

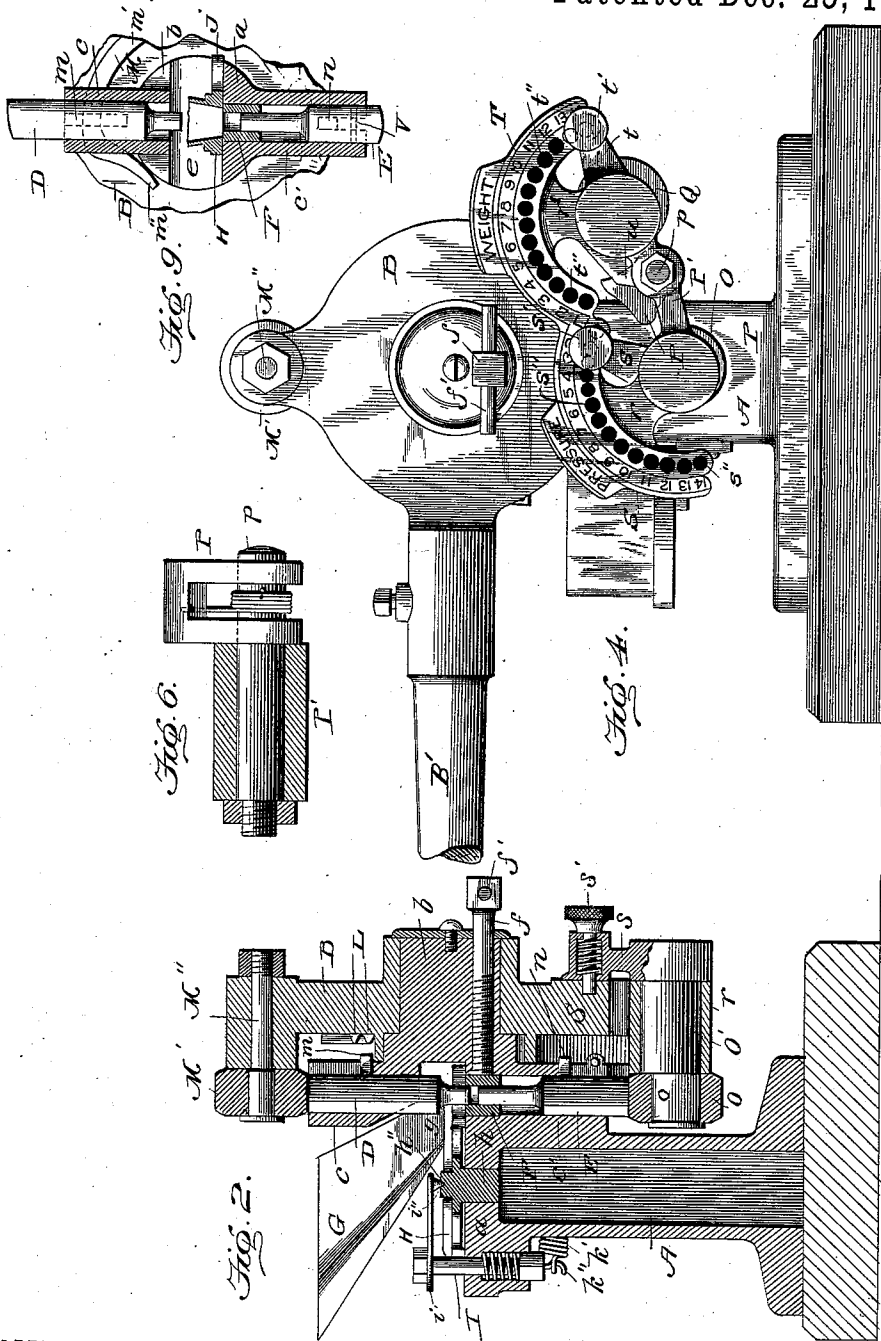
(No Model.)

2 Sheets—Sheet 2.

H. H. JONES.
TABLET COMPRESSING MACHINE.

No. 531,536.

Patented Dec. 25, 1894.



Witnesses:

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UNITED STATES PATENT OFFICE.

HARRY H. JONES, OF LANCASTER, NEW HAMPSHIRE.

TABLET-COMPRESSING MACHINE.

SPECIFICATION forming part of Letters Patent No. 531,536, dated December 25, 1894.

Application filed May 25, 1894. Serial No. 512,495. (No model.)

To all whom it may concern:

Be it known that I, HARRY H. JONES, a citizen of the United States, residing at Lancaster, in the county of Coos and State of New Hampshire, have invented certain new and useful Improvements in Tablet-Compressing Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

The present invention relates to a machine for compressing dry, or nearly dry powdered substances, into a solid form to produce what is known as "compressed tablets;" and the object of the invention is to produce a simple and inexpensive machine which can be quickly and successfully operated by druggists, physicians, and unskilled persons for making all kinds of "tablets."

A further object of the invention is to provide means whereby the quantity of material to be compressed into a tablet can be regulated, and also to provide mechanism for controlling the pressure to which the material is subjected between the dies of the machine.

With these and such other ends in view as pertain to my invention, the first part thereof consists in the combination of a stationary stand or base provided with a bushing in which the material is to be compressed, two dies fitted in the base to work therein and adapted to enter the bushing from opposite ends, a hopper mounted to slide on the base toward and from the bushing, a movable disk carrying means to reciprocate the dies, and mechanism intermediate of the disk and the hopper to actuate the latter.

The invention further consists in the combination with a lower die adapted to act in conjunction with an upper die and a bushing, of a movable disk, a cam carried by said disk and adapted to control the upward thrust or movement of the lower die relatively to the upper die, and a means for holding this cam in its adjusted position, whereby the pressure of the dies upon the material may be controlled by the vertical play or movement of the lower die-cam when the two dies are actuated to compress the material in the bushing between them.

The invention further consists in a means

for regulating the quantity of material contained in the bushing to be compressed by the dies into a tablet, this regulating means consisting of another cam carried by the movable disk and provided with means for locking the same in a fixed position, said cam being movable with the disk to pass beneath the lower die and lift the same vertically to the proper height in the bushing to determine the quantity of material to be contained therein for compression into the tablet, the surplus material being carried away by the reciprocating hopper, and the invention further consists in the mechanism whereby the hopper may be vibrated or reciprocated rapidly over the bushing in order to discharge the material thereto; and it consists, finally, in the peculiar construction of parts, and in the combination of devices, which will be hereinafter fully described and claimed.

To enable others to understand my invention, I have illustrated the preferred embodiment thereof in the accompanying drawings, forming a part of this specification, and in which—

Figure 1 is a side elevation. Fig. 2 is a vertical transverse sectional view on the plane indicated by the dotted line *x x* of Fig. 1. Fig. 3 is a view partly in plan and partly in section with the hopper omitted to more clearly indicate the means for actuating the spider that carries the hopper. Fig. 4 is an elevation looking at the rear side of the machine showing the means whereby the pressure of the dies upon the material, and the quantity or weight of the material, may be regulated or controlled. Fig. 5 is a detail view, in elevation, looking at one side of the machine and illustrating the devices for operating the hopper. Fig. 6 is a detail view of the ejector cam to lift the lower die and throw the compressed tablet out of the bushing. Fig. 7 is a detail, partly in elevation and partly in section, showing the position of the dies in the act of compressing the material in the bushing. Fig. 8 is a view similar to Fig. 7 but showing the upper die in its raised position and the ejector cam lifting the lower die to eject the compressed tablet from the bushing, and Fig. 9 is a detail view illustrating the position of the dies when the hopper is moved to supply the material to the bushing.

Like letters of reference denote corresponding parts in all the figures of the drawings, referring to which—

A designates the base or stand of my tablet
5 compressing machine, and this base is provided with a bed or disk, *a*, a trunnion, *b*, and tubular guides *c*, *c'*, all of which are cast or formed in a single piece. The trunnion, *b*, extends from one side of the table, *a*, to form
10 the journal for the oscillating disk B, and the tubular guides *c*, *c'*, are arranged one above the other, in vertical alignment, to accommodate the upper die, D, and the lower die, E, which dies are capable of vertical reciprocating motion toward and from each other. A
15 recess, *e*, is provided in the face of the trunnion next to the table, and just below this recess, *e*, is arranged a bushing or die box, F. This bushing or die-box is in vertical alignment with the lower tubular guide, *c'*, in which
20 plays the lower die, E, the upper end of which is reduced in diameter to permit it to play in the bushing F; and this bushing is held in place by means of a clamping screw, *f*, which
25 passes through an opening in the trunnion, *b*, the rear end of this screw being provided with a thumb piece, *f'*, for the convenient manipulation of the screw, and the front end of the screw bearing against the die box, F,
30 as shown by Fig. 2. The die box or bushing is removably held in place by the screw, which can be released to permit the box or bushing to be taken out, and replaced by another bushing or box of a different size or shape, as
35 may be desired.

The dry powdered material to be compressed into tablets is supplied to a hopper G, which is preferably of the tapering form shown by
40 Figs. 1 and 2 and arranged in an inclined position to enable its throat, *g*, to readily pass into the recess, *e*, without the enlarged upper part of the hopper G interfering with the movement of the dies or the operating parts of the machine. This hopper is carried by an
45 oscillating spider H fitted upon the bed or disk, *a*, of the stand, A, and the spider is held in yielding contact with the bed or disk by means of a pivot pin, *h*, which passes through the center of the spider and is fitted
50 in an opening in the bed or disk, *a*, as shown by Fig. 2, said pivot pin, *h*, being pressed downward upon the spider by means of the spring pressed plunger and arm shown more clearly by Fig. 2, and shown in Figs. 1, 3 and
55 5. This plunger I, is fitted in a vertical boss, *i*, made integral with the bed or table, at one side thereof; and the lower enlarged end of this plunger is arranged to protrude below the lower extremity of the boss, so that the
60 plunger can be easily lifted to release the arm *i'* from the pivot pin, *h*, and permit the spider and hopper to be detached from the bed or disk, *a*. The arm *i'* is rigid or fast with the upper end of the plunger, and at its free
65 end this arm, *i'*, is formed with a pendent spur or tooth, *i''*, which fits in a socket, *h''*, in the head of the pivot pin *h*.

The spider H that carries the hopper, G, is provided with a forked lug or arm, *j*, in which
70 fits a pin, *j'*, that is fast with the free end of an arm *j''*, see Figs. 3 and 5, and this arm, *j''*, is carried by a horizontal reciprocating rod, J. This rod, J, is fitted to slide freely in depending lugs, *k*, *k'*, on the bed or disk, *a*, at
75 one side thereof, see Figs. 3 and 5, and on one end of this rod is journaled a friction roller, K, that is normally pressed against a corrugated cam on the front face of the disk, B; said rod, J, and the friction roller being im-
80 pelled toward the disk B by means of the coiled spring *k'* which is attached at one end to a pendent lug, *k''* on one end of the rod, J, and at its other end to one of the pendent guides, *k'''*. See Fig. 5. The cam for actuating the rod J and the connected hopper and
85 spider, is shown at L, L', Figs. 1, 3, and 5, and it consists of a series of inclined lugs L spaced to form depressions between the lugs, and a plane face L' projecting farther beyond the
90 lugs, whereby as the disk is turned the lugs L impart a vibrating motion to the rod J and the spider H and as the friction roller K rides upon the raised surface L' the rod J is
95 reciprocated to vibrate the spider and hopper, so as to give to the latter a shaking motion across the bushing and thus agitate the contents of the hopper so as to cause the
100 powdered material to pass from the throat *g* into the bushing or die box.

The disk B is constructed in a peculiar manner to lift and depress the upper die in
105 conjunction with corresponding movements of the lower die, to compress the material in the die-box F between the two dies, and this disk, B, also carries devices whereby the lifting of
110 the lower die may be effected to eject the compressed tablet from the die box, and to regulate the quantity and weight of the material in the said die-box to be compressed between the dies into the tablet.

I will now proceed to describe the means whereby the upper die is lifted and depressed. This upper die, D, is provided with a laterally
115 projecting pin or stud, *m*, which plays in a slot in the upper guide, *c*, and this pin *m* rests upon a cam, M, formed by a rib cast on the front face of the disk, B. This cam has a seg-
120 mental or arc shaped portion, *m'*, which is concentric with the trunnion *b* on which the disk B is pivoted and on which it is free to turn or oscillate; and the cam, M, is prolonged to form the eccentric point, *m''*, which is
125 adapted to take beneath the stud or pin, *m*, when the parts occupy the position shown in Figs. 1 and 2. The die D is positively depressed by means of a friction roll, M', which
130 is journaled on a stud or pin, M'', carried by the disk B at one side thereof, the cam M and the friction roll, M', being so arranged in relation to each other that the prolonged point *m''*
135 will assume a position to permit the roll M' to depress the plunger or die D when the lever is depressed; and as the disk B is turned to cause its roll, M', to clear the die or plunger

D, the end m'' of the cam M lifts the pin m and the die D, the pin m riding upon the concentric end m' of the cam during the further movement of the disk in the direction indicated by the arrow in Fig. 1 to hold the upper die D in the elevated position shown by Figs. 8 and 9. The lower die, E, is also provided with a laterally projecting pin or stud, n , which plays in a slot or recess in the lower tubular bearing, c' , said lower die remaining at all times in the die box, although at different heights therein, to serve as a bottom for the die box and prevent the material or the tablet from dropping out through the bottom of the die box. This lower die is adapted to be elevated successively by the pressure roll, O, the ejector cam, P, and the weight or quantity cam Q. The disk B is constructed to carry these several parts, and at the lower side of the disk I provide the arms or extensions, r, r' , which form the bearings for the two shafts O', Q' on which are carried the pressure roll O and the weight cam Q, respectively. These shafts O', Q', and the parts O, Q, are spaced a suitable distance from each other, and the parts, O, Q, are disposed on the inner frontside of the disk B so that they are adapted to act against the lower end of the lower die E as the disk B is moved around the trunnion, b.

The shaft O' is made with an eccentric pin or stud, and fitted in the bearing r so that it can be adjusted axially to vary its position relative to the lower die, E, and on the eccentric pin or stud at the inner end of this shaft O' is journaled the pressure roll, O, as described, while the other rear end of the shaft is provided with an adjusting arm s that is adapted to be moved to any suitable position over a segment, S, provided on the rear side of the disk B. This arm, s , is constructed at its free end with a housing to receive a spring pressed locking pin, s' , that is adapted to enter any one of a series of apertures, s'' , provided in the segment S, this locking pin having a thumb piece at its rear protruding end for convenient manipulation of the pin s' , and the segment S being inscribed with a scale over the apertures s'' to denote the degree of pressure that may be brought upon the material by and between the dies, D, E. It is evident that by moving the arm s in one direction, and permitting the pin s' to engage with an aperture at or near one end of the segment, S, the shaft O' can be turned to bring its roll, O, close to the lower end of the die and thus lift the die E quite close up to the upper die and thereby subject the material in the die box to considerable compression between the two dies; but by moving the arm s toward the opposite end of the segment and permitting the pin s' to enter an aperture at or near the opposite end of the said segment, the rock shaft O' will be turned to lower the roll O farther away from the lower end of the die E, whereby the roll O will not lift the lower die as high as in the first mentioned

adjustment and thus the material in the die box will not be subjected to as great compression as when the two dies approach each other quite closely. The other arm or bearing, r' , of the disk, B, which carries the rock shaft Q', is adapted, when the disk B is turned in the direction indicated by the arrow in Fig. 1, to bring the cam or roll, Q, beneath and in contact with the lower die, E, after the pressure roll O and the ejector cam P have passed beneath the die E; and this roll, Q, is adapted to lift the lower die a proper distance in the die box or bushing F to throw out any surplus material and determine the quantity, and consequently the weight, of the material which is to be compressed in the die box between the two dies, D, E. This weight or quantity roll, Q, is adjusted in a manner similar to the pressure roll, O, and to this end the shaft Q' is provided with an eccentric pin or stud similar to the eccentric stud o of the shaft O' shown in Fig. 2, on which pin or stud of the shaft Q' is journaled the weight or quantity cam, Q, see Fig. 4, the other end of the shaft Q' being provided with an adjusting arm t which carries a spring pressed locking pin, t' , adapted to enter any one of a series of apertures, t'' , formed in the segment T. See Fig. 4 of the drawings.

To effect the ejection of the compressed tablet from the die box F before the loose material is supplied thereto from the hopper, to be regulated by the weight or quantity cam Q, I place the ejector cam P between the pressure roll O and the weight or quantity roll, Q. This ejector cam P is hung or pivoted at its heel by means of a spring-controlled pin or arbor, p which is attached to a bar or rod P', the latter extending between the arms or bearings r, r' and being suitably attached thereto. See Figs. 4, 6 and 8. This ejector cam P is held by its spring in the position shown by Figs. 1 and 4 so that it will impinge against the lower end of the die E as the disk B is moved in the direction indicated by the arrow in Fig. 1, that contact of the ejector cam with the lower die taking place after the pressure roll O has acted on the die, in conjunction with the other die, to compress the material in the die box, and before the weight or quantity roll, Q, is brought into position by the disk B beneath the lower die, E. The rocking or movement of the spring controlled arbor or pin p , which carries the ejector cam P, is limited in one direction by the cam resting against a lug on the inner face of the disk B or on the bar P' to prevent the cam from being thrown out of position when it contacts with the lower die to raise the same and eject the tablet from the die box, but when the disk is moved in the reverse direction to restore the parts to a position for compressing another tablet, the ejector cam P turns on its pivot p or is inverted to such an extent as to clear the lower extremity of the lower die, thereby permitting the cam to yield and pass the lower die, after which the spring

returns the cam to its normal position shown by Figs. 1 and 4.

The lower die is prevented from dropping out of the tubular bearing c' by means of a stop pin, V, which is fitted in apertured lugs at the lower end of the bearing, c' , see Figs. 7, 8 and 9, said stop pin V being in the path of the stud or pin, n , on the lower die, E, as shown.

This being the construction of my improved tablet compressing machine, the operation may be described as follows: The material having been supplied to the hopper, G, the lever B' attached to the disk B is now raised in the direction indicated by the arrow in Fig. 1, and during the ascent of the lever, the cam M on the disk B operates to raise the upper die, D, and the lower die, E, is lowered until its pin, n , contacts with the stud or stop pin, V on the lower tubular guide c' , the movement of the lever and disk being continued until the rolls O, Q, and cam P have passed beneath the lower die E, and during this movement of the lever and disk the friction roll, K, passes over the part L' of the cam on the disk B, to permit the throat of the feed box G to pass over the bushing or die box F and supply the material to the same, the upward movement of the lever B' being continued until it assumes the position shown by dotted lines in Fig. 1 and said upward movement of the lever being arrested by the lug, b'' shown by dotted lines in Fig. 1, on the disk coming in contact with the upper tubular guide c for the upper die, D. During this upward movement of the lever and the turning of the disk, B, the roller K rides over the projections, L', of the cam on the face of the disk, and thus imparts a reciprocating or vibrating motion of the rod J, the spider, H, and the feed box G, which insures the proper supply of the material to the die box or bushing F, to fill the latter, while the lower die E is depressed; and the lever B' is now lowered to return the disk B to its initial position shown by Figs. 1 and 2, during which return movement of the lever and disk, the weight or quantity roll, Q bears upon the lower die, E, to lift the latter the proper distance in the die box and force out any surplus material, thus leaving in the die box the proper amount and weight of material to be compressed into the tablet, the surplus material being scraped and carried off with the hopper as it is moved backward away from the die box, by the roller K riding on the elevated part, L' of the face cam on the disk, B. After this weight or quantity roll, Q, passes the die E on the return of the disk and lever to their normal positions, the ejector cam P strikes the die E, and is turned over to the position indicated by dotted lines in Fig. 8, to permit the ejector cam to clear the lower die without disturbing the die or the loose material in the die box, and then the pressure rolls, M', O, are brought to act upon the upper and lower dies, thereby forcing the

two dies toward each other and into the die box or bushing F to compress the loose material therein into a compact mass and produce the compressed tablet. The lever B' is now moved upward and forward, as before and in the direction indicated by the arrow, and as the pressure rolls, M', O, clear the dies D, E, the cam projection m'' lifts the upper die and the lower die drops or falls into the path of and upon the ejector cam P, the latter thus lifting the lower die to eject the tablet from the die box or bushing F, and this tablet being forced out of the way by the hopper as it is moved over to the die box or bushing to supply another charge of loose material thereto; and then the weight or quantity roll Q comes beneath the lower die to force out the surplus material, this roll Q coming beneath the lower die at the time the lever has reached the limit of its upward and forward movement. After this, the lever is reversed or lowered, the hopper returns to its normal position away from the bushing, the ejector cam is inverted to pass the lower die, and the pressure rolls bear upon the dies to force them together and compress the material in the die box or bushing.

It will readily be seen that the machine is entirely automatic in feeding the material, compressing it into the compact mass to produce the tablet, and ejecting the compressed tablet from the machine; and the weight or quantity of the material can be controlled by adjusting the rock shaft Q or the pressure of the dies upon the material can be regulated by adjusting the other shaft, O', which carries the lower presser roll. The die box can be readily taken out after releasing the binding screw, f , and another die box of suitable size or shape can be inserted into the machine; and as the dies D, E, have no connection with the other parts of the machine, they can be removed from the bearings, c , c' and another set of dies corresponding to the new die box can be inserted into the guides c , c' . These adjustments of the die box and dies can be readily effected, and the adjustment of the rolls O, Q, to determine the weight of the tablet, and the degree of compression of the loose material, can be accomplished by a physician, druggist, or unskilled person without the aid of a wrench or other tool.

After the proper adjustments for the various sizes of tablets has been determined, a record of the size of the compression dies, and the position of the adjusting arms s , t , for the weight and pressure, is made upon the formulas, such record being used for convenience in readjusting the machine.

I am aware that changes in the form and proportion of parts, and in the details of construction, of the mechanisms herein shown and described as an embodiment of my invention can be made by a skilled mechanic without departing from the spirit or sacrificing the advantages of my invention, and I therefore reserve the right to make such modifica-

tions and alterations as fairly fall within the scope of my invention.

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

1. In a tablet compressing machine, the combination of a die-box or bushing, a set of co-acting dies adapted to work in said die-box, a movable disk carrying two presser rolls *M', O*, arranged thereon to ride upon the heads of said dies in one position of the disk, to force the dies together and upon the material in the die-box, and a hopper actuated by the movable disk to supply the material to said die-box, substantially as and for the purposes described.

2. In a tablet compressing machine, the combination of a die-box, a set of co-acting dies, a movable disk provided with cams and compressor rolls to actuate the dies, and a hopper to supply the material to the die-box, substantially as and for the purpose described.

3. In a tablet compressing machine, the combination with a bushing, a set of co-acting dies, and a supply hopper, of a movable disk carrying oppositely-disposed presser-rolls to force the dies upon the material, another roll to control the height of the lower die in the bushing, and an ejector to lift the lower die through the bushing and eject the pressed tablet therefrom, substantially as and for the purposes described.

4. In a tablet compressing machine, the combination with a die-box, a hopper, and a set of co-acting dies, of a movable disk carrying presser-rolls to force the dies together, a device for lifting the lower die to eject the compressed tablet, and a roll to lift the lower die the proper height in the die-box to determine the weight or quantity of the loose material therein, substantially as and for the purposes described.

5. In a tablet compressing machine, the combination with a die-box, a hopper, and a set of co-acting dies, of a disk carrying presser rolls and an ejector cam, substantially as and for the purposes described.

6. In a tablet compressing machine, the combination of a die-box, a hopper, a set of co-acting dies, and a disk carrying three rolls, two of which actuate the dies to compress the material in the die-box and the third roll adjusts the lower die to automatically regulate the quantity of material supplied to the die-box, substantially as described.

7. In a tablet compressing machine, the combination with a die-box, a set of co-acting dies, and a disk carrying means to actuate the dies and provided with the cam, *L, L'* on one face thereof, of a hopper movable with relation to the die box, a spring-controlled rod bearing against the cam *L, L'* on the disk, and connections between the movable hopper and the rod, substantially as described.

8. In a tablet compressing machine, the combination with a die-box, the dies, and means for actuating the dies, of an oscillating

spider pivoted at one side of the die box, a hopper rigidly united to the spider and movable therewith, a reciprocating rod connected with the spider and normally pressed, by a spring, into contact with a cam on the die-actuating devices, and an adjustable spring controlled pin engaging with said oscillating spider to yieldingly hold the spider and hopper upon the table or bed of the machine, substantially as and for the purposes described.

9. In a tablet compressing machine, the combination with a die box, the dies, and a disk having means to actuate the dies, and provided with a face-cam, *L, L'*, of a spider pivoted by a loose pin to the bed or table of the machine, a spring-controlled arm bearing upon said pivot pin of the spider, a reciprocating rod bearing against the cam *L, L'* and connected with the spider, and a hopper carried by the spider, substantially as and for the purposes described.

10. In a tablet compressing machine, the combination with a die box, a set of dies, and a disk having presser rolls to simultaneously force the dies together, of an adjustable roll carried by said disk and adapted to contact with the lower die to move the latter a limited distance in the die-box after the loose material has been supplied thereto, for the purposes described, substantially as set forth.

11. In a tablet compressing machine, the combination with a die-box, a set of dies, a hopper, and a disk having presser rolls to actuate the dies, of a shaft carrying a roll to bear against the lower die, and means for adjusting the shaft and locking the same in its adjusted position, substantially as and for the purposes described.

12. In a tablet compressing machine, the combination with a die-box, a hopper, a set of dies, and a disk carrying presser rolls to actuate the dies, of an eccentric rock shaft journaled in the disk at one side of the lower presser roll for the lower die and carrying a weight or quantity determining roll also adapted to contact with the lower die, an adjusting arm rigid with the said shaft and carrying a locking pin, and a segment on the disk with which the locking pin can be engaged, for the purposes described, substantially as set forth.

13. In a tablet compressing machine, the combination with a die-box, a hopper and a set of co-acting dies, of a disk provided with a cam to lift the upper die and a presser roll to depress said upper die, of a rock-shaft journaled in the disk and carrying a presser roll to actuate the lower die, and means for turning and locking the rock shaft to its adjusted position, substantially as and for the purposes described.

14. In a tablet compressing machine, the combination with a die-box, a set of dies, and a hopper, of a disk having means to actuate the upper die, an adjustable presser roll carried by the disk in a position to actuate the lower die, whereby the lower presser-roll may be adjusted to move the lower die at variable

distances relative to the upper die and thus regulate the compression of material between the co-acting dies, for the purposes described, substantially as set forth.

5 15. In a tablet compressing machine, the combination with a die-box, a set of dies, and a hopper, of a disk having means to actuate the upper die, an axially-adjustable shaft or pin journaled in the disk and carrying a
10 presser roll arranged to lift the lower die, an adjusting arm connected to the shaft or pin and provided with a locking-stud, and a segment on the disk with which the locking stud is adapted to engage, substantially as and for
15 the purposes described.

16. In a tablet compressing machine, the combination with a die-box, and a hopper, of the stand having the guides *c, c'*, the upper and lower dies fitted in said guides and provided with the pins or studs, a pivoted disk
20 having the cams which engage with the studs or pins on the dies, and the presser rolls carried by the disk to force the dies into the die-box, substantially as described.

25 17. In a tablet compressing machine, the combination with a stand or base provided with guides, *c, c'*, of a removable die box or bushing fixed in said stand, the removable dies fitted in the guides, *c, c'*, and a disk pivoted to the stand and carrying pressure rolls,
30 a quantity determining roll, and an ejector, all arranged to act in the manner and for the purposes described.

18. In a tablet compressing machine, the combination with a die-box, a set of co-acting
35 dies, and a hopper, of a disk carrying the presser rolls to force the dies into said die-box, and a yielding ejector-cam carried by the disk and arranged to lift the lower die as the
40 disk is moved in one direction and to automatically trip itself and clear the lower die

as the disk is reversed, substantially as and for the purposes described.

19. In a tablet compressing machine, the combination with a die-box, a set of co-acting
45 dies, and a hopper, of a disk having the upper presser roll to act upon the upper die, an adjustable presser roll to raise the lower die toward the upper die as it descends, a weight or quantity determining roll adjustable on
50 the disk and adapted to lift the lower die after the material has been supplied thereto, and a yielding ejector cam carried by the disk between the two lower rolls and adapted to lift the lower die after the material has been
55 compressed in the die box between the upper and lower dies, substantially as and for the purposes described.

20. A tablet compressing machine comprising a base or stand having the table or bed
60 *a*, the die-box rigid thereon, the upper and lower dies guided in said base or stand, the disk pivoted to the base and provided with the cams which engage with the dies and the presser rolls which force the dies together, an
65 ejector cam carried by the disk to actuate the lower die, a weight or quantity determining roll also carried by the disk, at one side of the ejector cam, and arranged to lift the lower
70 die after the ejector cam has cleared the same, a hopper fitted on the bed or table, and mechanism between the disk and hopper to move the latter toward and from the die-box, substantially as and for the purposes described.
75

In testimony whereof I affix my signature in presence of two witnesses.

HARRY H. JONES.

Witnesses:

FLETCHER LADD,
H. DE F. YOUNG.