

D. & G. Duchemin,

Pug Mill.

N^o 8,565.

Patented Dec. 2, 1851.

Fig. 1.

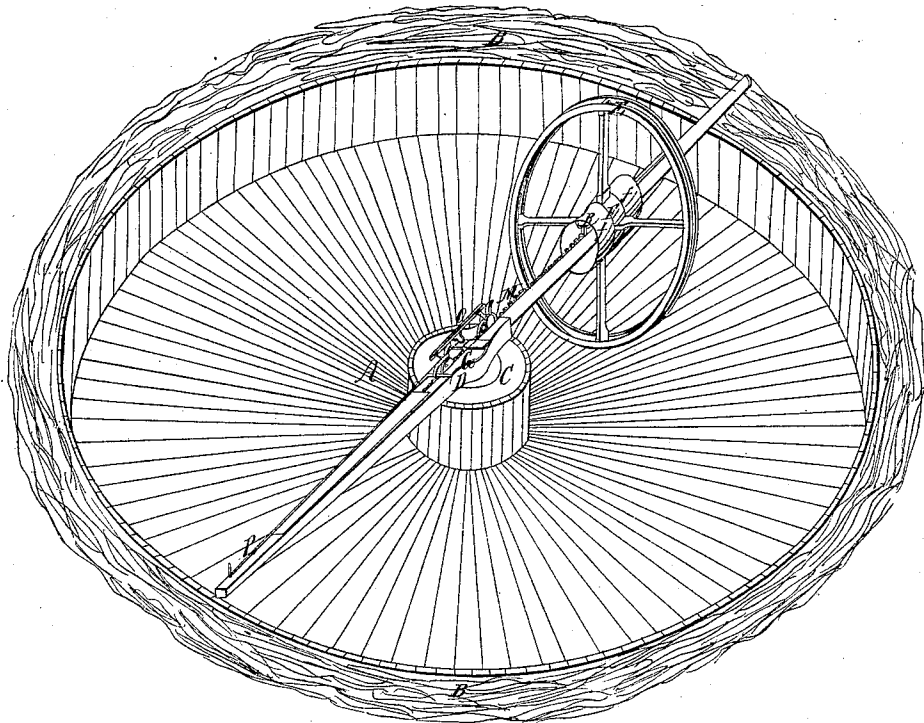


Fig. 2.

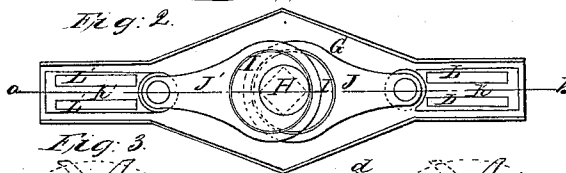


Fig. 3.

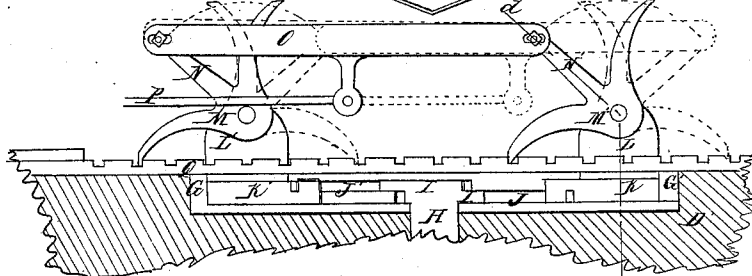


Fig. 4.

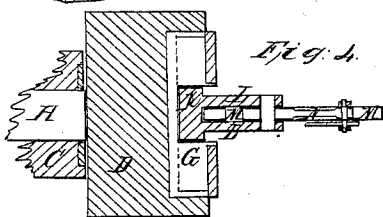
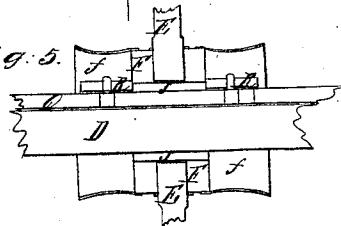


Fig. 5.



UNITED STATES PATENT OFFICE.

DANIEL DUCHEMIN AND GEORGE DUCHEMIN, OF CINCINNATI, OHIO.

MACHINE FOR WORKING CLAY.

Specification of Letters Patent No. 8,565, dated December 2, 1851.

To all whom it may concern:

Be it known that we, DANIEL DUCHEMIN and GEORGE DUCHEMIN, of the city of Cincinnati, in the county of Hamilton and State of Ohio, have invented a new and useful Improvement on a Machine for Tempering Clay for Making Brick and other Purposes; and we do hereby declare that the following is a full, clear, and exact description of our said improvement, both of its construction and operation, reference being had to the annexed drawings, making part of this specification, in which the same letters refer to the same things in the several figures.

Figure 1, an isometrical perspective view of our machine in a pit ready for operation. Fig. 2, a plan of the box or case in which the working gear is situated, with the lid or cap removed and also all the upper works, that the cams may be more plainly seen. Fig. 3, is a longitudinal elevation of the working parts being a cut section through the line *a b* Fig. 2. Fig. 4 is a lateral elevation of the same parts being a cut section through the line *c, d*, Fig. 3; Fig. 5, a vertical section through the center of the wheel E, showing the antifriction rollers R R attached to the rack A and in contact with the iron hub box *s s*.

A, the pit; B, the road or track upon which the horses travel; C, the center post into which the pin H is inserted (this may be cased with boards as shown or the clay may be allowed to form a casing around the post,) D, the beam or lever to which the horses are attached, and upon which the wheel E, F, revolves and into which the box Fig. 2, and the rack Q are inserted; G a cast iron box or case let into the beam D, and containing the cams and other working parts of the machine; E a wheel commonly made of two pieces of iron $1\frac{1}{2}$ by $\frac{1}{2}$ in. bent edgewise so as to form a circle of about six feet diameter and secured to the four (or any other number of) arms inserted into the hub F, (usually about ten inches long and 16 inches in diameter and bushed with iron); *f, f*, two projecting bands or hoops, commonly of sheet iron the same or a greater diameter than the hub and projecting from ten to twelve inches, their use is to keep the mud or clay which falls from the wheel in its revolutions from contact with the beam D, the rack Q and the two antifriction rollers (one only of which is shown at R Fig. 1,) R R; G, the box or case for the

working parts of the machinery; H, a strong cast iron pin having some 6 inches of its lower end square and fitted to a plate in the upper end of the post C; this arrangement is to prevent H from revolving with the beam D, &c.; I, I, two similar cams or eccentrics cast with, and forming a part of H having their points placed opposite each other as shown; J, J', two pitmen used to connect the sliding stands L, L' with the cams I, I; K K' two similar sliding stands that are moved back and forth by the cams I, I, and carry with them the pawls M M'; N, N', two arms attached to the pawls M, M' and carrying the slotted shackle-bar O to the pendant arm of which the shifting rod P is attached, the use of N, N', O and P being to change the position of the pawls M, M', and throw them out of gear entirely or over in the position shown by the dotted lines Fig. 3; Q, a rack or notched rod running through openings in the box G, and between the jaws of the stands L, L', and a groove in the upper side of the beam D, and having two antifriction rollers (one of which is seen at R) attached to it so that they act upon the two ends of the hub F to keep it in any required position, or move it (and of course the wheel E) out or in upon the beam or sweep D. The scale for Fig. 1, is one eighth of an inch to the foot, and for Figs. 2, 3 and 4 one fourth of an inch to the foot; we usually make the pit about 20 ft. in diameter.

Operation: The operation of our machine is as follows: The pit A being filled with clay and properly moistened, horse or other power is attached to the sweep or beam D and in moving round causes the wheel E to revolve thus mixing or tempering the clay by cutting down through it and stirring it in various ways. This wheel will move around in one circle but the pin H being square prevents the cams II from revolving, while the box G and all it contains revolves and causes the pitmen J, J', to approach each other and recede again during every revolution of the sweep through a space due to the eccentricity of the cams I, I, and in doing this, the sliding stands R, R', L L' and the pawls M, M', have a similar amount of motion communicated to them. Thus while one pawl, say M', is moving toward the center (in the position shown in Fig. 3) it will carry the rack Q in that direction while the pawl M is also drawn to-

ward the center until it falls into the next tooth at a point where the cams will be in the opposite position relatively, from that shown in Fig. 2. The pawls will then re-
 5 cede from the center and M, will in turn carry the rack on in the same direction, while M' will be carried from the center in like manner until it falls into the next tooth and the other point of the eccentrics are at-
 10 tained when the first operation will be repeated, and so on. The anti-friction rollers R R being attached to the head of the rack (as above described) and acting on the two ends of the hub F, will force the wheel in
 15 toward the center of the pit while the pawls are in the position shown in the drawings, and out from it if their position be reversed by means of the rod P and the shackle bar
 20 O as shown by the dotted lines in Fig. 3, or if they be held at any point (by the same means) that shall keep the pawls from contact with the rack, the wheel will move in one track around the center, but while the
 25 pawls are in contact with the rack its track will describe a scroll. The teeth in the rack are so arranged that when the wheel has reached the center or circumference it cannot move any farther in that direction and will continue to track in a circle until the
 30 pawls are shifted. This can be done by the attendant taking hold of the handle of P at any time without stopping the work, and by means of a notch in the rod P the pawls

are rendered inactive at any point and the wheel thus made to travel in any part of the
 35 pit where the clay may be raw or untempered. It is plain that this machinery may be used in any number of similar pits; we usually have three pits for every gang of
 40 hands.

What we claim as our invention is—

1. The fixed double eccentric cams I, I, in combination with the pitmen J, J', attached to the slides K, K', and by means of
 45 L, L', giving motion to the pawls M, M', and through them to the rack Q and the wheel E, for the purposes herein set forth and described.

2. We claim the particular arrangement and combination of machinery set forth and
 50 described in Figs. 2, 3 and 4 in combination with the tempering wheel E, Fig. 1, especially the double eccentric I I, and the pitmen or connecting rods J and J' the slides K and K', with the pawls M M' the
 55 connecting bar O the shifting rod P and the rack Q as applied to tempering clay for making brick or any other purpose, or any equivalent device or arrangement of ma-
 60 chinery for accomplishing the same purpose substantially in the same manner.

DANIEL DUCHEMIN.
 GEORGE DUCHEMIN.

Witnesses:

MARK P. TAYLOR,
 R. C. PHILLIPS.