

B. F. BRIGHTMAN.  
Paddle for Drier.

No. 210,491.

Patented Dec. 3, 1878.

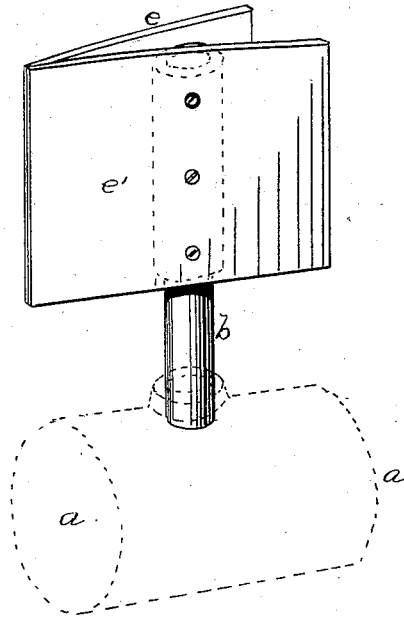


Fig. 1

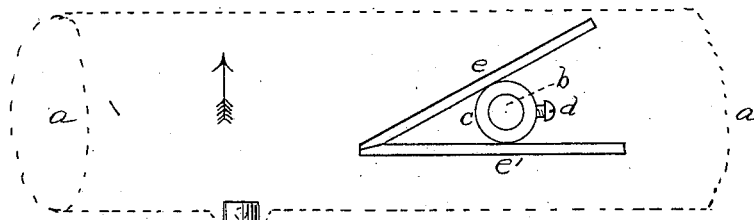
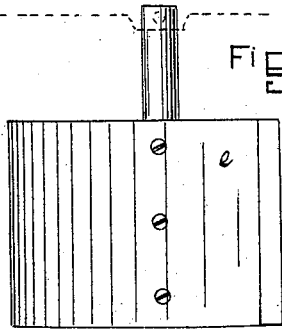


Fig. 2.



WITNESSES

*James W. Reed Jr.*  
*John C. Francis*

INVENTOR

*Benjamin F. Brightman*  
By his Attys.

*Henry W. Williams & Co.*

# UNITED STATES PATENT OFFICE.

BENJAMIN F. BRIGHTMAN, OF BRISTOL, MAINE.

## IMPROVEMENT IN PADDLES FOR DRIERS.

Specification forming part of Letters Patent No. 210,491, dated December 3, 1878; application filed November 18, 1878.

*To all whom it may concern:*

Be it known that I, BENJAMIN F. BRIGHTMAN, of Bristol, in the county of Lincoln and State of Maine, have invented a new and useful Improvement in Driers for Fertilizers, of which the following is a specification:

This improvement relates to the "paddles" or "shoes" in fertilizer-driers which carry the contents of the drier toward the vent or discharge-pipe at or near the end, and is intended more particularly to be applied to the drier patented January 26, 1875, numbered 159,147, as a substitute for the paddles, *s s'*, shown and described in such patent.

The objection to the paddles shown in the above patent, and which my improvement is intended to obviate, is that the matter to be dried is carried from the entrance to the vent too fast, so that it is often found necessary to carry the material back to the hopper, and let it pass through the drier again and again before it is thoroughly dried. This consumes much time and labor. Again, there is no way of regulating the drier by altering the speed at which the contents are passed through to suit the necessities of the different qualities and kinds of matter. Of course it is impracticable to change the positions of the individual paddles to suit different lots of matter. By means of my paddles, below described, these objections are obviated.

When the shaft is turning in the usual direction, the paddles carry the matter toward the discharge-pipe. In case the contents are carried too fast, the shaft is reversed and the matter is tossed and agitated by the paddles, without being carried in either direction, until it is ready to be carried toward the discharge-pipe, when the shaft is again turned in its ordinary direction.

In the accompanying drawings, Figure 1 is a perspective view of my paddle, the shaft to which it is secured being shown in broken lines. Fig. 2 is a plan view of the same in its proper position upon the shaft.

Similar letters of reference indicate corresponding parts.

*a* in broken lines represents the carrying-shaft, which runs the whole length of the drier, and carries the paddles or shoes. *b* is the post which supports the paddle, being placed in the socket *c*, and held immovably therein by means of the set-screw *d*. The lower end of the post is fixed in or to the shaft *a*.

*e e'* is a V-shaped paddle secured immovably to the socket *c*. When the paddle *e e'* is placed upon the post *b*, it is so placed that the side *e'* is parallel with the line of direction of the shaft *a*, and is then secured in such position by means of the set-screws *d*. This brings the side *e* at an angle with the line of direction of the shaft. Now, while the shaft is rotating in its usual direction—*i. e.*, in the direction indicated by the arrow in Fig. 2—the side *e* of each paddle strikes the matter to be dried, and with each stroke not only agitates it, but carries it toward the discharge-pipe. If the matter is being carried forward too fast, the shaft is reversed in motion, so that the side *e'* of each paddle strikes the matter and agitates it without carrying it in either direction. Thus, if the contents are carried too fast, the shaft is simply reversed, and the paddles toss the matter until it is sufficiently dried to be carried on to the discharge-pipe.

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

In a fertilizer-drier, the V-shaped paddle or shoe *e e'*, arranged as above described, so that when the carrying-shaft is turned in its usual direction the side *e* of the paddle carries the matter toward the discharge-pipe, and when the shaft is reversed the side *e'* agitates the matter without moving it forward, substantially as and for the purpose herein set forth.

BENJAMIN F. BRIGHTMAN.

Witnesses:

HENRY W. WILLIAMS,  
B. W. WILLIAMS.