J. H. DYETT.

MACHINE FOR MAKING BRICKS.

APPLICATION FILED MAY 10, 1907.

952,790.

Patented Mar. 22, 1910.

4 SHEETS—SHEET 1.

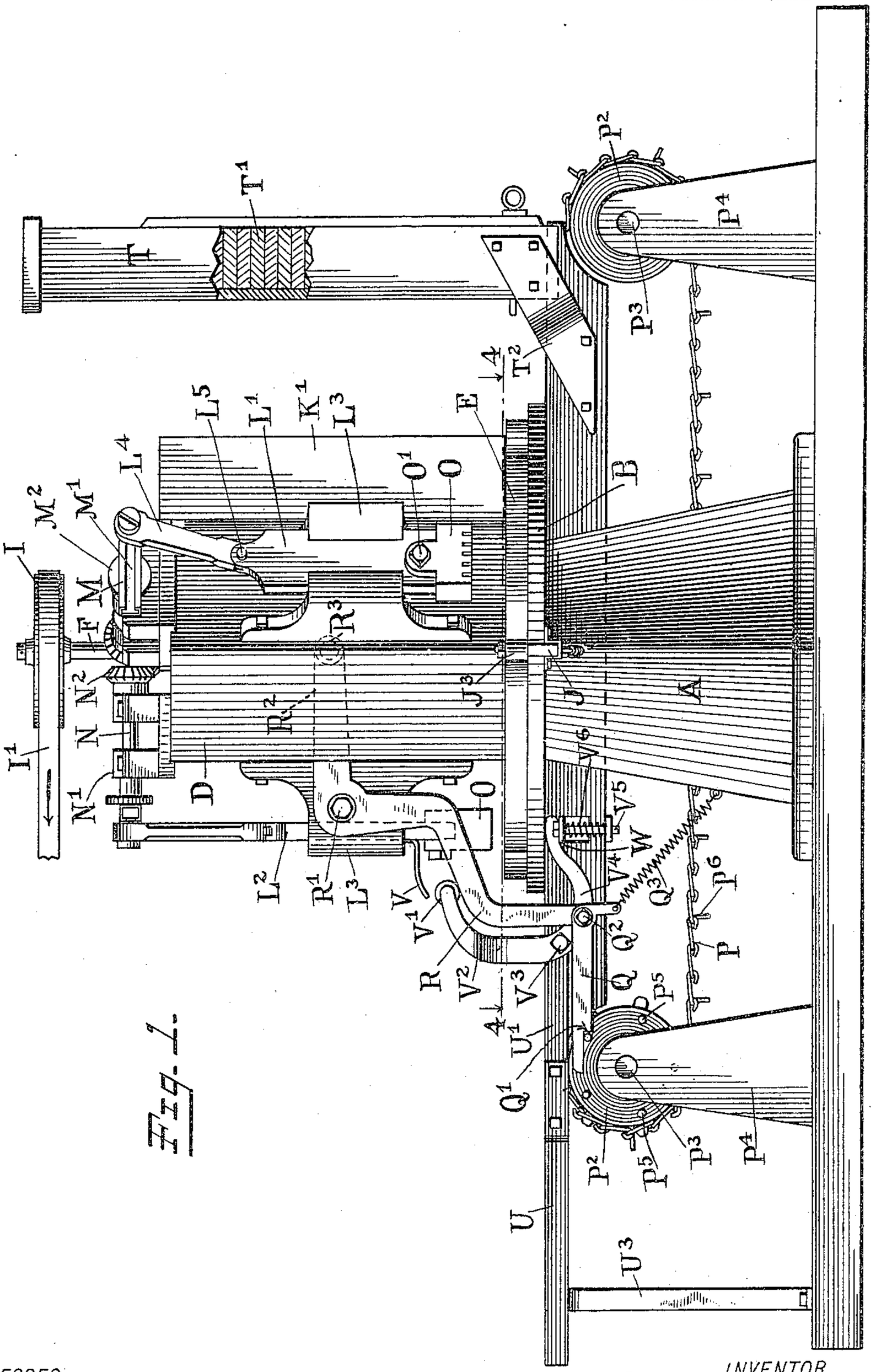

Fig. 1.

WITNESSES

G. V. Rasmussen

John A. Kekkenbuch.

INVENTOR

James H. Dyett

BY

Briesen & Knauth

ATTORNEYS

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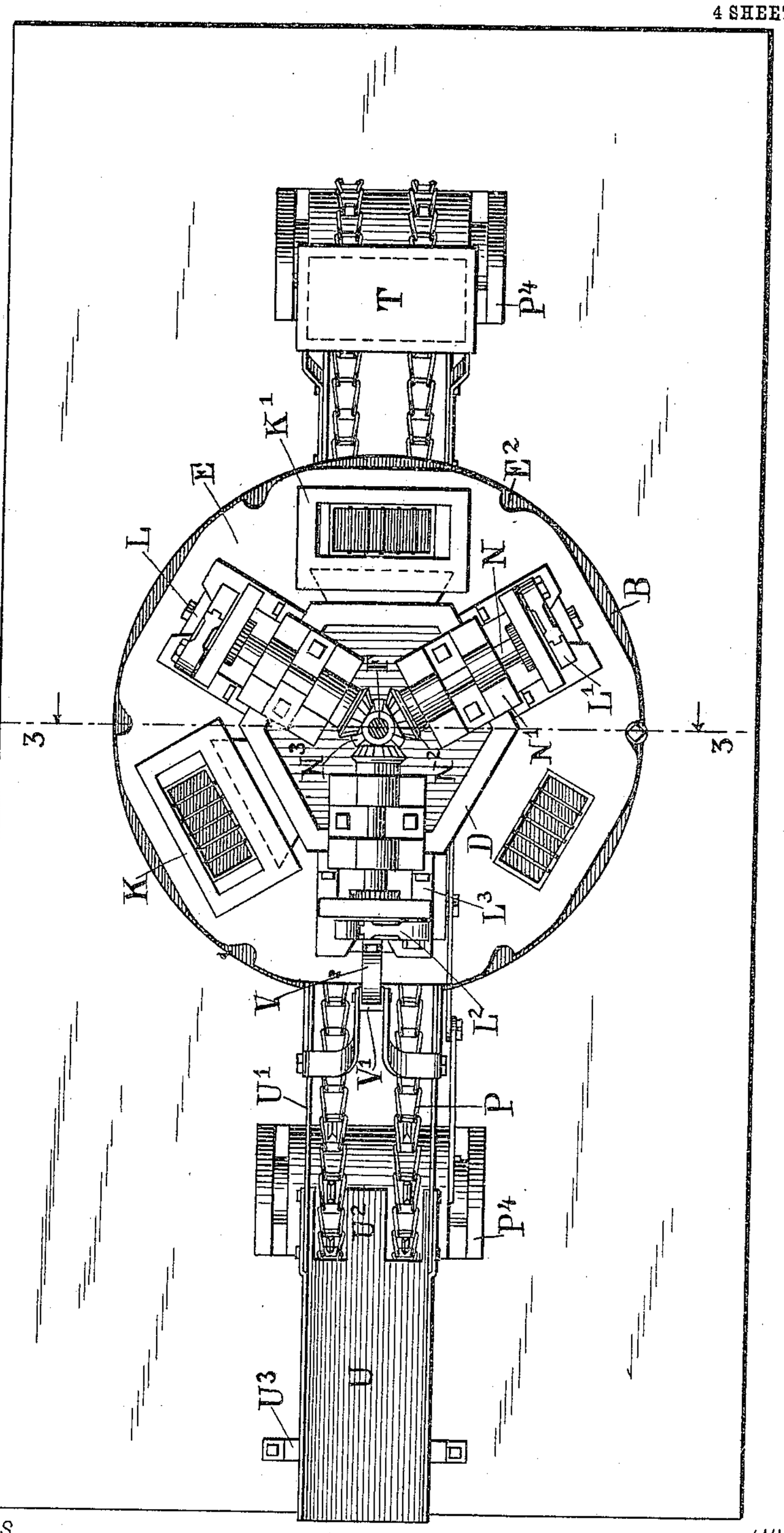
4 SHEETS—SHEET 2.

Fig. 2.



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G. V. Rasmussen

John A. Tellbuteck.

INVENTOR

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BY

Briesen & Knauth

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Fig. 8.

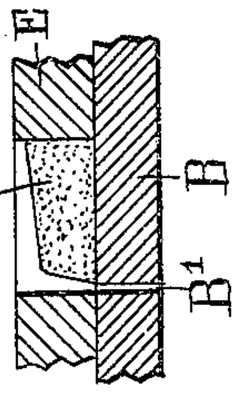

Fig. 10.

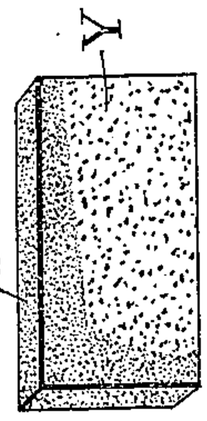

Fig. 7.

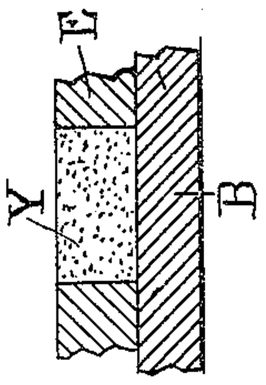

Fig. 9.

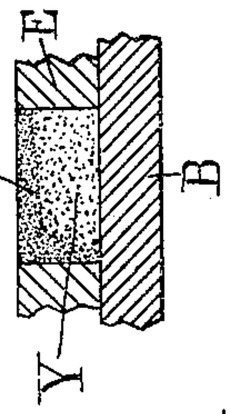

Fig. 11.

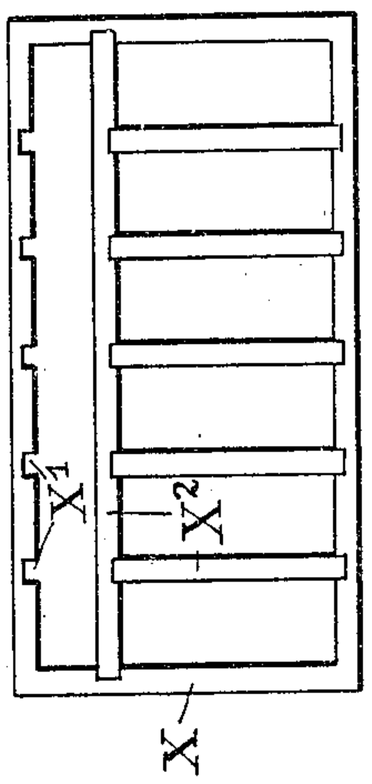

Fig. 4.

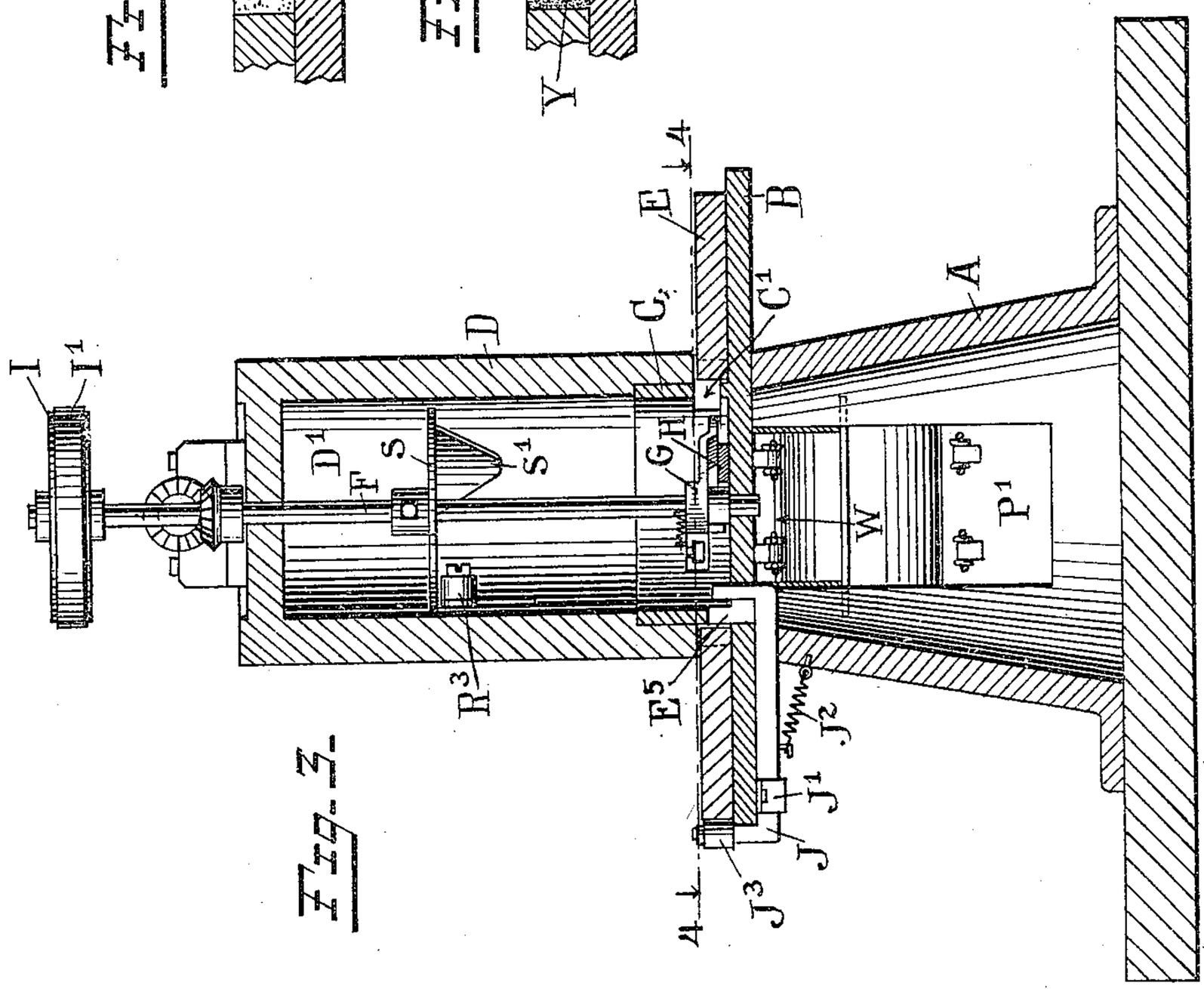

Fig. 2.

WITNESSES

G. V. Rasmussen

John A. Kekkenbeck.

INVENTOR

James H. Dyett

BY

Briesen & Knauth

ATTORNEYS

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4 SHEETS—SHEET 4.

Fig. 6.

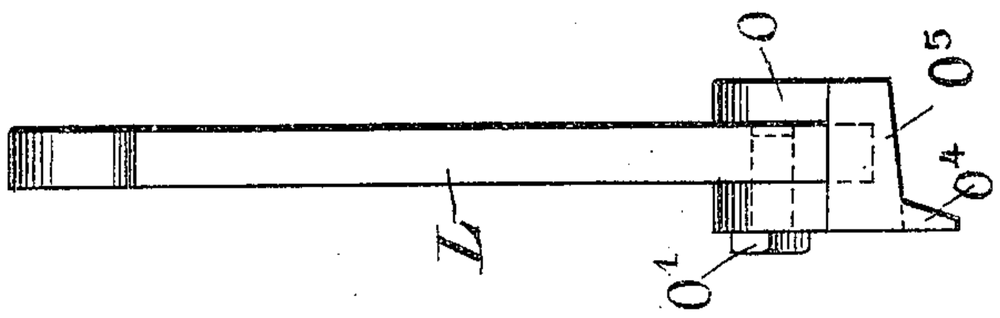

Fig. 5.

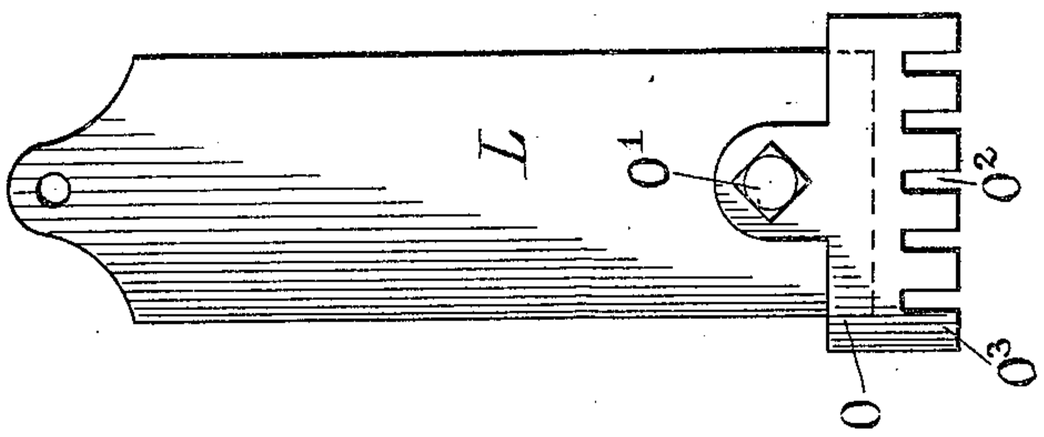

Fig. 4.

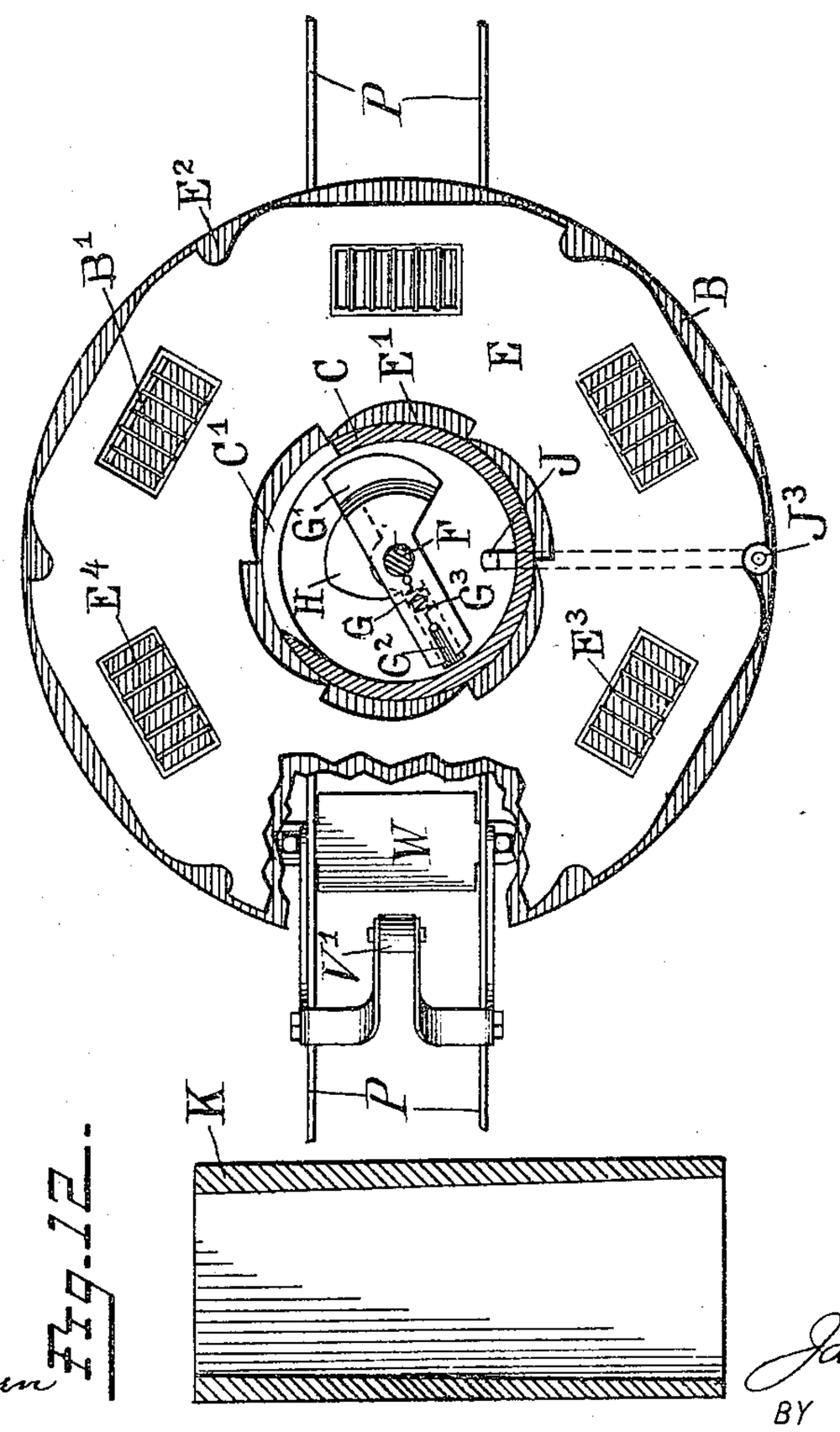

Fig. 12.

WITNESSES

G. V. Rasmussen

John A. Kellenbeck.

INVENTOR

James H. Dyett

BY

Briesen & Knauth

ATTORNEYS

UNITED STATES PATENT OFFICE.

JAMES H. DYETT, OF NEW YORK, N. Y., ASSIGNOR TO DYETT MACHINE COMPANY, OF WILMINGTON, DELAWARE, A CORPORATION OF DELAWARE.

MACHINE FOR MAKING BRICKS.

952,790. Specification of Letters Patent. **Patented Mar. 22, 1910.**

Application filed May 10, 1907. Serial No. 372,853.

To all whom it may concern:

Be it known that I, JAMES H. DYETT, a citizen of the United States, and a resident of the borough of Brooklyn, county of Kings, city and State of New York, have invented certain new and useful Improvements in Machines for Making Bricks, of which the following is a specification.

My invention relates to brick-making machines and has for its object to improve and simplify the construction of machines of this kind and to provide a machine which will make a brick the body of which is of a relatively cheap material and which is provided with a facing of better material.

To this end my invention consists in certain combinations and construction of parts which will be fully described hereinafter and the features of novelty will be pointed out in the appended claims.

Reference is to be had to the accompanying drawings in which—

Figure 1 is a side elevation of my improved machine; Fig. 2 is a plan view thereof; Fig. 3 is a sectional view thereof on the line 3—3 of Fig. 2; Fig. 4 is a sectional plan view substantially on the line 4—4 of Fig. 3; Fig. 5 is an enlarged front elevation of one of the plungers of my machine; Fig. 6 is a side elevation thereof; Figs. 7, 8, 9 and 10 are detail sectional views showing the various steps of the operation I use in making a brick; Fig. 11 is a detail plan view of the lining for the molds, and Fig. 12 is a sectional view of one of the hoppers.

A represents a pedestal secured in position on the floor and provided with a bed plate B and an upwardly projecting collar C. To this collar C is secured, by means of screws or otherwise, a tower D having a head D′. A rotatable table E having a central notched opening E′ surrounds the collar C and is located immediately above the stationary bed plate B. This table E is provided on its periphery with a number of indentations E², the purpose of which will be described more fully hereinafter. The table E is further provided with a series of molds E³ which are divided into a number of spaces by means of partitions E⁴ so that a plurality of bricks will be made in each mold. The table E is given an intermittent rotary motion by means of the following mechanism.

F is a shaft which projects through the head D′ of the tower D and into the bed plate B, the said head and bed plate thus serving as bearings for this shaft. On this shaft F is located an arm G having a cam portion G′ and a plunger G² which is normally pulled toward the shaft F by means of a spring G³.

H is a cam secured to and projecting up from the bed plate B.

At its upper end the shaft F carries a pulley I to which power is applied by means of a belt I′.

J is a plunger which extends through a bearing J′ on the bed plate B and is normally pressed toward the center of the machine by means of a spring J². At its outer end the plunger J carries a roller J³ which normally rests in one of the indentations E² and serves as a positioning stop to limit the rotary movement of the table E. The inner end of the plunger extends through an opening E⁵ in the plate E and is adapted to be periodically engaged by the cam G′ as will be more clearly brought out hereinafter.

Hoppers or chutes K and K′ are secured to the sides of the tower D and have their lower ends just above the table E. These chutes are so arranged that each of the molds E³ will be brought under the lower ends of these chutes, it being understood that at other times the table E serves to close these lower ends of the chutes or hoppers. These hoppers or chutes K and K′ are each wider at the lower end than at the top so that the material contained therein will have a tendency to fall away from the sides of said hoppers and will therefore not clog up the hoppers.

Reciprocating plungers L, L′ and L² work in suitable guides L³ secured to the tower D and are connected at L⁵ with pitmen L⁴ which in turn are pivotally secured to blocks which are adjustable in grooves M′ of members M, thus making it possible to adjust the stroke of the plungers. The members M are each secured to disks M² which are carried by shafts N mounted in suitable bearings N′. The shafts N all extend toward the center of the machine and are each provided with a bevel pinion N² which meshes with a bevel pinion N³ carried by the main shaft F. Each plunger has secured to it at its free end a removable head O held in position by a bolt O′. These

plunger heads are interchangeable and are always of a character to properly coöperate with the mold. That is, if it is intended to make one large block in each mold the head will be a solid head to just fit the mold. If, however, as shown in the drawings, it is intended to make a number of smaller bricks in each mold, the plunger is provided with a head having a series of cuts O^2 which take over the partitions E^4, so that each space formed by the said partitions will have a corresponding plunger on the head O, that is, in this case the head really comprises a number of small connected plungers O^3. All of the interchangeable heads O for the plunger L, no matter whether they comprise a solid head or a series of small heads are shaped as shown in Fig. 6 that is, they are provided with a nose O^4 and an inclined surface O^5, the purpose of which will be fully described hereinafter.

Chain belts P, having projections P^6 pass beneath the bed plate B through openings P′ in the pedestal A and over sprocket wheels P^2. These sprocket wheels are mounted on shafts P^3, journaled in bearings P^4 which are secured in position on the floor. These belts receive an intermittent movement as follows: One of the sprockets P^2 is provided on its one face with projections or pins P^5 which are adapted to be engaged by a shoulder Q′ on an arm Q which is pivotally secured at Q^2 to a lever R. The arm Q is maintained in operative position by means of a spring Q^3. The lever R is pivoted at R′ to a stationary portion of the machine and has a member R^2 extending through a suitable opening into the tower D and carrying a roller R^3. This roller is adapted to ride on the under surface of a disk S which is carried by the main shaft F. This disk S is provided with a cam portion S′ which, as the shaft F rotates, engages the roller R^3 and forces it downwardly. This operation swings the lever R on its pivot R′ and causes the arm Q to advance the projection or pin P^5 with which the shoulder Q′ is engaged thus partially rotating the sprockets P^2 and moving the upper run of the belts P to the left in Fig. 1.

T is a receptacle for pallets T′ and has its delivery end in close proximity to the upper run of the chain belts P. The said receptacle is secured by means of braces T^2 to a stationary part of the apparatus.

U is a chute which is secured to side members U′ and has a projecting portion U^2 which extends over the sprocket P^2. The other end of this chute is supported on a brace U^3 which, if desired, may be adjustable so that the end of the chute may be raised or lowered.

V is a projection on the plunger L^2 and is adapted to engage a roller V′ carried by arms V^2. These arms V^2 are pivoted at V^3 to the side members U′ and have projecting members V^4 which engage plungers V^5 held in their normal position by springs V^6. To the lower ends of these plungers V^5 is secured a cross-piece W, over which the upper runs of the chain belts travel, it being understood that the said upper runs are somewhat slack for the reason to be more fully explained hereinafter.

In order to permit of the molds being changed to accommodate more or less bricks or to make bricks of different sizes I provide a frame X which is adapted to fit inside of each mold E^3 and is provided with notches X′ into which partitions X^2 are adapted to fit. Thus if it is desired to make one large block the whole frame with partitions is removed leaving the mold with smooth sides. If a number of smaller bricks are intended to be made at the same time the frame with the corresponding number of partitions therein is placed in the mold and a corresponding head placed on each plunger L, L′ and L^2.

In operation power is applied to the main shaft F through the medium of the belt I′ and pulley I and the table E is given a partial rotary movement in the following manner. As the shaft F is rotated the inner end of the plunger G^2 will ride up on the stationary cam H and will be forced outward through an opening C′ in the collar C. The outer end of the plunger will thus become engaged with one of the projections of the notched opening E′ and as the shaft F continues to rotate will carry the table E with it. Meanwhile the cam G′ has engaged the inner end of the plunger J and pressed it outward and removed the roller J^3 from the indentation E^2, leaving the table free to be rotated as just described. As the inner end of the plunger G^2 rides down on the cam H the said plunger will be retracted by the spring G^3 and the table will again remain stationary. The roller J^3 which has ridden on the periphery of the table E snaps into another indentation E^2 through the medium of the spring J^2 and the table E is again firmly held in position. It is to be understood that these operations are so timed that this partial rotation of the table E will bring one of the molds E^3 under the mouth of the hopper K which contains material of a comparatively cheap grade. Some of this material Y now enters the said mold E^3 and fills it as shown in Fig. 7, the bed plate B serving to prevent the material from leaving the said mold at the bottom. The table E is now again moved as before described, which movement brings the mold containing the cheap material under the plunger L. Coincident with this point the bed plate B is provided with a slot B′ as clearly shown in Fig. 8. The plunger L is now pressed down through the medium of

the connections with the main shaft F and the material in said mold is subjected to a light pressure. During this operation some of the material has been forced from the mold through the opening B′ and the material has been left in the form shown in Fig. 8. The table E is now again rotated and the mold brought beneath the mouth of the second hopper K′ which is filled with a material of better grade, known as facing material. Some of this better material Z now fills the space in the mold shown in Fig. 8 so as to present the appearance illustrated in Fig. 9. The table is now once more rotated and the mold with the materials as shown in Fig. 9 is brought beneath the second plunger L′. At this stage the two materials are subjected to a heavy pressure of the plunger L′ and become united forming the brick shown in Fig. 10. The table is now again rotated and the mold containing the finished brick is finally brought under the third plunger L^2 which is merely an ejecting plunger. This plunger L^2 presses the finished brick out of the mold through an opening in the bed plate B onto one of the pallets T′ which have been supplied to the chain belts P from the receptacle T and carried away to the chute U. It is to be understood that each pallet with the finished brick thereon is moved down the chute U by the succeeding pallet and brick. Owing to the fact that the brick, when it reaches the final stage or the point where it is expelled, is still in a plastic state, it is important that the brick in this condition should not receive any pressure from the plunger L^2. For this reason I have supplied the plunger L^2 with the projection V which as the plunger moves down engages the roller V′ and swings the arm V^2 on the pivots V^3. The projecting members V^4 of the arm will thus be caused to press the plungers V^5 downward, which will cause the cross-piece W to move down and the upper runs of the belts to drop. The pallet with the finished brick thereon will therefore move downward without changing the distance between the end of the plunger and the finished brick. This will be so proportioned that the plunger L^2 will just lightly touch the surface of the brick and gently force it from the mold without distorting its shape. The plunger L^2 stays in its lower position while the belts P move to carry the brick away from the mold. As the plunger L^2 rises the chain belts and the cross-piece W are returned to normal position by the springs V^6. It is to be understood that the same operation is repeated in each mold so that the machine is continuous in its action. It is to be further understood that while I have described the operation with regard to one brick, a number of bricks may be made in each mold in the same way, it being only necessary to add the partitions to the molds and to change the character of the plunger head to correspond. With my machine I thus produce a brick with the one side and one end faced with a material of any quality while the body of the brick is made of a cheaper material. The cost of the brick is thus materially reduced without impairing its general wearing qualities. The two materials are firmly united by pressure and separation by breaking is not liable to occur. The facing may be suitably colored.

While I believe the method described herein and the article produced thereby to be novel and original with me, I have in this application claimed only the machine reserving the right to claim the method and the article in separate applications.

It will be observed that while the brick is being molded, it is supported by the bed plate B, and not by a pallet T′. No pressure is therefore exerted on the pallet during molding.

I claim:

1. In a brick press, a mold, means for compressing the material therein, an ejector for the molded bricks, a traveling conveyer arranged to support the brick while it is being forced from the mold, and a resilient cushioning device for allowing said conveyer to move yieldingly transversely of its path.

2. A brick press comprising a mold, a bed plate forming a bottom for the mold and having an opening materially smaller than the mold, means for effecting relative movement of the bed plate and mold, a plunger arranged to compress the material in the mold when the latter registers with the opening in the bed plate and to expel part of the material through said opening, forming a free space within the mold, and means for compacting and uniting said material with another material filled into said free space.

3. A brick press, comprising a mold, a bed plate forming a bottom for the mold and having an opening smaller than the mold adapted to register therewith at times, means for effecting relative movement of the bed plate and mold, a plunger provided with a projection corresponding approximately to the size of said opening and with an inclined face at the lower end of which said projection is located, said plunger being adapted to compress the material in the mold and to expel part of the material through the opening in the bed plate, forming a free space in the mold, and means for compacting and uniting the said material with additional material filled into said free space.

4. A brick press, comprising a mold, a bed plate forming a bottom for the mold and having an opening materially smaller than the mold, means for effecting relative

movement of the bed plate and mold, means for filling the mold, a plunger arranged to compress the material in the mold when the latter registers with the opening in the bed plate and to expel part of the material through said opening, forming a free space within the mold, means for filling said free space, and means for compacting and uniting the two fillings.

5. In a brick press, a mold, means for compressing the material therein, an ejector for the molded bricks, a traveling conveyer one run of which is arranged to receive the brick when forced from the mold by the ejector, and a spring-pressed support for said run, having a tendency to move toward the mold.

6. In a brick press, a mold, means for compressing the material therein, an ejector for the molded bricks, a conveyer one run of which is arranged to travel adjacent to the mold and to receive the ejected bricks, a spring-pressed support for said run, having a tendency to move toward the mold, and means, operated by the ejector, for moving said support away from the mold.

7. A brick press comprising a mold, means for filling it and for compressing the material therein, a conveyer, means for operating said conveyer intermittently, a pallet receptacle from which pallets are delivered to said conveyer successively, and means for discharging the bricks successively on said pallets while supported on the conveyer.

In testimony whereof I have hereunto signed my name in the presence of two subscribing witnesses.

JAMES H. DYETT.

Witnesses:
JOHN LOTKA,
JOHN A. KEHLENBECK.