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S. WHITMAN.

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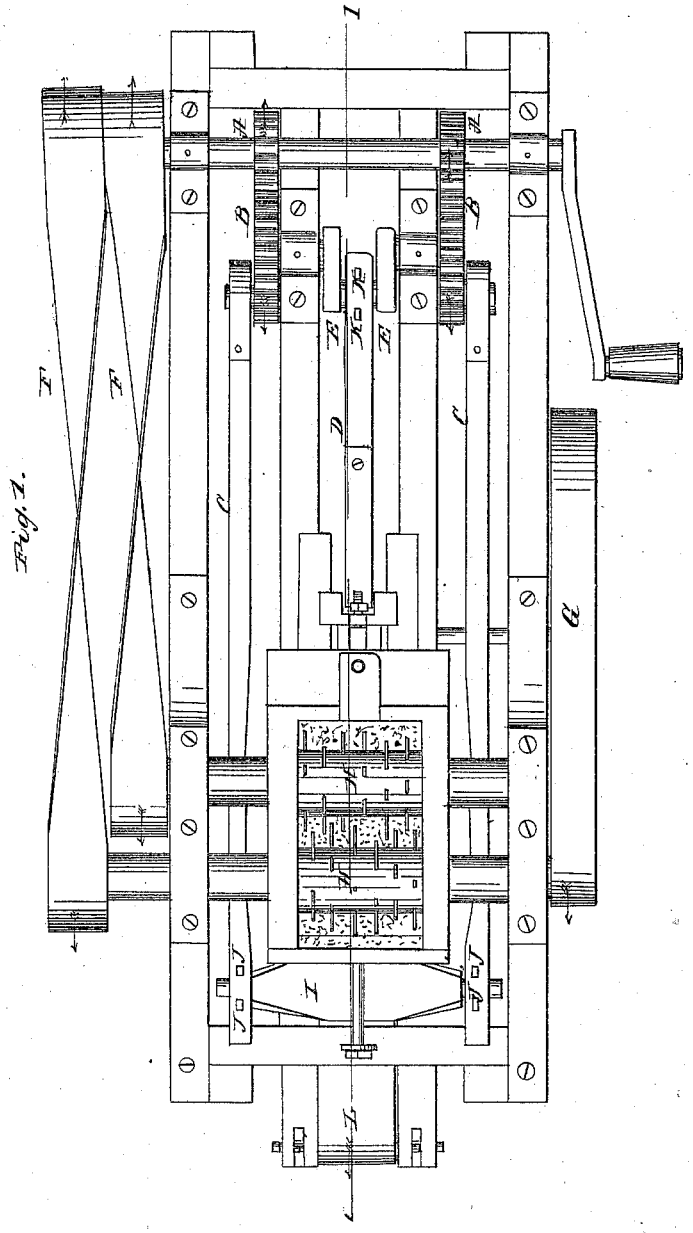

Fig. 1.

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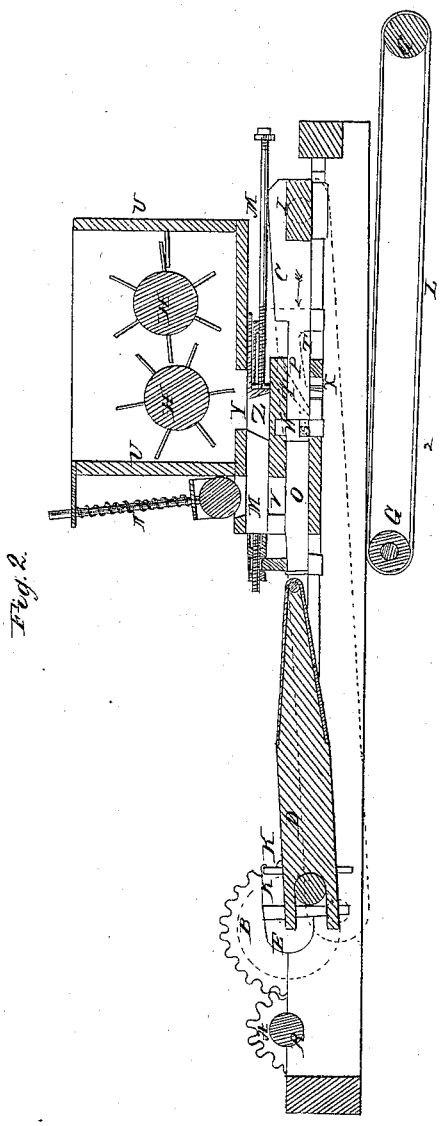

Fig. 2.

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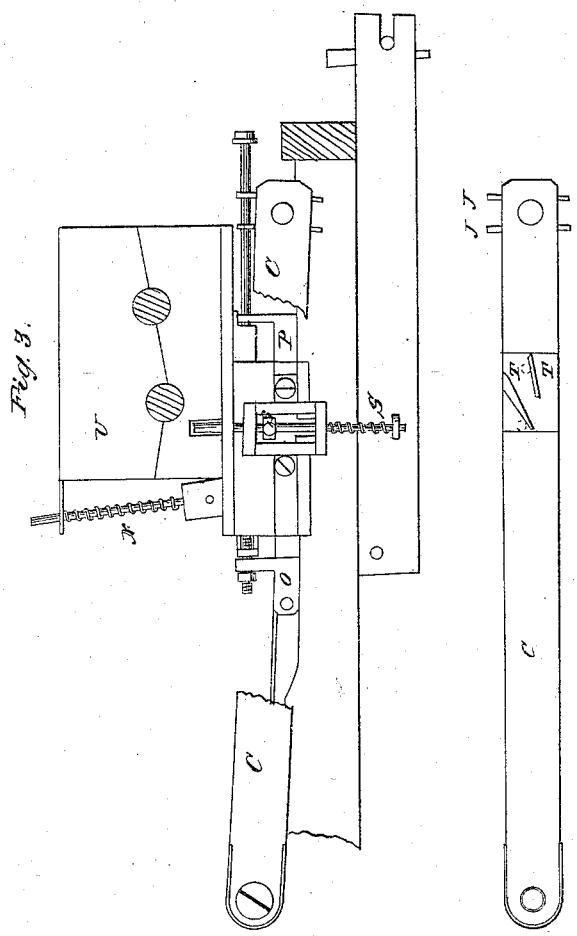

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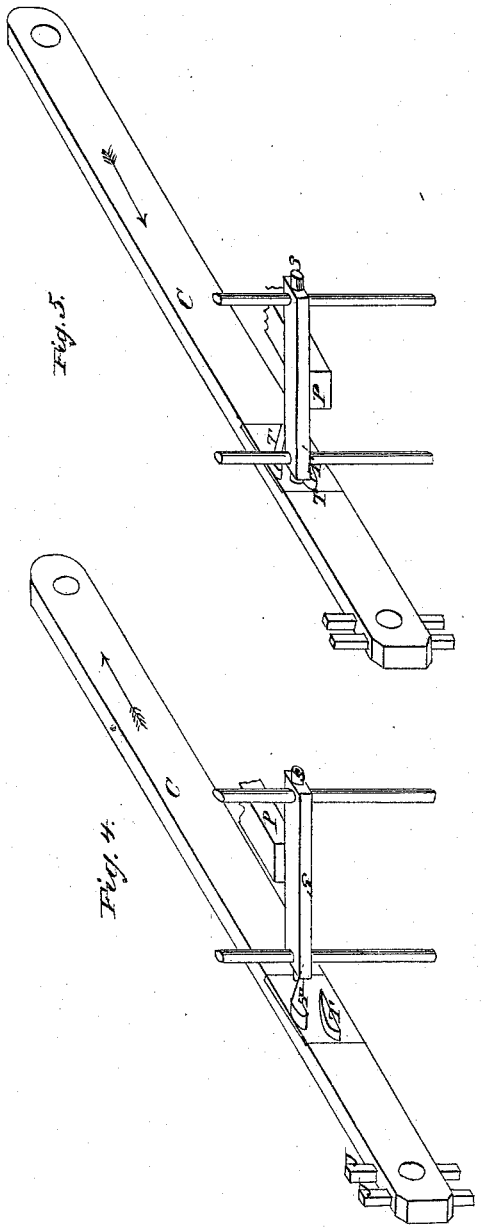

UNITED STATES PATENT OFFICE.

SHEPHERD WHITMAN, OF NEW ALBANY, INDIANA.

BRICK-PRESS.

Specification of Letters Patent No. 7,313, dated April 23, 1850.

To all whom it may concern:

Be it known that I, SHEPHERD WHITMAN, of New Albany, county of Floyd, State of Indiana, have invented, made, and constructed in the small way a new and useful Improvement in Making Pressed Brick, which I call "Whitman's Brick-Press," and that the following is a full, clear, and exact description, reference being had to the annexed drawings, making part of this specification in which—

Figure 1 is a top view plan of the press. Fig. 2 is a perpendicular and longitudinal section of the same. Fig. 3 is a side view of portions of the machine. Fig. 4 is a perspective view of the clearer S, S, and one of the outside pitmen C about to raise the clearer S S by its upper cam T out of the way of the returning plunger P. Fig. 5 is a perspective view of the same representing the pitman C about to let down the clearer by the lower cam T′.

The clay in its rough state, about as damp as it is in ordinary weather, when first taken from the bank, is thrown into the hopper U in any quantity the hopper will hold when it is broken up by the teeth of the breaker H H. The clay should not be so damp as to adhere together when broken up nor much drier than that. These breakers are put in motion by the cross bands F F in the direction of the arrows. It will be seen that the breakers H H both turn the same way, this must be the case or they will clog. The back breaker H does most of the breaking, by its teeth passing through some comb like teeth standing in the back part of the hopper U. The forward breaker H keeps the clay constantly moving over the opening Y in the bottom plate of the hopper U through which the clay in a finely broken state is swept by the motion of the teeth of the forward breaker H into the recess Z of the feeder M M that is slid under the opening Y. The feeder is put in this position by being attached to and moving with the plunger O.

When the center crank E E is moved to that point which causes the greatest possible opening in the mold, the plunger O and feeder M M are moved in that direction as far as the crank E E can carry them and the recess of the feeder Z is brought immediately over the opening V in the forward end of the square cylinder (or mold in which the plunger O plays), where the clay is urged downward by a roller and spiral spring N into the forward end of the square cylinder. When the clay is thus being deposited, the back plunger P will be moving to meet the clay at its back side by the motion given to it by the head beam I so that the forward end of the plunger P will be about the thickness of a brick back from the back edge of the opening V in the top plate of the square cylinder a little forward of where the clay is to be pressed. When the cranks B B which give motion to the outside pitmen C C are moved to that point which throws the forward end of the pitman to their greatest horizontal distance from the body of the machine the plunger P is in the position last named and the center crank E E will be about 70° in advance of the outside cranks B B and as you turn the cranks in the direction of the arrows the forward plunger O advances gaining upon the back plunger P until their motion becomes equal. At this moment the ends of the plungers O and P are just the thickness of a brick asunder and strongly press the clay into a brick. Then the head beam I leaves the brick end of the plunger P and the feeder M M always having the same motion as the plunger O takes charge of the plunger P by pressing against a stud on the back end of the plunger P and thus keeps the pressing ends of the plungers O and P exactly the same distance asunder. As they move on together still holding the brick between their two opposing ends uitil the brick leaves the back end of the square cylinder and stands in a recess W untouched by anything but the plungers P and O. At this instant the center crank E E is on that point which brings the plunger O to its extreme backward range in the square cylinder and a straight flat bar lies in the recess immediately over the upper edge of the brick it being just as wide as the brick is thick, this bar and its appendages I call the clearer S S and is slid down by the force of the two spiral springs or other force to the lower edge of the plungers P and O at the same time shoving down the brick and cleaning the ends of the two plungers P and O. The brick then falls down on to a band or belt L that is put in slow motion in the direction of the arrows by the pulley G and is borne away to any convenient place.

When the pitman C C returns the clearer

S S is thrown up and out of the way of the returning plunger P by two cams T T on the outside pitmans C C. When the pitmen C C are in nearly their lowest position they return in the direction of the arrow and carry the cams T T under the two ends of the clearer S S and they (the cams T T) being placed in an angular position to the then motion of the pitmen C C wedge up and raise the clearer S S out of the way of the return plunger P so that it can pass under the clearer without touching it at that point. Then those cams T T hold up the clearer S S no longer and its under side rests on the top of the back plunger P during its whole motion backward and forward until another brick is made in the same way. And it is thus that the under surface of the clearer S S is kept clean and polished by the action of the plunger P.

When a brick is about to pass under the clearer S S the lower cams (T′ T′) are returned back by the motion of the pitmen C C and pass under the ends of the clearer S S and raise it a little so that it will not rub against the upper edge of the brick as it passes under S S until the brick is pushed on as far as the machine can carry it in that direction, then the lower cams T′ T′ are slid from under the ends of the clearer S S and the clearer shoves down the brick as before stated so that the upper cams T T and the lower cams (T′ T′) have their distinct use.

The rod projecting from under the hopper with an appendage to turn it by, if turned right handed slackens the feed, if the contrary way increases the feed. This rod is an appendage of the feeder M M. The feeder M M has nearly a square opening through it, from top to bottom, flaring toward the bottom to insure the falling out of the clay into the forward end of the square cylinder. The covers of the openings through the feeder M M are rounded to prevent the clay from adhering to them. The front and back ends of the nearly square opening are convex inward so as to give a larger portion of clay to the ends of the brick than the middle to help to make them full and sound at the corners.

The top plate of the square cylinder at its forward end or edge is concave inward to secure soundness to the corners of the brick also. The double keys J J and K K are to adjust the length of the pitmen C C and D which is very essential to keep the plungers in their proper position when the clearer S S is slid down between their ends particularly the keys K K of D.

It will always be best to commence working the machine with a light feed at first then increasing it until the bricks are sufficiently solid and sound at the corners. If the clay is considerably damp the feed should be increased. If somewhat dry should be slackened.

What I claim as my invention and desire to secure by Letters Patent is—

The clearer S S as used in connection with the two plungers O and P for the purpose of delivering the brick and preventing the plungers O and P from becoming foul at their pressing ends and the clearer itself being kept clean and polished by the action of the plunger P upon its lower surface.

In testimony that the foregoing is a true and clear specification of my said improvement as herein described I have hereunto set my hand and seal this the 30th day of March in the year of our Lord, one thousand eight hundred and fifty.

SHEPHERD WHITMAN. [L. S.]

In the presence of—

A. T. COCHRAN,

JOHN GAULT.