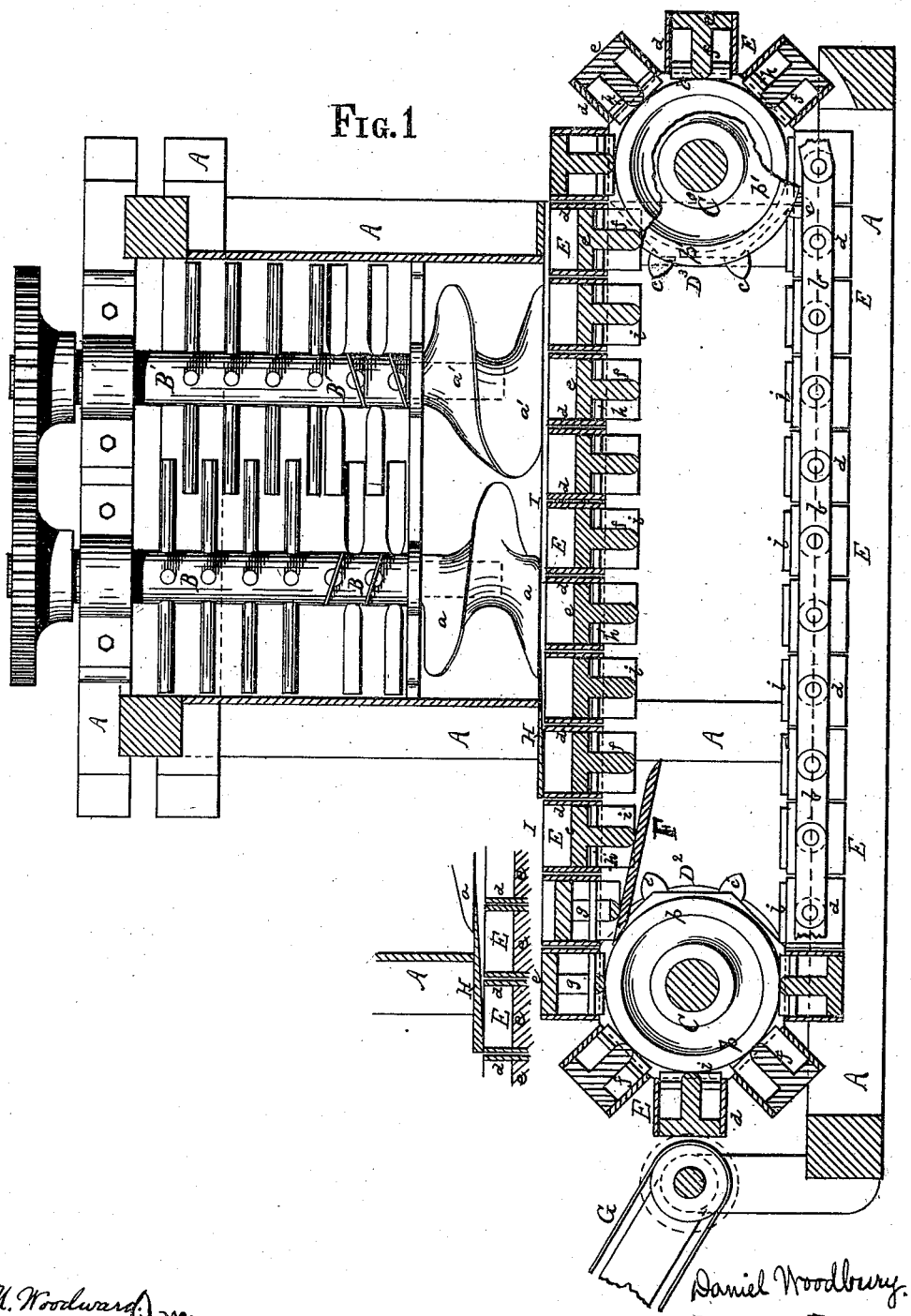
3 Sheets—Sheet 1.

D. WOODBURY.

BRICK AND PEAT MACHINE.

No. 185,057. Patented Dec. 5, 1876.

FIG. 1



C. H. Woodward
John T. Halsted
} Witnesses.

Daniel Woodbury.
Inventor. By
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Attys.

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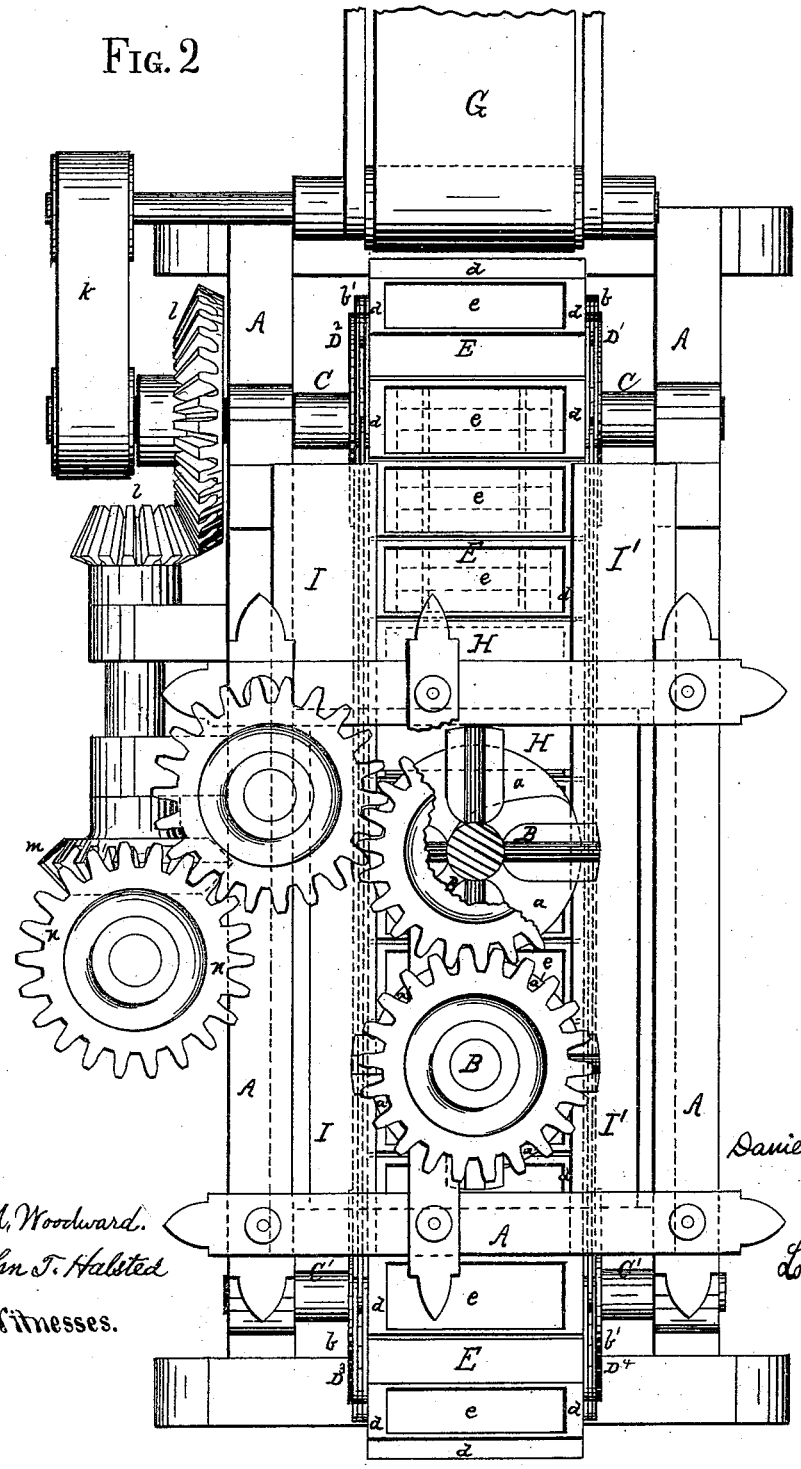
D. WOODBURY.

BRICK AND PEAT MACHINE.

No. 185,057. Patented Dec. 5, 1876.

FIG. 2



Witnesses.

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D. WOODBURY.

BRICK AND PEAT MACHINE.

No. 185,057. Patented Dec. 5, 1876.

FIG. 3.

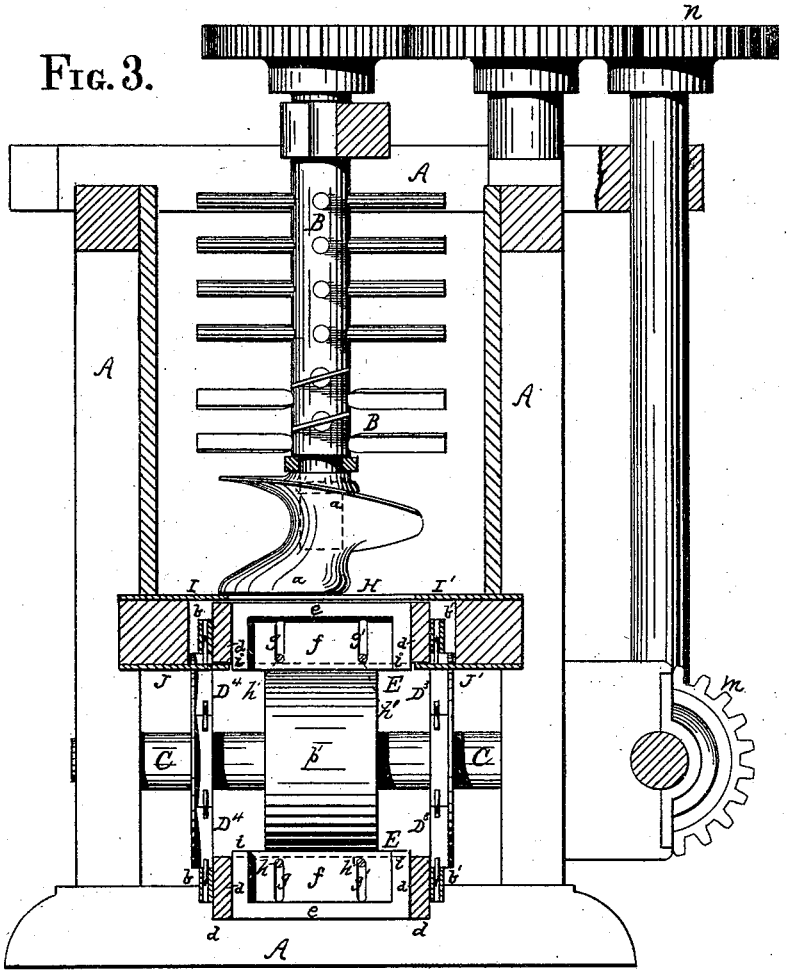
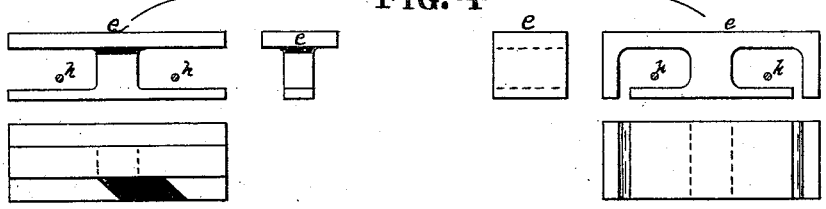


FIG. 4



C. M. Woodward
John T. Halsted } Witnesses.

Daniel Woodbury,
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UNITED STATES PATENT OFFICE.

DANIEL WOODBURY, OF MINNEAPOLIS, MINNESOTA.

IMPROVEMENT IN BRICK AND PEAT MACHINES.

Specification forming part of Letters Patent No. **185,057**, dated December 5, 1876; application filed July 18, 1876.

To all whom it may concern:

Be it known that I, DANIEL WOODBURY, of Minneapolis, in the county of Hennepin, and State of Minnesota, have invented certain new and useful Improvements in Brick and Peat Machines, of which the following is a specification:

This invention relates to machines for making bricks, peat, &c., and consists in a series of molds connected together in the form of a belt, by chains, &c., and running over suitable drums, and passing beneath a grinding apparatus, by which the molds are filled with clay, and thence to a conveyer, or belt, upon which they are delivered automatically, as hereinafter set forth.

This invention also consists in the method of forming the molds in which the bricks are made, as hereinafter described.

The invention further consists in an inclined "way," or table, which, acting on a plunger in the mold, forces it upward at the proper point, and thus delivers the bricks from the molds, as hereinafter specified.

The invention further consists in an endless adjustable conveyer, or belt, upon which the bricks are delivered; and from whence they are taken to the burning "kilns", as hereinafter set forth.

In the drawings, Figure 1 is a sectional side and elevation. Fig. 2 is a plan view. Fig. 3 is a sectional end elevation. Fig. 4 detail views of the molds, showing variations in their form.

A is the frame, in which are arranged a number of grinders, B B′, made in the usual manner, and having screw-shaped feet *a a′*, as shown. C C are two shafts running in suitable bearings, one at either end of the frame A, and carrying four chain-pulleys, D^1 D^2 D^3 D^4, upon which two endless chains, *b b′*, run. The outer peripheries of these pulleys are made eight-sided, and provided with spurs *c c′*, which pass between the links of the chains, and thus operate them in the usual manner. Between these chains, and pivoted to them, are a series of molds, E, consisting of hollow metal frames or cases *d*, open at top and bottom, and provided with plungers or slides, as shown. These plungers consist of flat plates *e*, which fit the openings in the frames *d*, and form the bottoms of the molds. *f* are lugs or plates, which project downward from the center of the lower side of the plate *e*, and are provided with slots *g g′*, through which pins *h h′*, whose ends are secured in the sides of the case *d*, pass, and thus regulate the throw of the plunger, preventing it from being forced beyond a certain limit upward, and from dropping out downward. *i i′* are guides, which are attached to the ends of the plates *e e* to prevent them from tilting or having an irregular movement, as the guides completely fill the depth of the frame *d*, and thus present a long surface to the sides to be acted upon.

F is an inclined table or plate, placed above the forward shaft C, and over which the belt of molds run; and is so set that its forward end will just allow the molds to pass over it when the plungers are raised, while its lower end is a short distance below the lowest points of the lugs *f*, thus forming an inclined plane, which will gradually force the plungers upward as they pass over it, and thus deliver the bricks from the molds. G is an endless conveyer, or belt, operated by a belt and gearing, *k l m n*, upon which the bricks are delivered from the molds, and from which they are taken to the burning-kilns. H is a knife or cutter, set above the belt of molds just where they leave the grinders B B′, and after they have been filled by the screws *a a′*. This knife is made with its front or cutting edge beveled and set a short distance above the tops of the molds, while its rear edge is placed down close to the tops of the molds, so that its lower lower surface has an inclined form, as more clearly shown in the enlarged detached view in Fig. 1. By this means the superfluous clay is cut off a short distance above the molds, and then this projecting portion is forced down into the molds by the inclined lower surface of the knife, thus making the bricks that much denser and harder, while at the same time it imparts a polish or burnishing to the upper surface. I I are two thin strips of metal, preferably of steel, placed above the molds and projecting a short distance over their ends, but not enough to cover any portion of the openings, to prevent the possibility of the clay coming in contact with

the chains *b b'* and clogging or choking them. J J are two similar strips, placed beneath the molds in a like manner to act as supports or ways to the lower sides of the molds, to prevent them from being forced downward or sagging from the action of the screws *a a'* in filling them.

The operation of the machine is as follows: The clay from which the bricks are to be made being placed in the grinders, and the machine set in motion, is pulverized by them and forced downward until it is caught by the screw-shaped feet *a a'*, and is by them pressed down into the molds E as they pass beneath them, completely filling every mold. The molds continuing to move forward, then pass beneath the inclined knife H, which cuts off the superfluous clay, as before explained, and burnishes the tops of the bricks, and the molds pass from beneath the knife with a perfectly-formed brick in each.

When the lugs *f* strike the inclines F, the plungers *e* will be gradually forced upward, carrying the bricks with them until the top of the plate *e* is flush with the upper surface of the frame *d*, the pins *h* preventing them from going beyond that point, when the brick will be turned over and dropped upon the conveyer G, from which they will be taken by hand or otherwise to the burning-kilns.

By this simple means the bricks can be made from clay taken directly from the bank, without any more water than is naturally found therein, thus doing away with the necessity of extra water or manipulation. It also produces a much more perfect and uniform brick than can be made by hand, as every brick receives exactly the same quantity of clay, and is subjected to exactly the same pressure.

I claim a special advantage in the arrangement of the molds into the form of an endless belt or chain, as I obtain a uniform and continuous production of bricks by a very simple device. It also enables me to make the machine in a much simpler manner, and to occupy much less room than if each mold was made to act independently. By simply altering the form and size of the molds this same apparatus may be used in pressing peat into convenient-shaped bricks for use.

Wheels *p p'* may be attached to the shafts C C', between the chain-pulleys D, to hold the plungers outward after they leave the incline F on the forward end, so that the bricks may be delivered upon the conveyer G without trouble, while the wheel *p'* on the rear shaft will perform the same office for the rear end of the chain of molds, preventing the plungers from dropping down before the molds pass beneath the grinders. Tightening-screws will be attached to the frame A to take up the slack of the chains and keep them taut. The screws *a a'* will be made removable by means of pins or set-screws, so that broken or worn-out ones may be readily replaced.

Fig. 4 shows two variations of the many forms in which the plungers may be made.

I claim—

1. The mold E, consisting of the case or frame *d*, plate *e*, lug *f*, end guides *i*, slots *g g'*, and pins *h h'*, all arranged and operating as hereinbefore specified.

2. The mold E, consisting of the case or frame *d*, plate *e*, lug *f*, end guides *i*, slots *g g'*, and pins *h h'*, in combination with the inclined plate F, for delivering the bricks from the molds, arranged and operating as hereinbefore specified.

3. The combination and arrangement of the conveyer G, belt and gearing *k l m n*, and the molds E, having the plungers *e f g h*, for conveying the bricks from the machine, all arranged and operating as hereinbefore set forth.

4. The combination and arrangement of the molds E *d e f g h i*, inclined blade or cutter H, chains *b b'*, ways or suppports J J, and shafts and pulleys C C' D^1 D^2 D^3 D^4, arranged and operating substantially as hereinbefore specified.

In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

DANIEL WOODBURY.

Witnesses:
C. N. WOODWARD,
VERNON BELL.