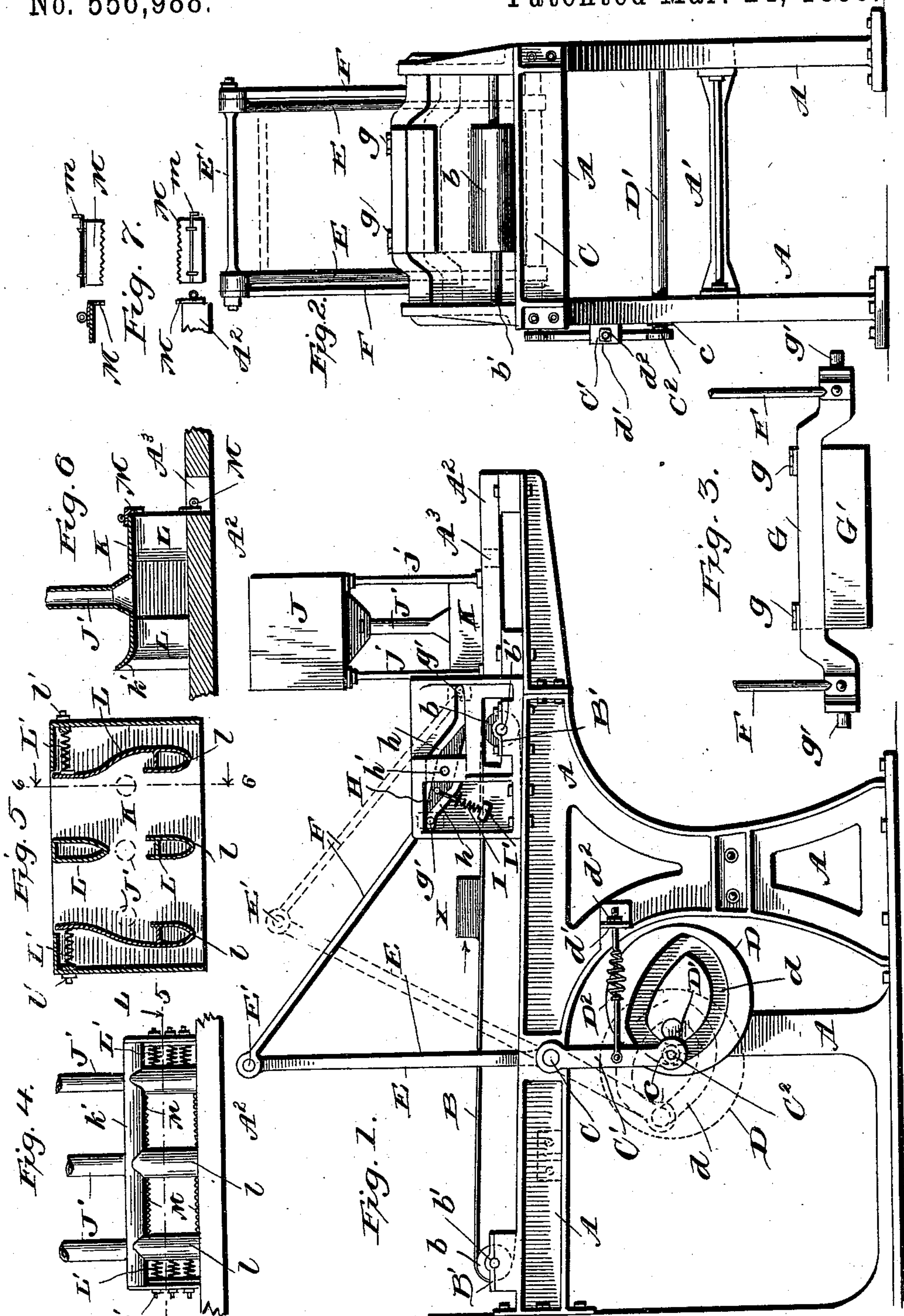


(No Model.)

J. G. KERST.
BRICK ROUGHER AND SANDER.

No. 556,988.

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Witnesses:
L. C. Hills.
E. H. Bond

Inventor:
John G. Kerst

UNITED STATES PATENT OFFICE.

JOHN G. KERST, OF SPRINGFIELD, ILLINOIS.

BRICK ROUGHER AND SANDER.

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To all whom it may concern:

Be it known that I, JOHN G. KERST, of the city of Springfield, county of Sangamon, and State of Illinois, have invented certain new and useful Improvements in a Brick Rougher and Sander; and I do hereby declare the following to be a full, clear, and exact description of the invention, reference being had to the accompanying drawings, which form part of this specification.

This invention relates to certain new and useful improvements in brick-machines, having for its objects, among others, to provide a simple and cheap yet efficient machine which will roughen the mortar sides of bricks, that the same may better hold in use, and also to sand the green brick on its edges or top and bottom to prevent the bricks from sticking together while being burned in the kiln.

Other objects and advantages of the invention will hereinafter appear, and the novel features thereof will be specifically defined by the appended claims.

The invention is clearly illustrated in the accompanying drawings, which, with the letters of reference marked thereon, form a part of this specification, and in which—

Figure 1 is a side elevation of my improved machine. Fig. 2 is an end view looking at the delivery end with the sanding devices removed. Fig. 3 is a detail in end elevation, showing the pusher and the rods connected therewith. Fig. 4 is a detail in end elevation, showing the sanding and roughening mechanism. Fig. 5 is a horizontal section on the line 5 5 of Fig. 4, looking in the direction of the arrows. Fig. 6 is a section on the line 6 6 of Fig. 5, looking in the direction of the arrows. Fig. 7 shows details of the roughening-plates.

Like letters of reference indicate like parts throughout the several views.

Referring now to the details of the drawings by letter, A designates the framework or support of the operating parts.

B is an endless belt or apron mounted to travel upon the rollers *b*, the shafts *b'* of which are mounted to revolve in suitable boxes *B'* on the frame A, as shown in Figs. 1 and 2. This belt or apron is designed to receive the brick X as it comes from the molds or machine

in which it is formed. It is designed to travel in the direction of the arrow in Fig. 1, deriving its motion from any suitable source. (Not shown.)

C is a shaft mounted to oscillate in the frame A and extended transversely thereof, as indicated by dotted lines in Fig. 2. It is extended at one end beyond the frame, as shown, and fast upon this extended portion is an arm *C'* carrying at its lower end, upon a stub-shaft *C²*, a roller *c* designed to travel in the groove *d* of the cam D, which cam is carried by the shaft *D'* suitably mounted in the frame.

D² is a spring, one end of which is connected with the arm *C'* between its ends, the other end being screw-threaded and passed through an opening in the lug or analogous provision *d'* on the frame and provided with a nut *d²*, by means of which the tension of the spring may be regulated as may be required. This spring serves to aid in returning the arm *C'* to its normal position.

A' is a brace-rod for the frame A.

E are rods or levers fast to the shaft C and at their upper ends connected by the cross-shaft *E'*, to which are pivotally connected the upper ends of the push-bars F, which bars or rods are connected at their other ends with the pusher G, to the ends of which the rods or bars are connected in any suitable manner, and to this pusher is hinged, as at *g*, the pusher-plate *G'*, as seen best in Fig. 3. The ends of the pusher are provided with the pins or projections *g'*, as shown best in Fig. 3, which are designed to travel in the cam-paths *h* provided by the substantially diamond-shaped switch-plates H, one on each side of the machine and each pivoted near its center, as at *h'*, (see Fig. 1,) and beneath which plates the said pins are designed to travel in pushing the brick forward, and over which plates the said pins travel in the backward movement of the pusher, as will be hereinafter explained.

I is a spring, one for each switch-plate and each attached at one end to its plate H to the rear of its pivot and its other end held in a lug or bracket *I'*, as seen in Fig. 1, to normally hold the rear end of the said plate in its downward position by its compression.

J is a box designed to contain sand, from

which it is fed or caused to flow through the tubes J', the lower ends of which are flaring, as seen in Fig. 6, to better spread the sand, and this box or hopper may be supported at any desired distance above the platform or table A² in any suitable manner, as by the posts or pillars j, as shown in Fig. 1. These tubes are designed to discharge the sand into the chamber K (shown in horizontal section in Fig. 5,) and which is provided with the partitions therein shown. These partitions L have their front ends rounded, as seen at l, and their other ends are mounted to vibrate and are pressed lightly inward by the springs L' arranged between the same and the walls of the chamber, as seen best in Figs. 4 and 5, being provided with adjusting-nuts l', by which the tension thereof may be regulated and adjusted as occasion may require. The entrance end of the chamber K is enlarged, as seen at k', by having the metal thereof turned upward.

The platform or table A² has an opening A³ adjacent to the discharge end of the chamber K, as shown in Fig. 6 by full lines and by dotted lines in Fig. 1, through which the surplus or waste sand is allowed to fall.

At the discharge end of the chamber K are the plates M, the acting edges of which are serrated, as seen in Fig. 7. These plates are held in operative position at top and bottom of the end of the chamber by the rods m passed through ears on the said plates and corresponding ears on the walls of the chamber. The upper plate is an angle-plate, as shown.

With the parts constructed and arranged substantially as above set forth, the operation is as follows: Motion being given to the various parts in any convenient manner and the brick fed to or placed upon the belt or apron B, which travels in the direction of the arrow in Fig. 1, the levers E and push-rods F are actuated through the medium of the cam and arm C', the pins g' on the pusher entering in the groove or way beneath the switch-plates H, and in the continued movement of the cam the said pins are pushed to the most forward limit of the groove, as indicated by dotted lines in Fig. 1, and as soon as the pins have passed the lower end of the said plates the spring I serves to force up the upper end of the plates and the lower end thereof downward, so that in the continued movement of the cam the pins will travel up the upper face of the said plates, compressing the spring till the pins free themselves from engagement with the plates and drop down again to repeat their travel upon the under side of the plate to push another brick along.

It will be understood that the cam and parts are so timed that the bricks will be carried along by the belt at just the required intervals, so that by the time the pusher returns to its normal position after having pushed one brick into the sand-box the next brick will have moved so as to be in front of the pusher to be in position to be engaged by the

pusher. The first brick acted upon is pushed by the pusher into the chamber K and there left until the next brick is forced against it by the pusher and forced through the chamber between the partitions and through the sand that has dropped thereinto through the tubes connected with the sand-box, and the sand is partially rubbed off by the vibrating partitions, and as the brick emerges from the chamber it is roughened top and bottom by the roughening-plates M. The hinged plate G' of the pusher prevents injury to the brick or pusher should a brick happen to come irregularly along the belt.

Modifications in detail may be resorted to without departing from the spirit of the invention or sacrificing any of its advantages.

What I claim as new is—

1. The combination in a brick-sanding machine, with the sanding devices and the brick-carrying belt and with a pusher having pins and its actuating means, of pivoted plates forming with plates on the side of the machine, a path to be traversed by pins on said pusher, as set forth.

2. The combination in a brick-sanding machine, with the sanding devices and the brick-carrying belt and with a pusher having pins at its ends, of means for actuating said pusher, and pivoted substantially diamond-shaped plates and plates on the side of the machine for determining the path traversed by said pins, substantially as specified.

3. The combination in a brick-sanding machine, with the sanding devices and the brick-carrying belt and with a pusher having pins, of the pivoted plates and plates on the side of the machine determining the path to be traveled by said pins, and a spring acting upon said plates to change the course of said pins, substantially as specified.

4. The combination in a brick-sanding machine, with the sanding devices of the belt, the pusher, the switch-plates, plates on the side of the machine, and the pins on said pusher adapted to travel first upon the lower and then upon the upper face of said plates, and means for reciprocating said pusher, as set forth.

5. In a brick-sanding machine, in combination with the devices for moving the brick, a sanding-chamber provided with vibrating partitions with their front ends rounded and their rear ends spring-pressed, means for supplying sand to said chamber, and serrated plates at the discharge end of said chamber, substantially as and for the purpose specified.

6. The combination in a brick-sanding machine and with the sanding devices and with the belt, the transverse shaft with the levers and the rod or arm with roller, of the cam having a groove in which said roller travels, the pusher-rods pivotally connected with the said levers, the pusher carried by said rods, and the switch-plates and plates on the side of the machine for determining the path traveled by said pusher, substantially as specified.

7. In a brick sanding and roughening machine, the combination of the belt and the sanding devices, the pusher and its pivoted pusher-rods and the cam and connections for
5 actuating the same, the pins on the pusher, and the pivoted diamond-shaped plates and plates on the side of the machine for determining the course traveled by said pins, substantially as specified.

10 8. The combination with the sanding-chamber with its partitions, with their front ends rounded and their rear ends spring-pressed, of the tubes for supplying the sand to the

chamber between the partitions, substantially as specified.

15 9. The combination with the sanding-chamber having partitions, with their front ends rounded and their rear ends spring-pressed and the means for forcing bricks there-through, of the tubes for supplying sand to
20 the chambers through the top of the same, substantially as specified.

JOHN G. KERST.

Witnesses:

EDWARD FURROW,
ELMER L. CAPPE.