

No. 40,502. Pill Machine. (Machine à pilules.)

Chester Albert Weller, Ossining, and John Gibney, Sing Sing, both of New York, U. S. A., 1st October, 1892; 6 years.

Claim.—1st. A mixer chamber formed with a recess, consisting of a channel inclined gradually to a certain depth and returning by an incline to the outline of the chamber, means for forcing a pasty mass of material into and through said recess, a die or opening therefrom, and a punch working to force a quantity of material from said recess out through said die. 2nd. A mixer chamber formed with a recess, consisting of a channel inclined gradually to a certain depth and returning by a gradual incline to the outline of the chamber, a wiper sweeping over said recess, and adapted to force a pasty mass of material thereinto, a die or opening therefrom, and a punch working to force a quantity of material from said recess out through said die. 3rd. A mixer chamber formed with a recess, consisting of a gradually descending channel, a bridge plate crossing said channel, a wiper sweeping over the channel and adapted to force a pasty mass of material into said recess, a die or opening therefrom beneath said bridge, and a punch working beneath said bridge to force a quantity of material from said recess out through said die. 4th. A mixer chamber formed with a recess, consisting of a gradually descending channel, a bridge crossing said channel, a wiper sweeping over said channel, a die or opening therefrom beneath said bridge, and a punch working to force a quantity of material from said recess out through said die, and driving mechanism connected to said wiper, and punch for retracting the punch as the wiper approaches the bridge, and protruding the punch as the wiper passes over said bridge. 5th. The combination, with a mixer chamber, of a punch for ejecting material therefrom, a slide carrying said punch, a revolving shaft having a cam projection acting against said slide to force it forward, and a cam projection for retracting said slide, and an adjustable stop carried by said slide against which said cam projection acts. 6th. The combination, with a mixer chamber formed with a recess, of a punch for ejecting material therefrom, a reciprocating slide carrying said punch, an auxiliary slide carried thereby and adjustable relatively thereto, a screw engaging said slides respectively for adjusting them relatively, and a revolving shaft having cam projections acting against said slide to protrude the punch, and against the auxiliary slide to retract the punch. 7th. The combination, of a punch for ejecting measured quantities of material, a slide carrying said punch, an auxiliary slide adjustable thereon, a shaft having cam projection engaging said slide for protruding the punch and said auxiliary slide for retracting it, an adjusting screw engaging said slides respectively, and an adjusting spindle for turning said screw having sliding connection therewith whereby the adjustment of the screw may be effected during the reciprocation of the slide. 8th. The combination, with a mixer chamber, of a punch for ejecting material therefrom, mechanism for reciprocating said punch, and means for disconnecting said mechanism at will in order to stop said punch. 9th. The combination, of a mixer chamber having rotating mixing blades, a shaft carrying said blades, a punch for ejecting material from said chamber, mechanism driven from said shaft for reciprocating said punch, and means for disconnecting said mechanism in order to stop said punch without stopping the mixture. 10th. The combination, of a mixer chamber, a punch for ejecting material therefrom, a shaft having a cam for reciprocating said punch, and means for uncoupling said cam from said shaft at will, whereby said punch may be stopped. 11th. The combination, of a mixer chamber, a punch for ejecting material therefrom, a driving shaft, a cam on said shaft for reciprocating said punch, reciprocal engaging shoulders on said cam and shaft, and means for sliding said cam along said shaft to engage or disengage said shoulders. 12th. The combination, of a mixer chamber, a punch for ejecting material therefrom, a revolving shaft, a cam on said shaft for reciprocating said punch, reciprocal engaging shoulders on said shaft and cam arranged to engage when the cam is elevated and to be disengaged when the cam is depressed, spiral inclines formed on a fixed part of the apparatus, and an oscillating part formed with inclines working against said fixed part and movable against said cam, whereby as it is oscillated in one direction it lifts said cam into engagement, and in the other direction it drops said cam out of engagement with said shaft. 13th. The combination of a mixer chamber, a die or opening therefrom, a punch for forcing a quantity of material therefrom through said die, means for reciprocating said punch, a sliding gate movable across said die to close its opening, and means for reciprocating said gate adapted to move it across said opening when the punch is retracted. 14th. The combination of a mixer chamber, a die or opening therefrom, a punch for forcing a quantity of material therefrom through said die, a reciprocating slide carrying said punch, a sliding gate movable across said die to close its opening, and a lever interposed between said gate and said slide and arranged to be vibrated to move said gate across said opening when the slide is retracted. 15th. A mixer for plastic material, consisting of a chamber formed with an outlet opening at its lower part, an upright shaft revolving in said chamber and having spirally inclined mixing arms, a door for closing said opening, and an adjustable spring for holding said door closed, whereby an excessive pressure within the mixer will be relieved by an escape of material therefrom through said door. 16th. A mixer chamber constructed with a fixed bottom, a removable upper vessel and means for uniting the two detachably together, whereby the upper vessel may be removed for cleaning or repairs.

17th. A mixer chamber constructed with a fixed bottom B¹, having a vertical cylindrical flange *b*, a removable upper vessel B having a bottom flange *a*, and means for detachably uniting said parts consisting of reciprocally engaging wedging ribs and grooves formed on said flanges respectively. 18th. In a pill machine, the combination as a means for moulding pills, of a moulding wheel having a groove in its rim, and an arc shaped moulding shoe arranged parallel with the rim of said wheel and having a coinciding groove in its inner face, said wheel constructed with a removable ring in which said groove is formed, whereby in order to make pills of different sizes or shapes said ring may be replaced by one having a differently sized or shaped groove. 19th. In a pill machine, the combination, as a means for moulding pills, of a moulding wheel having a groove in its rim and an arc shaped moulding shoe arranged parallel with the rim of said wheel and having a coinciding groove in its inner face, said shoe constructed with its inner portion in which said groove is formed removable, whereby in order to make pills of different sizes or shapes, said inner portion may be replaced by one having a differently sized or shaped groove. 20th. In a pill machine, the combination as a means for moulding pills, of a moulding wheel having a groove in its rim, an arc shaped moulding shoe arranged parallel with the rim of said wheel and having a coinciding groove in its inner face, and an adjusting device for moving said shoe toward or from said wheel to adjust it to the correct distance for properly rolling the pins. 21st. In a pill machine, the combination of a vessel for holding the plastic material, a die or opening therefrom, means for expelling the material through said die, and a wheel revolving with its rim close against said die so as to close its opening, and having its rim cut away to admit of the expulsion of the material from the die during the time that such cut away portion is passing the die. 22nd. In a pill machine, the combination of a vessel for holding the plastic material, a die or opening therefrom, means for expelling the material through said die, and a wheel revolving with its rim close against said die so as to close its opening, and having its rim cut away to admit of the expulsion of the material from the die, while such cut away portion is passing the die and the advancing edge of the rim at the end of said cut away portion, formed as a knife to cut off the material expelled from said die. 23d. In a pill machine, the combination of a vessel for holding the plastic material, a die or opening therefrom, means for expelling the material through said die, and a revolving wheel carrying a knife past said die to cut off after each ejection of material therefrom the mass of ejected material. 24th. In a pill machine, the combination of a vessel for holding the plastic material, a die or opening therefrom, a reciprocating punch for periodically expelling measured quantities, of the material through said die, and a revolving wheel carrying a knife past said die and timed relatively to the movements of said punch to cause said knife at each projection of the punch to sheer across the end thereof and cut off the mass of ejected material therefrom. 25th. In a pill machine, the combination of a vessel for holding the plastic material, a die or opening therefrom, a punch for expelling material through said die, a revolving cam for reciprocating said punch, and a revolving wheel carrying a knife past said die which is bevelled on the side toward said die, and said wheel timed relatively to the movements of said punch to cause its knife at each projection of the punch to sheer across the end thereof and by the impingement of its bevelled side thereagainst to start the punch back on its retractile stroke. 26th. In a pill machine, the combination of a vessel for holding the plastic material, a die or opening therefrom, means for expelling the material through said die, a wheel revolving with its rim close against said die and having its rim cut away to admit of the expulsion of the material from the die while such cut-away portion is passing the die, a revolving shaft on which said wheel is loosely mounted, and a clutch for uniting the wheel to said shaft at will. 27th. In a pill machine, the combination of a vessel for holding the plastic material, a die or opening therefrom, means for expelling the material through said die, and means for supplying a stream of powder at the exit from said die, whereby the plastic material is covered with powder and thereby prevented from adhering to other surfaces during subsequent manipulations. 28th. In a pill machine, the combination of a vessel for holding the plastic compound, a die or opening therefrom, means for expelling the compound through said die, a moulding wheel arranged to receive the expelled compound, a moulding shoe, between which and the wheel the compound is rolled to form it into a pill, and means for supplying a stream of powder at the exit from said die, whereby the plastic compound is covered with powder. 29th. In a pill machine, the combination of a revolving moulding wheel, a clutch for connecting it at will to the source of power, and a powder sprinkler driven from said wheel, whereby, when the moulding wheel is stopped, said powder sprinkler is also stopped and arrests the flow of powder. 30th. In a pill machine, the combination, to form a powder sprinkler, of a powder vessel having an outlet opening therefrom, a revolving stirrer therein for agitating the powder, consisting of a succession of stirring rods mounted to move in circular paths of different diameters, and means for driving said stirrer. 31st. The combination, of a powder hopper, a revolving screen into which powder is fed therefrom, a chute receiving the powder falling through said screen, a powder vessel into which the powder is delivered from said chute, a powder outlet from said vessel and a stirrer in said vessel for agitating the powder and causing it to flow out through said outlet. 32nd. The combination, of a mixer, the revolving shaft thereof carrying a disc, a revolving screen having a friction wheel