

J. A. VANNYLEN.
BRICK PRESSER WITH DOUBLE COMPRESSION.
APPLICATION FILED OCT. 10, 1911.

1,056,959.

Patented Mar. 25, 1913.

4 SHEETS-SHEET 1.

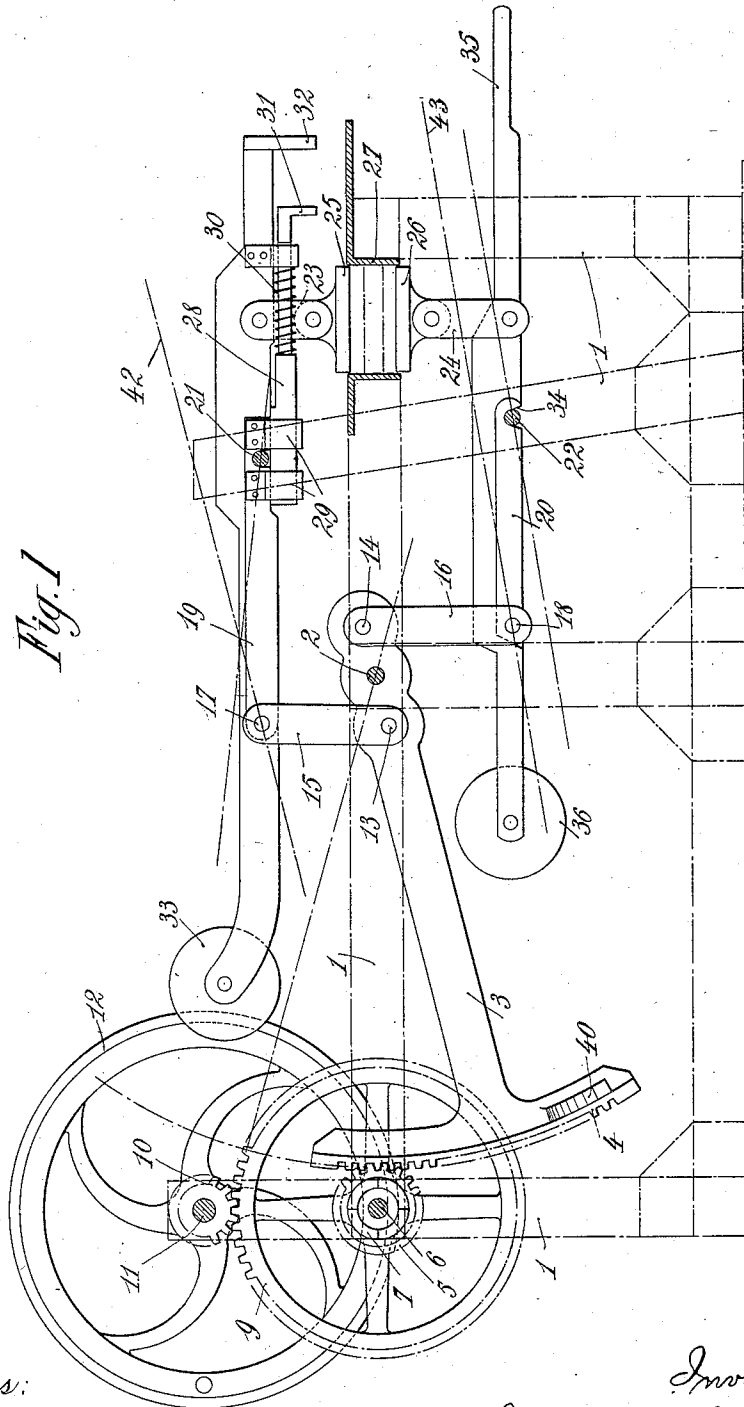


Fig. 1

Witnesses:
B. Rommers
E. Leckert.

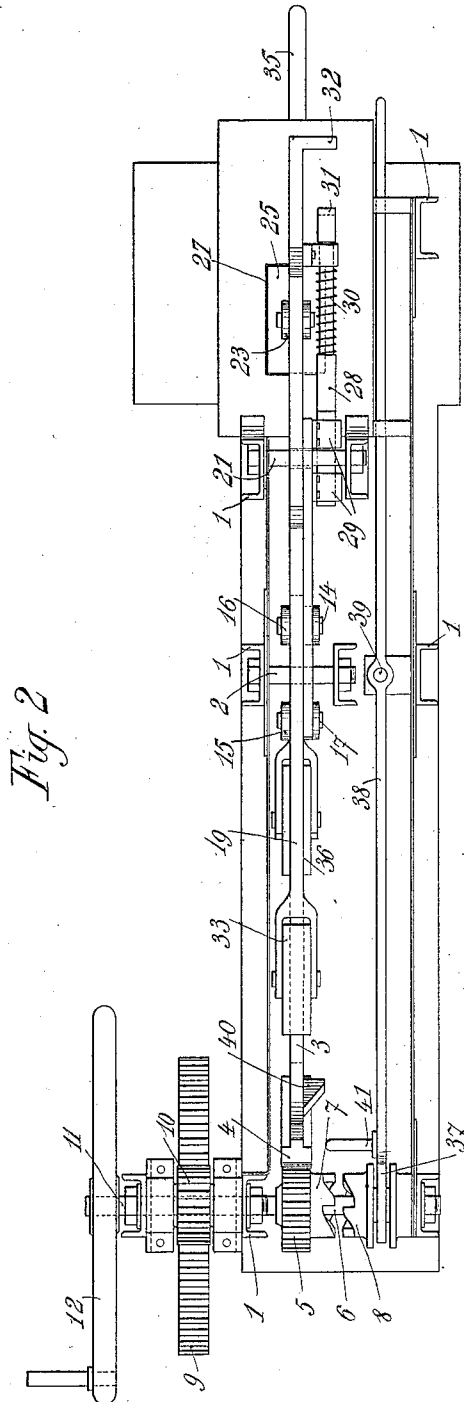
Inventor.
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4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

Fig. 3

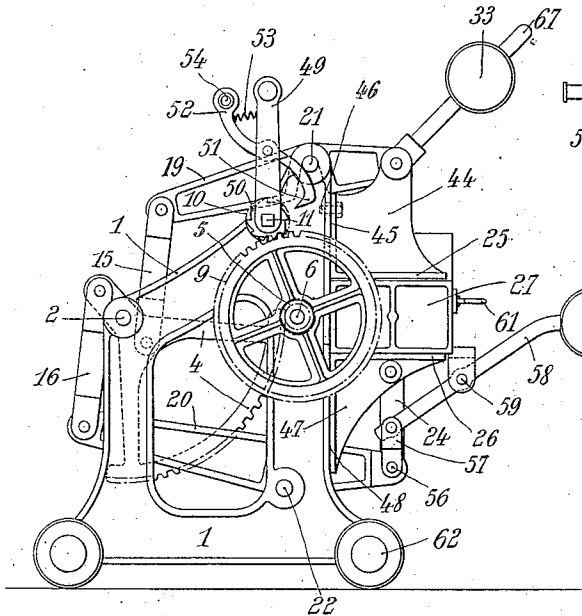


Fig. 4

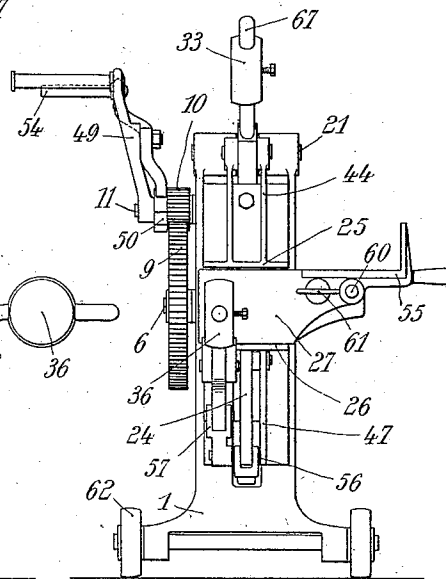
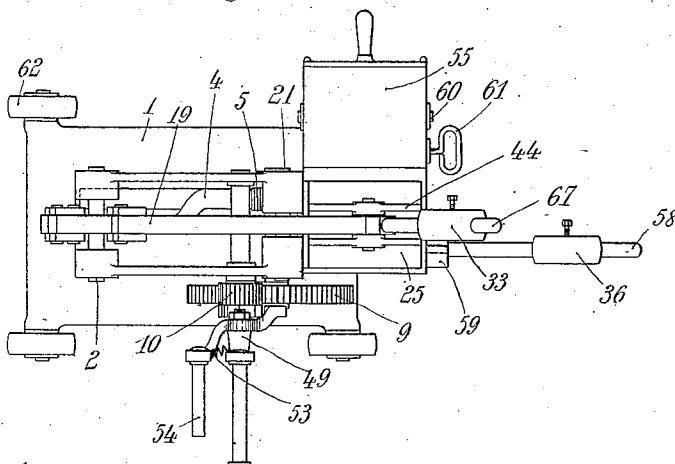


Fig. 5



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4 SHEETS—SHEET 4.

Fig. 6

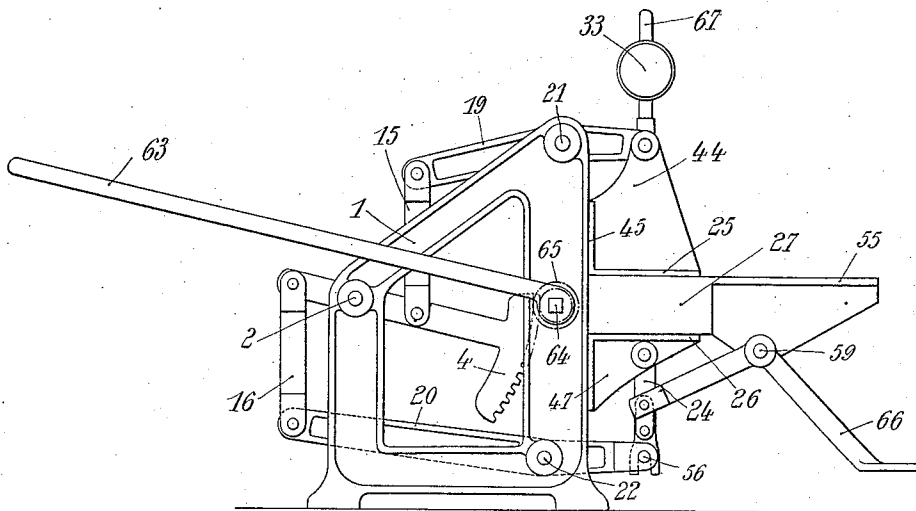
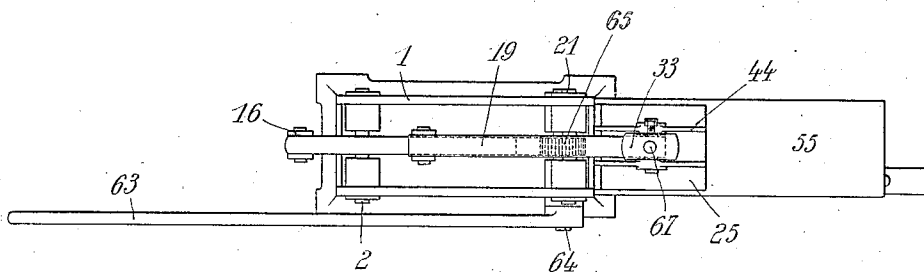


Fig. 7



Witnesses:
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UNITED STATES PATENT OFFICE.

JEAN AUGUSTE VANNYLEN, OF PARIS, FRANCE.

BRICK-PRESSER WITH DOUBLE COMPRESSION.

1,056,959.

Specification of Letters Patent.

Patented Mar. 25, 1913.

Application filed October 10, 1911. Serial No. 653,768.

To all whom it may concern:

Be it known that I, JEAN AUGUSTE VANNYLEN, citizen of the Republic of France, and residing at 94 Rue de Montreuil, Paris, in the said Republic, mechanician, have invented certain new and useful Improvements in Brick-Pressers with Double Compression; 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, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The invention has for its object a brick press imparting double impression, which is adapted for the manufacture of articles of the same size but of different material, such as clay, loam and, more especially, agglomerated articles requiring great pressure, such as gravel, clinker, blast furnace ashes mixed with fat lime, hydraulic lime or cement.

This press comprises essentially pressure plugs or drums which act on the material contained in a mold and are brought toward one another by a double set of levers moved by a toothed sector and adapted to allow the easy opening of the mold for withdrawal of the compressed material.

In the accompanying drawing Figure 1 is a vertical section of one form of construction of the machine; Fig. 2 is the plan. Figs. 3 and 4 are respectively side and end views of an improved construction, of which Fig. 5 is the plan. Figs. 6 and 7 show in elevation and plan another modification.

As is seen in Figs. 1 and 2 of the drawing, on frame 1 of the machine is journaled at 2 an oscillating lever 3 provided at its end with a toothed sector 4. The latter is in mesh with a toothed wheel 5 mounted loosely on the driving shaft 6 and connected with one member 7 of a clutch, for example a claw clutch, of which the other member 8 is mounted on the same shaft 6, so as to slide longitudinally thereon. The driving shaft 6 carries, also a toothed wheel 9 meshing with a pinion 10 mounted on the driven controlling shaft 11 of the machine, which shaft can be operated either by a motor in a suitable manner, or by a hand wheel 12 as depicted. The oscillating lever 3 is provided on both sides of its center of oscillation 2, with two pins 13 and 14, on which articulate

respectively the connecting rods 15 and 16 themselves articulated at 17 and 18 with levers 19 and 20, these latter are supported respectively on axes 21 and 22 carried by the frame and on which they can turn. Both levers 19 and 20 are articulated to small rods 23 and 24 which are jointed at their other end to the drums 25 and 26, which penetrate the mold 27 and are for pressing the material to be compressed. Lever 19 is, normally, retained on its axis 21 by a bolt 28 which slides in lugs 29 carried by this lever and which is urged into the clamping position by a spring 30; an arm 31 allows of the disengagement of the bolt 28, by compressing the spring, so that lever 19 may be raised by means of an arm 32 at its end. This lever is also provided at its opposite end with a counterweight 33, and is easily raised or turned about the axis 17. Lever 20 is not attached to its axis of 22 but has on its lower face a notch 34 in which that axis is engaged in such a way that the lever can be lifted by the end arm 35 so as to turn around the axis 18, in the same manner as lever 19. A counterweight 36 helps the raising movement. The clutch 8 fixed to shaft 6 is controlled by a fork 37 carried by lever 38 adapted to oscillate on an intermediate axis 39 and which can be controlled at the front end of the machine to produce the coupling of the two parts 7 and 8 of the controlling clutch. On the tooth sector 4 is also formed a cam 40 adapted to engage with a projecting piece 41 carried by lever 38 to produce automatically, at the end of the ascending travel of the toothed sector, the automatic uncoupling of the machine.

The operation of the machine is as follows: The system of controlling levers being in the position represented in Fig. 1, when coupling of the clutch 7—8 by means of lever 38 is effected, the toothed sector 4, driven by the motor pinion 5, produces by means of the system of levers and connecting rods 3, 15, 16, 19, 20, 23 and 24 the bringing together of the pressure drums 25 and 26, which, coming into the position shown dotted, compress the material contained in mold 27. At the end of the compressing period the cam 40 and stop 41 come into engagement and automatically cause the unclutching of the system of levers. By operating the bolt 28 by means of the arm 31, the lever 19 can with the aid of the terminal arm 32 be raised, for example, to

the position indicated by 42, to allow the removal of the upper part of the mold 27, of which the plug 26 forms the bottom; this lever is, moreover, raised without effort and, as it were, by itself under the action of its counterweight 33. Lever 20 may likewise be raised by means of arm 35 and be brought into position 43, which operation by reason of the rod 24 and the plug 26 will cause the removal of the manufactured brick from the mold. With the withdrawal of the brick, the lever 20 is allowed to fall, the mold 27 refilled with material, the lever 19 returned and the motor pinion 5 clutched by means of lever 38. The machine is ready afresh to recommence its compressing operation, for, during the unclutched period of the system of levers, the toothed sector 4 is returned to its initial low position under gravity. Then by turning the hand wheel 12 a fresh brick is compressed.

The construction in Figs. 3, 4 and 5 comprise a somewhat different arrangement of controlling levers which here project from the side of the mold and the driving gears, thus considerably reducing the size of the machine and simplifying its operation. It also aims at a particular arrangement for controlling the compression drums with the object of facilitating the un-molding, to increase the efficiency of the compression by fixing the point of application of the control levers in the axis of the drums. In this arrangement the upper compressor 25 is provided with an upward extension 44 slidable in a slide 45 of the frame 1, a catch 46 serving as a guide and also to limit its travel. On the upper extension 44 of the drum 25 is hinged the controlling lever 19 itself articulated with the frame on axis 21, on which it simply rests by means of a notch provided for the purpose. The lower drum 26 is also provided with a downward extension 47 which slides on a slide 48 of the frame and to which is attached the connecting rod 24 provided at its extremity with a journal 56 supported in a recess of lever 20 pivoted at 22 on frame 1. On the other hand, on the frame of the machine is journaled at 2 the toothed sector 4 in mesh with toothed wheel 5 which is here fixed to shaft 6 which carries also a large toothed wheel 9 engaging with a small toothed wheel 10 mounted on an upper shaft 11 which can be operated by means of a crank 49. On the sector 3—4 in the neighborhood of its center, there are attached the two rods 15 and 16 pivoted respectively at their ends, on the controlling levers 19 and 20. The rotary movement of the sector 3—4 by means of the crank 49 produces an oscillation of levers 19 and 20 and consequently the bringing together of the pressing drums. The reverse movement of these drums is produced automatically, as in the preceding example,

by the weight of the moving parts of the machine.

To prevent the movement of crank 49 by reason of the return movement of the drums, which might occasion accidents, it is advantageous to interpose between that crank and the toothed wheel 10, which actuates it, a check and spring device, such as for example that represented which permits the sector and system of levers to return by themselves to their initial position without turning the crank. This arrangement consists in making toothed wheel 10 loose on the shaft 11 and connecting it with a ratchet wheel 50 with which engages a pawl 51 formed on the end of a lever 52 articulated on the crank 49 and held back normally out of engagement with wheel 50 by a spring 53. The lever 52 terminates in a bent arm or pin 54, which is parallel to the pin of the crank 49 so that by grasping these two pins at the same time the toothed wheel is turned by the crank while as soon as the pin 54 is let go wheel 10 can turn freely without turning the crank. It goes without saying that the same effect may be attained by employing a free wheel arranged either between the crank and shaft 11 or between that shaft and toothed wheel 10. On the extension 44 of the upper plug 25 is fixed a lever 67 provided with a counterweight 33 which allows of the upper plug being raised to permit the unmolding which is attained by turning the lever 19 around its point of articulation on rod 15, by reason of the notch arranged on this lever for the accommodation of the axis 21. On the other hand, on the journal 56 of rod 24, attached to the lower plug 26, is also mounted a small rod 57, whose other end is articulated on a large lever 58 having a counterweight 36 and itself pivoted at a fixed point 59 of the frame. This arrangement, by pressing on the free end of lever 58, allows of the lower plug 26 being raised for taking the brick out of the mold without having at the same time to raise the lever 20. The upper margin of mold 27 is prolonged by a table 55, pivoted at 60 on the frame and which can be oscillated either automatically or by withdrawing a clamping key 61 so as to withdraw easily the molded products.

In order to make the machine easily transportable for delivery on the work, the assembled frame is advantageously mounted on four wheels 62, permitting a rapid and convenient movement.

Of course instead of its being operated by hand by a crank, the machine can be actuated by a motor operating in suitable manner the gearing 9—10.

The modified design of Figs. 6 and 7 shows a different manner of operating the machine by means of an oscillating lever. This lever 63 is fixed on a shaft 64 on which is keyed 130

a toothed wheel 65 meshing with sector 4 which controls, in the same manner as in the preceding constructions, the pressing plugs or drums 25 and 26. The different parts of the machine are the same, except that here the lever for raising the lower pressing plug is replaced by a pedal lever 66. The turning of the lever 63 will produce, in the same manner as the rotation of the crank 49, the bringing together of the plugs 25 and 26.

Of course, in all these constructions, the mold may be of any size and the travel of the compressing plugs any length, and the mold may, at will, be divided into several compartments according to the size of the products to be turned out.

Having now described the nature of my said invention and the best means I know of carrying the same into practical effect, I claim:—

A press imparting double compression for molding bricks and the like, comprising in combination with the press frame and a driving shaft, a mold, a pair of compressing

drums movably mounted within the mold, means adapted to move the drums in opposite directions, said means comprising a toothed wheel loosely mounted on the driving shaft, a pivotally mounted toothed sector meshing with the wheel, levers mounted to oscillate on the frame, rods connecting the sector with the levers and a connection between each lever and a compressing drum, a device adapted to be operated at will to couple the toothed wheel with the driving shaft, means operating to lift one of the compressing drums in a direction out from the mold and means operating to move the other drum within the mold in the same direction whereby the brick is removed from the mold.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

JEAN AUGUSTE VANNYLEN.

Witnesses:

H. C. COXE,
ALCIDE FABE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."