a frame, a table supported thereby and vertically slidable within the same, a cross-piece underneath said table having rods guided by and upwardly projecting through said frame, acting at the same time as guides for the motion of said table, a cross-head adjustably mounted on said rods, levers centrally pivoted to said frame underneath said table, links connecting one end of each lever to said cross-piece, a treadle for pulling down said cross-piece causing said levers to lift said table, a shaft, eccentrics on said shaft, a hook-shaped eccentric strap catching said cross-piece at the end of its downward stroke, toggle joint connections between said eccentrics and said table adapted to be extended during the motion of the same and to form uprights at the end of said motion, a hand lever operating said shaft causing said eccentrics to effect a further downward movement of said cross-piece and a further upward movement of the said table, a lever and connections returning said toggle joint connections to a deflected condition, and a treadle operating said lever and connections, releasing at the same time the said hook-shaped eccentric strap; substantially as described, and for the purposes as set forth.

GANDOLFO CIPRIANO.

Witnesses:

GUIDO SACERDOTE,
NICOLA GIUSTO.