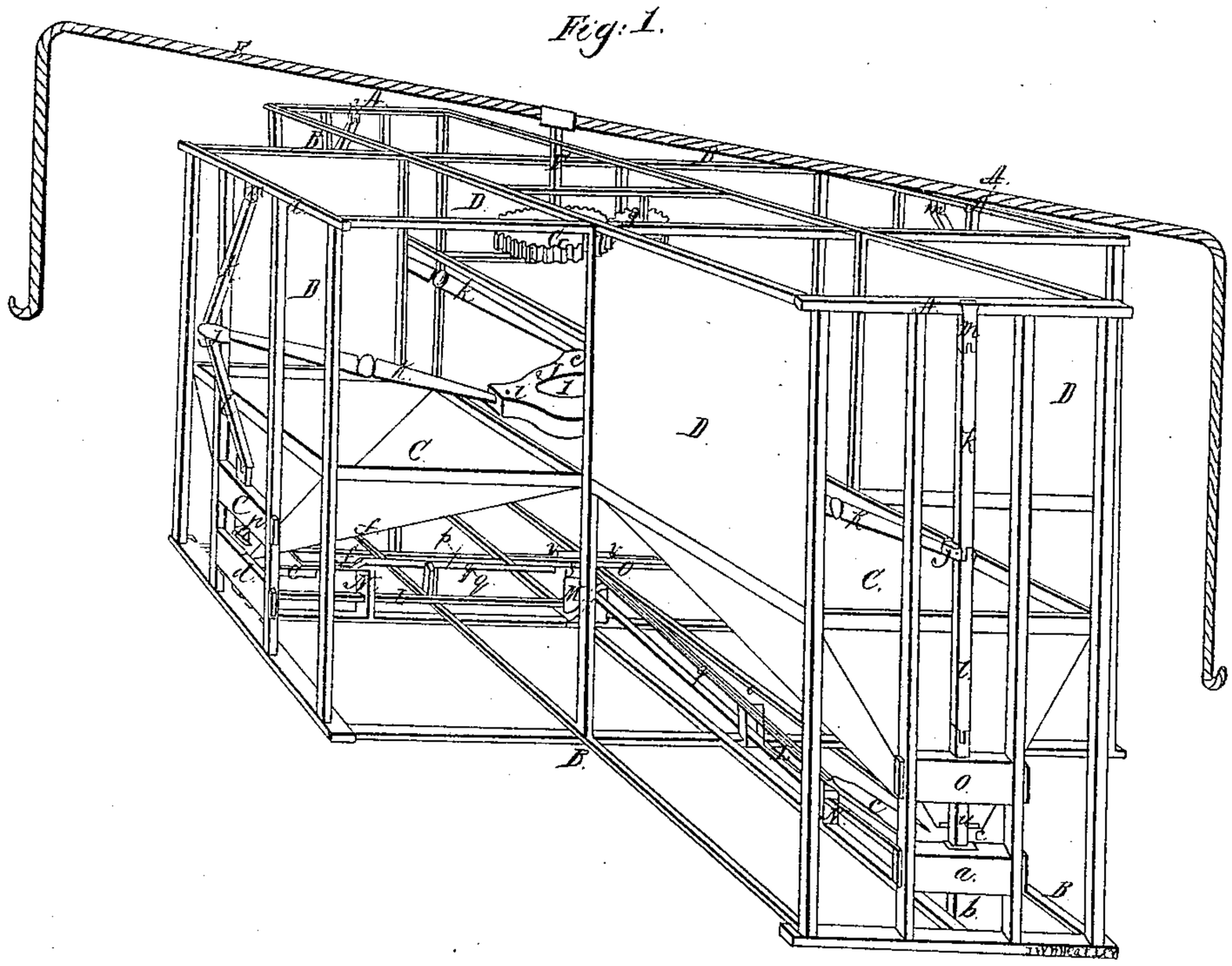
2 Sheets—Sheet 1.

# W. S. Wallace,

## Brick Machine.

No. 29,834. Patented Aug. 28, 1860.

Fig: 1.




Inventor:
Wm. S. Wallace
By Attorney J. B. Woodruff.

2 Sheets—Sheet 2.

# W. S. Wallace,

# Brick Machine.

No. 29,834. Patented Aug. 28, 1860.

Fig: 4.

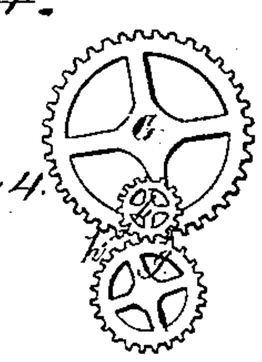


Fig: 2.

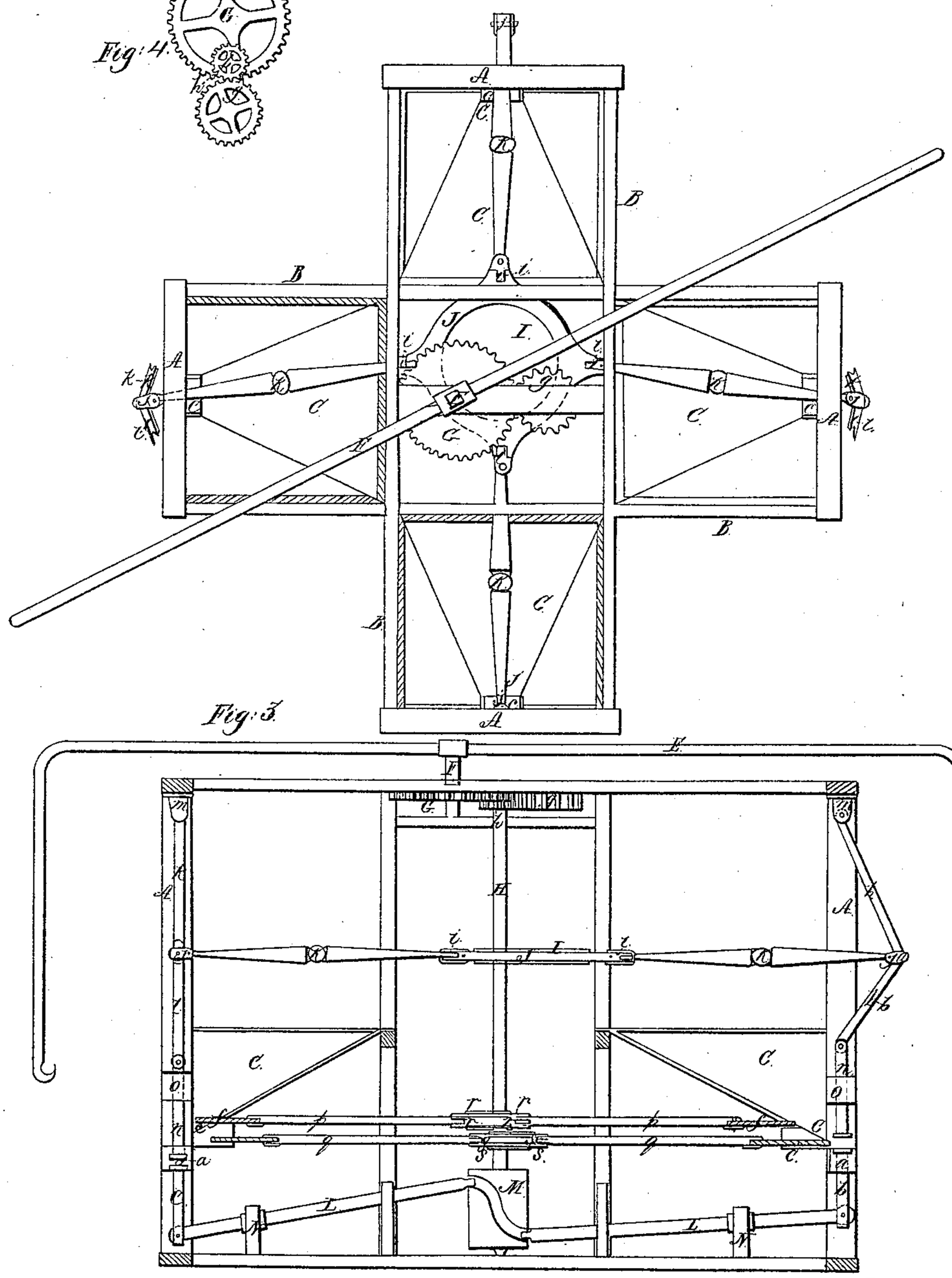


Fig: 3.

Inventor:
Wm S. Wallace
By Attorney J. B. Woodruff

# UNITED STATES PATENT OFFICE.

WILLIAM S. WALLACE, OF AMERICUS, GEORGIA.

## BRICK-MACHINE.

Specification of Letters Patent No. 29,834, dated August 28, 1860.

*To all whom it may concern:*

Be it known that I, WILLIAM S. WALLACE, of Americus, in the county of Sumpter, in the State of Georgia, have invented new and useful Improvements in Dry-Pressed-Brick Machinery; and the following is a clear and exact description of the same, reference being had to the accompanying drawings, making a part of this specification, in which—

Figure 1, represents a view of the machine in perspective. Fig. 2, is a plan, or top view. Fig. 3, shows a side elevation, cut through the center, it forming a half section of the machine. Fig. 4 is the arrangement of the gear-wheels turned over, or bottom side up.

The letters indicate the same part in the several figures.

My invention relates to making brick of pulverized dry clay, and consists in the mechanical construction of the frame, the arrangement for screening the clay, delivering it into the molds, compressing it into form, and discharging the brick, the same being quadrupled, so that the machinery for four or more molds, is all operated by one set of cams, and eccentrics, on a shaft in the center, the power for pressing being brought to bear only upon one mold at a time, thereby performing four times the amount of work, and producing four times the quantity of brick in a given time, without requiring much, if any more power, than it would to operate a single mold.

To enable others skilled in the art, to make and use my machine, I will proceed to describe it in detail, referring to the drawings, and the letters marked thereon.

I construct the frame work, for my quadruple machine, as seen in (Figs. 1, and 2,) of timber of suitable dimensions, put together in a substantial manner, in the form of a cross, (A, A, A, A,) one principal object of this peculiar form is, to give four face sides, in which to place the molds, and pressing mechanism, so as to deliver the brick in front of each, while the corners (B, B, B, B,) being left to form recesses within the square of the frame, leave sufficient room to pulverize the clay, and shovel it into the hoppers (C, C, C, C,) by the finer particles passing through the screens (D, D, D, D,) while the coarser portions fall outside to be pulverized. Another advantage of making the frame in this form is, that it gives ample room for the arrangement, and action of the machinery, while it stands more firm, occupies less space, takes less timber, and is built cheaper, than it can be to answer the same purpose, in any other form.

My machine is designed to be worked by horses, or mules, hitched to both ends of a long lever, or sweep (E) which is balanced upon, and secured to the shaft (F,) on the top, near the center. My machine may be worked equally well by steam, or any other stationary power.

On the shaft (F,) is a driving cogwheel (G,) which meshes into a counter cogwheel (*g*,) of less size that drives a pinion (*h*) under the cogwheel the pinion being of such proportion as to make four revolutions to one of the sweep (E,) and in the same direction. The pinion (*h*) is fastened to the top of a vertical shaft (H,) to which cams and eccentrics are attached, and made to operate the four sets of machinery, alternately, for receiving, pressing, and delivering the brick, the action and mechanism of which will be hereafter more fully described.

On the shaft (H,) is a large eccentric wheel (I,) on the rim (J,) which extends around the eccentric are four compound joints (*i i i i*) at four equidistant points, to which are attached the connecting rods (K, K, K, K,) the outer ends of each being pivoted to the elbow joints (*j*, *j*, *j*, *j*,) of the levers (*k*, *k*, and *l*, *l*,) the top end being hung in the socket (*m*, *m*,) and the lower end being pivoted to the plungers (*n*, *n*,) which are made to slide in a guide (*o*, *o*) so as to place the foot of the plunger accurately in the molds (*a*, *a*,).

Underneath the molds (*a*, *a*,) and fitted to slide up and down, in them, are reversed plungers (*b*, *b*,) they forming the bottom of the molds, when the brick is being pressed, and are elevated by the levers (L, L,) so as to bring the under-side of the brick out of the mold to a level with the top surface when it is discharged by a horizontal slide (*e*, *e*). Above the slides that shove the brick forward, is another similar slide (*f*, *f*,) which forms the cut off, and closing lid to the discharging apertures (*c c*) in the hopper (C, C, C, C,) the slides both being operated in a similar manner by horizontal connecting rods, (*p*, *p*, and *q*, *q*,) working on the cams (*r*, *r*, and *s s*) on the vertical center shaft (H,) the levers (L, L,) are operated by a spiral cam (M,) on the foot of the main upright shaft

(H,) the levers (L, L,) are hung on standards, (N, N,) about one third of the distance from the end where it is pivoted to the lifting plunger (*b*, *b*,) so that it discharges the brick very easily. Thus each section, of molding, pressing, and delivering, mechanism, is worked alternately by the same; or a single set of cams, and as much power is only required, when in the act of pressing, and finishing the brick, the other functions of filling the molds, and discharging the brick being variously performed on the different opposite sides, only serves to brace and steady the mechanism, while the power required, to work the four molds, is very little, if any more, than would be necessary to operate a single one, thereby producing about four times the quantity of finished brick in a given time.

Thus it is demonstrated, that by my form, and construction of a frame, and the arrangement of the lever by which the horses, or mules, may travel slowly, and describe a large circle, thereby making the labor light, while the speed is multiplied by the peculiar arrangement of the gear wheels, and the single set of cams, and eccentrics in the center to operate the whole, the construction of the receiving and discharging mechanism, together with the arrangement of the molds and other fixtures, for making dry pressed brick there is much economy of time and power saved.

I do not claim the devices separately, as they have been used in various combinations, and arrangements in brick machines; but

What I do claim and desire to secure by Letters Patent, is—

The arrangement of the pressing mechanism consisting of the cams, and eccentrics, upon the central vertical shaft (H,) with the levers, slides, and plungers in relation to each other, the hoppers, screens, and frame, and operating in the manner, and for the purposes described.

WM. S. WALLACE.

Witnesses:
S. A. Willet,
Louis Bruner.