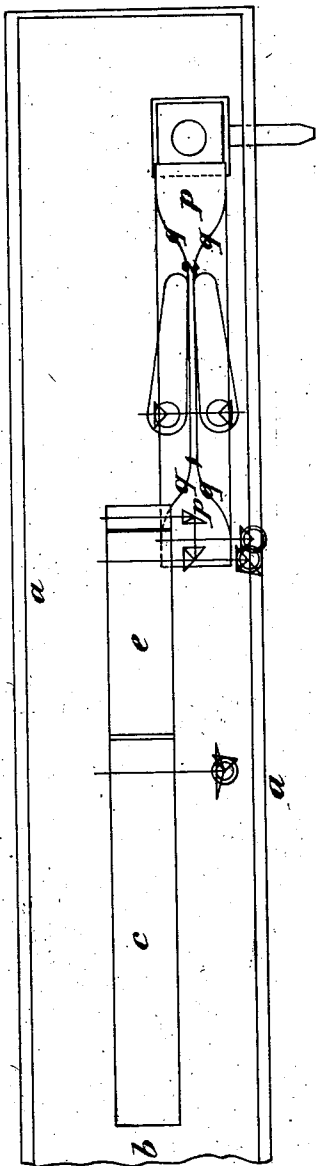
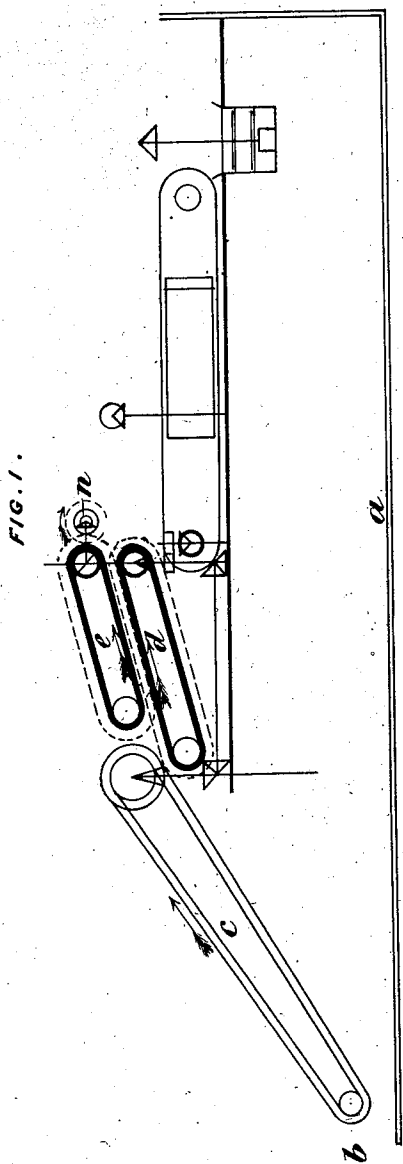


D. AIKMAN.
Peat-Machines.

No. 150,272.

Patented April 28, 1874.



Witnesses:

C. G. C. Simpson
A. T. Kellond

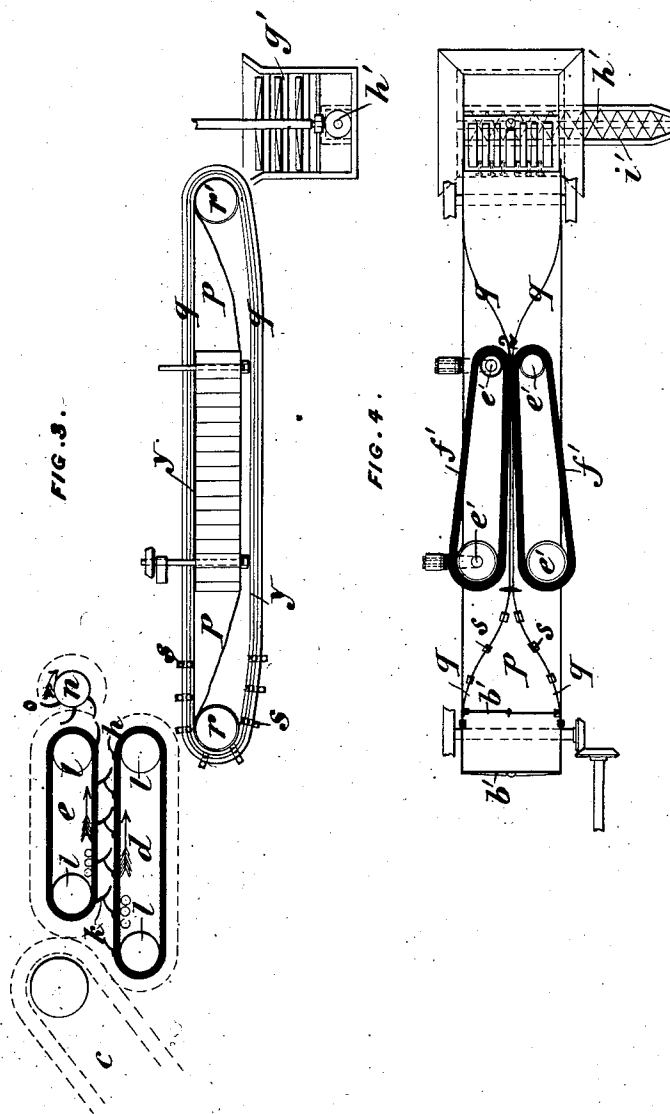
Inventor:

D. Aikman

D. AIKMAN.
Peat-Machines.

No. 150,272.

Patented April 28, 1874.



Witnesses:
C. G. Simpson
A. F. Kellogg

Inventor:
David Aikman

D. AIKMAN.
Peat-Machines.

No. 150,272.

Patented April 28, 1874.

FIG. 5.

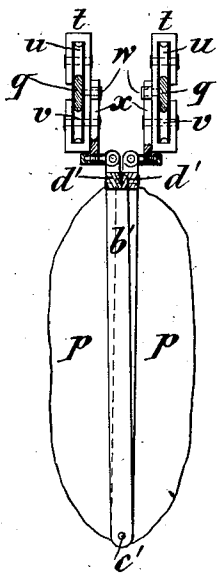


FIG. 7.

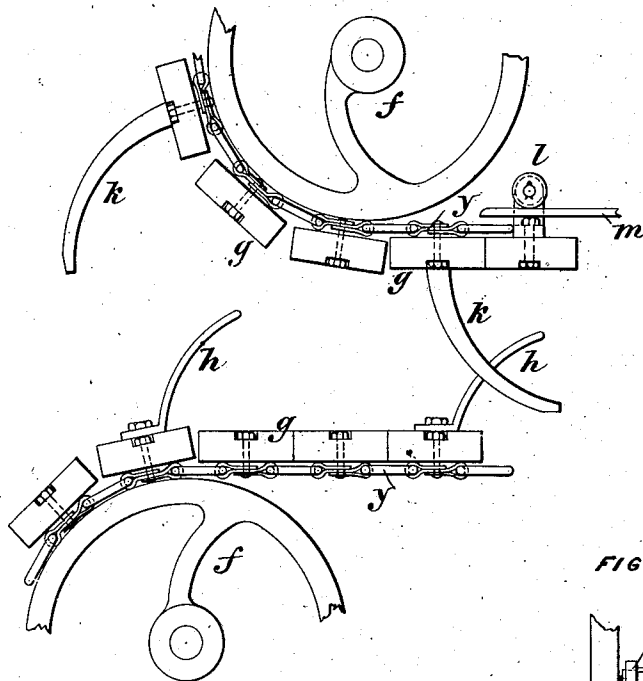


FIG. 6.

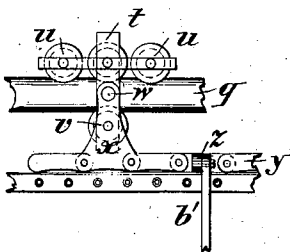


FIG. 9.

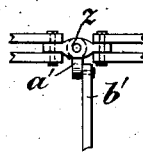
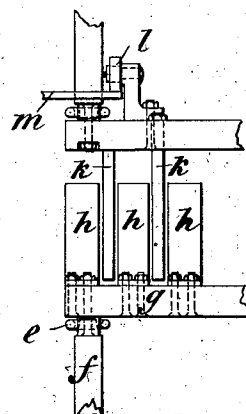


FIG. 8.



Witnesses:
C. G. Simpson
R. T. Kellogg

Inventor:
D. Aikman

UNITED STATES PATENT OFFICE.

DAVID AIKMAN, OF MONTREAL, CANADA.

IMPROVEMENT IN PEAT-MACHINES.

Specification forming part of Letters Patent No. 150,272, dated April 28, 1874; application filed March 9, 1874.

To all whom it may concern:

Be it known that I, DAVID AIKMAN, of the city of Montreal, in the district of Montreal, Province of Quebec, Canada, have invented certain new and useful Improvements on Machinery for Manufacturing Peat-Fuel; and I do hereby that the following is full, clear, and exact description of the same.

This invention has reference to improvements on machinery used for manufacturing peat-fuel, to reduce the amount of manual labor, facilitate the operations of drying, and cheapen the manufacture. My invention also consists in a continuous press, by which sufficient water is squeezed from the peat to bring it to the proper consistency for manufacturing into the required shape.

In the drawings hereunto annexed, where similar letters of reference indicate like parts, Figure 1 represents line-diagram, showing general arrangement of mechanism in the position of side elevation. Fig. 2 represents a plan of Fig. 1. Fig. 3 represents a general view of stick-catcher press and pug-mill, in the position of side elevation. Fig. 4 represents a plan of press and pug-mill. Figs. 5 and 6 represent details of press-bag. Figs. 7 and 8 represent details, showing the construction of stick-catcher and conveyer. Fig. 9 represents detail of chain.

Before proceeding farther with the description of my invention, I would remark that, in the drawings the invention will be delineated as placed on board a scow, similar to those used in wet bogs, and as shown in Figs. 1 and 2. The scale is so small that a mere outline diagram can be given.

It will, however, be understood, that in dry bogs, or when it is desired, the parts herein-after described may be arranged on a portable platform, capable of being moved and set in any required position.

Letter *a* is the scow, in the forward portion of which, or at *b*, any suitable excavating-machinery is situated and arranged to deliver the material cut upon the elevator *c*. This moves in the direction indicated by the arrow in Fig. 1, and deposits the peat upon the conveyer *d*, either arranged at an incline, as shown in Fig. 1; or horizontally, as shown in Fig. 3. This conveyer is constructed, as shown

more particularly in Fig. 7, of two endless chains, *y*, passing over suitable chain-wheels *f*, the chains having wooden boards or other suitable plates *g* attached to them, forming a surface on which the material may be carried. This moves in the direction shown by the arrows in Figs. 1 and 3. At suitable intervals on these projections *h* are attached. *e* is the stick-catcher, similar in construction to the conveyer *d*, above described, it being provided with projections *k*, arranged, as shown most clearly in Fig. 8, to pass between the projections *h* of the conveyer. *l* are pulley-wheels, and *m* a guide arranged to keep the moving-surface of *e* from dropping down and its projections *k* from raking the surface of *d*, while the pulleys *l* attached to *d* are to prevent the surface of *d* being raised by vibration and caught by the projections *k*. *n* is a revolving drum, having projections *o* attached to it. These intermesh with the projections *k* in a similar manner to *k* with *h*, in Fig. 8. The gear by which these parts are operated must be so arranged that the surface of *e* moves in the same direction as the surface of *d* next to it, but with greater velocity, causing the projections *h* and *k* to move in the same direction, but the latter faster. By this means any sticks contained in the material will be caught by the projections *k* and separated from the mass at the point where the projections *o* interlock with *k*. By causing the former to move with greater velocity than the latter, the sticks will be removed from *e*, and, by centrifugal force, thrown into any suitable receptacle arranged to receive them. The material from which the sticks have been extracted is deposited upon a net, *p*, hereinafter more particularly described. It will, however, be seen in Fig. 2 that the conveyer *e* is not in a suitable position to drop the material onto the net, being situated to one side, but an inclined spout or other contrivance may be arranged to obviate the difficulty.

We will now proceed to describe more particularly the arrangement of the net *p* (which will be constructed of strong cord worked over a fine mesh, thereby giving great strength, and forming small openings) and other mechanism used in the operation of pressing. *q* are two endless iron bars, shown in side elevation

in Fig. 3, and in plan in Fig. 4, in which it will be seen that they are set parallel to each other, and that the rounded double extremities are set concentrically with the chain-wheels r and r' at each end. It will be also seen that these bars q converge on their upper side, and run for a considerable portion of their upper part comparatively closely and parallel to each other. On these bars q small carriages s are placed, as shown in Figs. 3 and 4, and in detail in Figs. 5 and 6. Although, as shown in Figs. 3 and 4, they only extend along a portion of the bars, it will be easily understood that they extend completely around each of the bars q , being equal, and at a suitable distance from one another. t is a frame, having attached thereto three pulleys, u , to run on the top of the bar on its upper side, and a pulley, v , to run underneath it. The pulleys u , while running on the upper side of the bar, run on its top edge, and while running on the under side, run on its lower edge. To the carriage t is pivoted at w a plate, x , of the configuration shown in Figs. 5 and 6, serving not only as an attachment to the carriage, but also as a link in the endless chains y . These, as shown in Fig. 3, extend around within the bars q and unite the carriages together, passing over the chain-wheels r and r' , either of which may be arranged in any suitable manner to intermesh or gear with the links of the chains. By preference, or as shown in the drawings, the chain-wheel r will be arranged to do this, so that by its rotation the chains will be caused to travel, and with them the carriages s . To the chains are attached what will be hereinafter called the scissors. This is done in the following manner: On the link z , made thick in the center, as shown in Fig. 9, is pivoted a double-ended eye, a' , arranged to rotate freely on the pivot attaching it to the link z . To the projecting end of a' is pivoted the extremity of the scissors b' , arranged to rotate freely on the pivot. These scissors are pivoted together at the bottom, as shown at c' , Fig. 5. They are provided with edges similar to ordinary scissors, and are of the proper length to reach between the bars q at the widest space between them. A pair of these scissors is attached and situated between every second carriage s . They serve not only to cut up any small sticks which may be contained in, but also to prevent the peat from running back on the net-work as it advances in the press, hereinafter described. It will be seen that, as these scissors travel around with the chain, when coming to the part where the bars q converge, they begin to drop from the horizontal position to which they have been stretched, and keep closing until they come to the parallel part. (Shown at 1 in Fig. 4.) They will then have assumed the position shown in Fig. 5, which they will retain until they come to 2, when they will again begin to open, and will be fully opened at or before the time of arriving over the center of the chain-wheel r' . By means of holes made in the backs of the scis-

sors, the net p , the width of which is equal to or greater than the length of the scissors, is attached by lacing or other suitable means, and to the edges of the net extending between the scissors are attached square beads d' of india-rubber or other analogous substance. These not only render the edges sufficiently rigid to hold the peat in the net during the process of pressing, but also to fill the space between the pressing-surfaces, hereinafter described. By this it will be seen that the endless net is continually traveling around with the chains y and scissors b' , forming, at the same time, a bag in the upper center part, the one end of which closes and the other opens as the motion of the net-work proceeds. The press, acting upon the peat placed by the conveyor d in the bag of the net p , just above described, is arranged in the following manner: e' are chain-wheels, situated on either side of the bag, at a suitable distance, for the purposes hereinafter mentioned, and these are arranged to receive upon them endless chains, similar in construction to those used in what is called the "railroad horse tread-mill." To these are attached battens, like those used in the above-named machines, the position being such that the battens will be vertical, the faces of which, on their side toward the net p , are grooved lengthwise, with intervening spaces of about half an inch wide, and of similar depth. As shown in Fig. 4, the heavy black lines f indicate the position of these chains and battens, it being well understood that the supporting-rail and pulleys existing in the above-named horse tread-mill are used in this case also. By reference to Fig. 4, it will be seen that the surfaces of the press next to the bag of the net-work p are wider apart near the point 1, hereinbefore referred to, and converge as they approach the point 2. By this arrangement, the material contained in the net p enters freely at the end of the press nearest the point 1, and is squeezed as it approaches the point 2, the parts being arranged to cause the squeezing to be done with the required amount of force to give the peat the proper consistency on arriving at the point 2. The press is operated by gearing attached to the axles of the chain-wheels at the end near the point 1. This gearing, together with that employed in moving the chain y and net p , must be so arranged that the two sides of the press and the net p , together with all the parts thereunto attached, will move with an equal velocity. During the process of pressing, the grooves in the battens, forming the surface of the press f' , already described, allow the water to freely escape. This falls into any suitable trough or receptacle placed beneath it, the arrangement of which will be hereinafter particularly described. The material contained on the netting, when it arrives at the chain-wheel r' , falls, by gravity, into a pug-mill, g' , which I shall not describe further, as I claim therein no invention. In this the peat is pulped, converting it into a homogeneous

mass. At the bottom of this pug-mill, an ordinary conveyer-screw, *h'*, is situated, so that the material, after passing the arms of the pug-mill, is forced out of the orifice at the end of the tube *v'* in which the screw is situated. This orifice is, by preference, made rectangular, but is not necessarily so. This, if desired, may be subdivided into any number of suitable spaces.

I would here pause to observe that the action of the conveyer-screw *h'* assists or completes the work done in the pug-mill, and delivers the peat at the orifice above named in a compact mass, sufficiently solid to handle, and, by arranging a knife or other mechanism to pass down, or up and down, in front of the orifice, at suitable intervals, the material is cut into rectangular cubes of the required size.

I now return to the trough hereinbefore mentioned, placed under the press above described. Although I claim in it no invention, it may be well to give a further description of its construction and use, as, in the process of pressing, some of the finer and best particles of the peat are liable to be carried off in the water. This trough is arranged with a spout, leading to a receptacle or sub-trough placed at a lower level. The top of this sub-trough is covered over, with any suitable material, to form a filter for the water to rise up through, while

the peat is allowed to settle in the space below. This sub-trough will be arranged to be moved, emptied, and replaced whenever a sufficient charge of peat has collected in it; or several sub-troughs, if desired, may be used in succession. The material so collected, having been sufficiently filtered to separate the water, will be emptied into the pug-mill and incorporated in the general mass.

What I claim as my invention is as follows:

1. The combination of the conveyer *d*, stick-catcher *e*, and drum *n*, constructed, arranged, and operating substantially as described.

2. The combination of the net *p*, constructed, arranged, and operating substantially as described, with the traveling pressing-surfaces *f'*, constructed substantially as described.

3. The combination of the bars *g*, carriages *s*, scissors *b'*, and net *p*, all working together, substantially as described.

4. The net-work *p*, arranged substantially as described, to form a bag, closing at one end and opening at the other, as the net-work advances, substantially as and for the purposes described.

DAVID AIKMAN.

Witnesses:

C. G. C. SIMPSON,
R. A. KELLOND.