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C. H. WILLIAMS.

Peat-Machine.

No. 167,596. Patented Sept. 7, 1875.

Fig 1

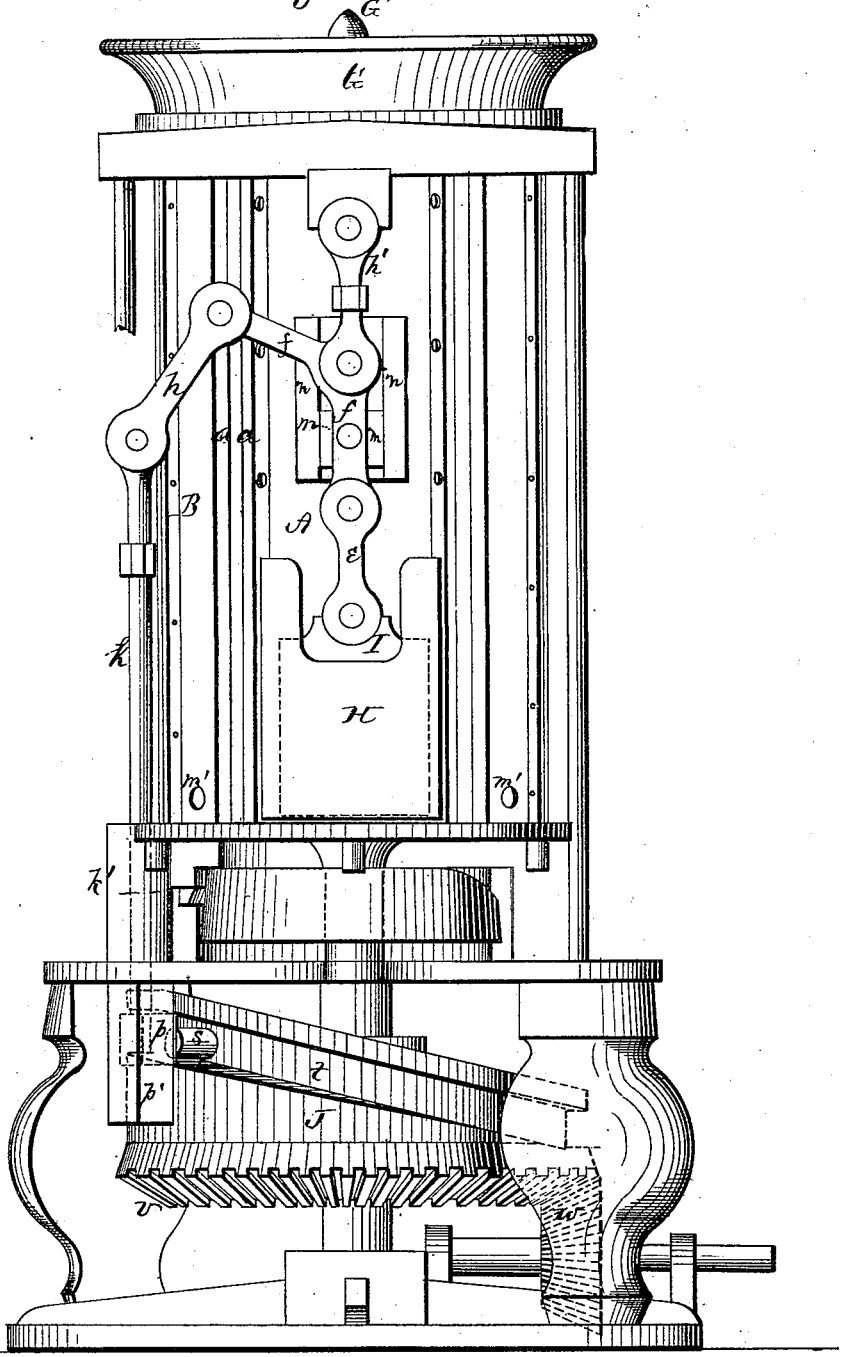

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Fig 2

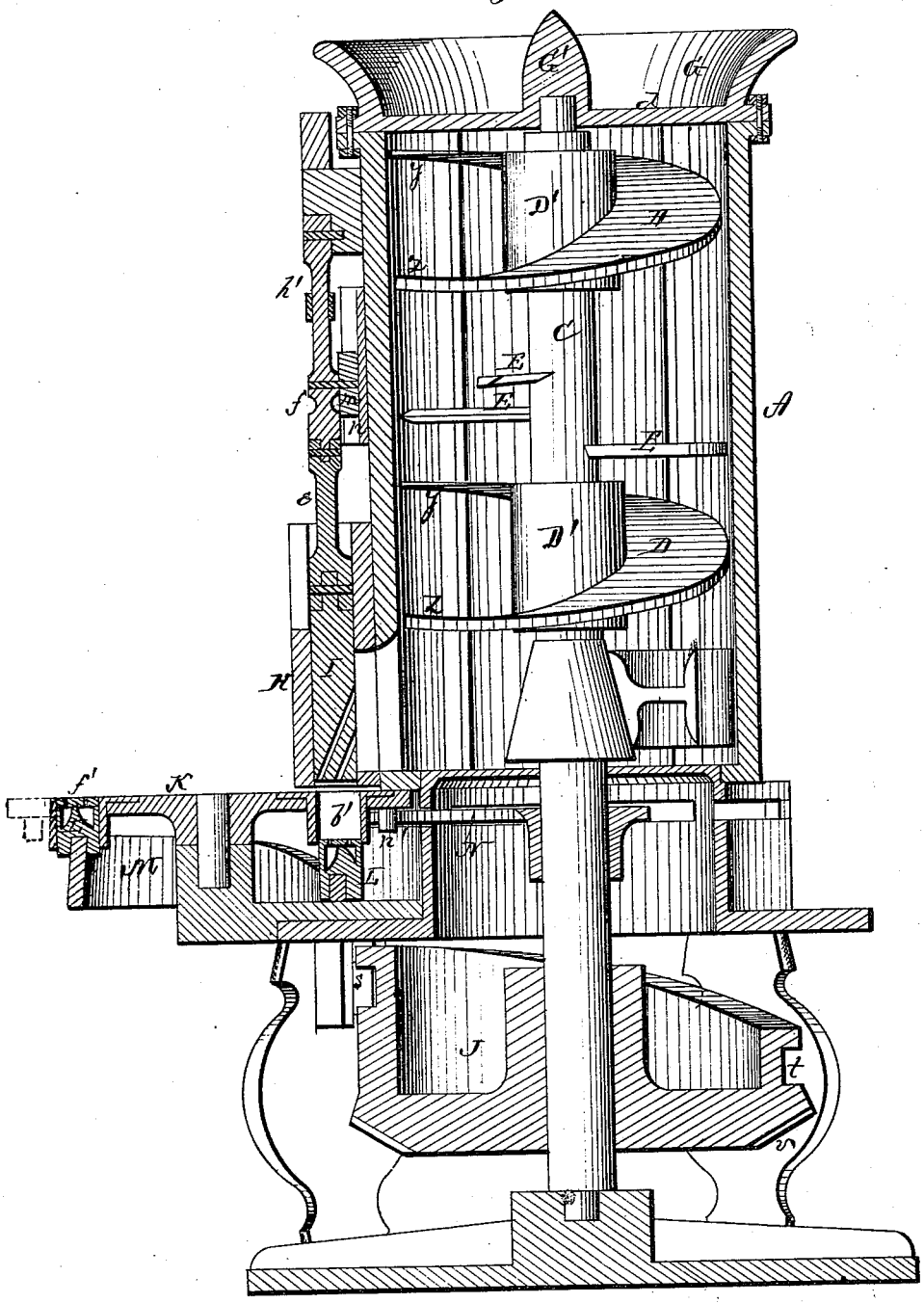

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Fig 4

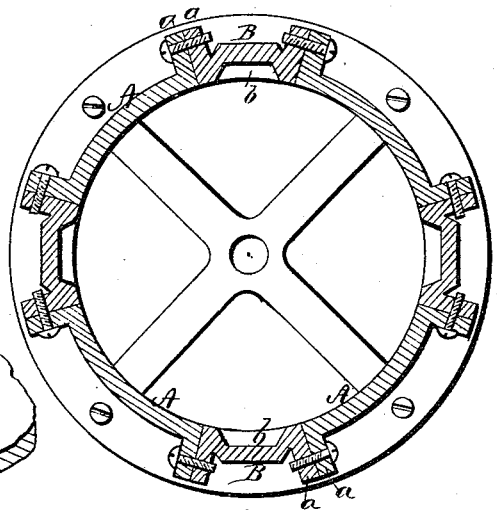


Fig 3

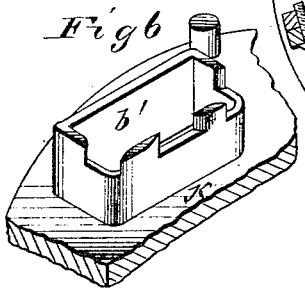


Fig 6

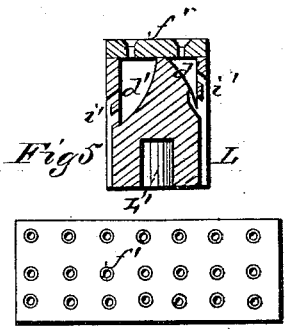
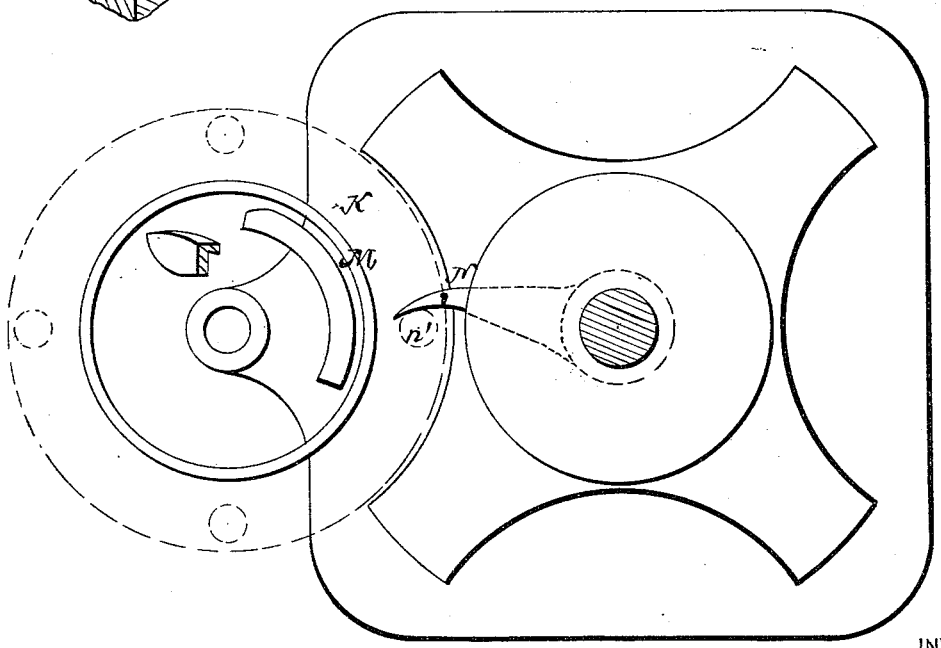


Fig 5



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UNITED STATES PATENT OFFICE.

CARMI H. WILLIAMS, OF ST. PAUL, MINNESOTA, ASSIGNOR OF TWO-THIRDS HIS RIGHT TO CHARLES D. WILLIAMS AND CHARLES N. PARKER, JR., OF SAME PLACE.

IMPROVEMENT IN PEAT-MACHINES.

Specification forming part of Letters Patent No. **167,596**, dated September 7, 1875; application filed February 15, 1875.

To all whom it may concern:

Be it known that I, CARMI H. WILLIAMS, now of St. Paul, in the county of Ramsey and in the State of Minnesota, has invented certain new and useful Improvements in Peat-Machines; and do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings and to the letters of reference marked thereon, making a part of this specification.

My present invention relates to an improvement upon the device as patented to me, No. 150,924, for a brick-machine, dated May 12, 1874; and the nature of my invention consists in the construction and arrangement of a machine for pressing or forming peat into blocks for fuel, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawings, in which—

Figure 1 is a side elevation of my machine. Fig. 2 is a longitudinal vertical section of the same. Fig. 3 is a horizontal section through the line *x x*, Fig. 1. Fig. 4 is a horizontal section of the cylinder through the line *y y*, Fig. 1. Fig. 5 shows the construction of the follower in the mold-wheel. Fig. 6 is a bottom perspective view of one of the molds in the mold-wheel.

The receiver or cylinder into which the peat is placed, to be afterward pressed into blocks of suitable shape for fuel, is made of cylindrical form, of a series of vertical staves or sections, A B, placed alternately, as shown. The sections A A are made simply in the form of staves or segments of the cylinder, and are provided at both sides with outward-projecting flanges *a a*. The sections B B are at both sides provided with similar flanges, and on the inner side each of these sections has a vertical recess, *b*, extending from top to bottom of the section. The sections A and B are placed alternately, and united together by means of bolts through the flanges *a a*, as fully shown in Fig. 4. The recesses *b*, formed on the interior of the cylinder, are for the purpose of receiving and retaining stones or other hard substances which are in the peat, and, as the interior devices within the cylinder are revolved, such stones or hard substances are forced into the nearest recess, no matter at what point such hard substance is encountered.

In my former patent for a brick-machine, as above referred to, the cylinder was not made in sections, hence it was found difficult to remove the stones after they had been forced into the vertical recesses in the cylinder; but in this present invention any one section of the cylinder can be readily removed, and the stones extracted without disturbing any of the adjoining sections.

Within the cylinder or receiver A B is a vertical shaft, C, upon which are secured knives E E and wings D D. The wings D are made in spiral form, and set in sections on the shaft with suitable spaces between them, and on a deep incline, so as to press the peat rapidly downward. Each of the wings D are formed upon a hub or collar, D′, and these hubs are suitably connected to the shaft, so that one wing can be removed independently of the others on said shaft. The wings each are formed on a circle—that is to say, the top or beginning edge *y* of each is directly over the bottom or ending edge *z* of the same; hence the peat is caused to travel entirely around until it comes between the points *y* and *z*, and then passes through the throat and below. The top of the cylinder A B is formed of a flaring rim, G, cast with two diametrical bars, *d d*, crossing each other in the center, and with a hollow cap or dome, G′, projecting upward from the center. This dome forms the support or bearing for the upper end of the central shaft C, and the rim G forms a funnel or hopper for the admission of the peat into the cylinder. At the lower end of the cylinder A B, on the side, is formed a box, H, in which the plunger I works. The upper end of this plunger is, by a rod, *e*, connected with an L-shaped lever, *f*, at one end thereof. The other end of this lever is, by links *h*, connected with a rod, *k*, which passes vertically through a guide-tube, *k′*, and is operated up and down by

means hereinafter described. The lever *f* is, by a link, *h'*, suspended from a projection at the upper end of the cylinder, said link being pivoted to the lever at the angle thereof. The lever *f* is pivoted to a dovetailed slide, *m*, which moves up and down in guides *n n*, attached to, or formed on, the side of the cylinder A.

By these means the plunger I is moved up and down at proper intervals—up, to give room for the peat to enter the box H, and down, to force and press it into the mold.

I prefer to make the links *h* and *h'* in two pieces, united by right and left hand nuts, to lengthen and shorten them as required, to adjust the length of the stroke of the plunger.

On the lower end of the rod *k* is formed a square slide, *p*, moving in a guide-box, *p'*, and provided with a pin, *s*, on its inner side. The pin *s* projects into a cam-groove, *t*, made in the circumference of a wheel, J, fastened to the lower end of the central shaft C, and provided on its under side with beveled cogs *v*, to gear with a bevel-pinion, *w*, on the main or driving shaft. K is the revolving mold-wheel, provided with mortises for the insertion of the flanged molds *b'*, which may be of any desired size and shape to form the peat into blocks for fuel. L represents a follower, moving on a cam-shaped ring, M, up and down in the molds, the under side of each follower being provided with a curved groove to ride on said cam-shaped ring. The upper side of the follower is formed with two chambers, *d' d'*, covered by means of perforated plate *f'*, as shown in Fig. 5. From the bottoms of the chambers *d'* passages *i'* lead outward to the sides of the follower.

Peat contains a great quantity of water, and it is therefore necessary to provide sufficient outlets for the same. To this end the cylinder A B is, at or near its lower end, provided with perforations *m'*, as shown. The plunger and molds are also perforated, as well as the follower, as described.

The various parts of the machine are made strong and durable, and in such proportions that the plunger will have a large stroke, as the peat will have to be compressed to about one-fourth its original bulk.

The mold-wheel is operated by means of an arm, N, extending from the shaft C, and striking pins *n'* on the under side of the wheel.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The receiving-cylinder herein described, consisting of the alternate sections A and B, provided with side flanges *a a*, and the sections B, having interior vertical recesses *b*, substantially as and for the purposes herein set forth.

2. The combination, with the stationary cam-wheel M, of the rotating mold-table K, and the detachable follower L, each provided with under slots L', side recesses *d' d'*, passages *i' i'*, and perforated top *f*, all constructed and operating substantially as set forth.

In testimony that I claim the foregoing I have hereunto set my hand and seal this 6th day of October, 1874.

CARMI H. WILLIAMS. [L. S.]

Witnesses:

HENRY CHARLES VOIGT,

GEORGE A. KIRKPATRICK.