

(No Model.)

W. S. BRICE & W. P. THOMPSON.  
GRAIN TRIMMER.

No. 261,660.

Patented July 25, 1882.

Fig. 1

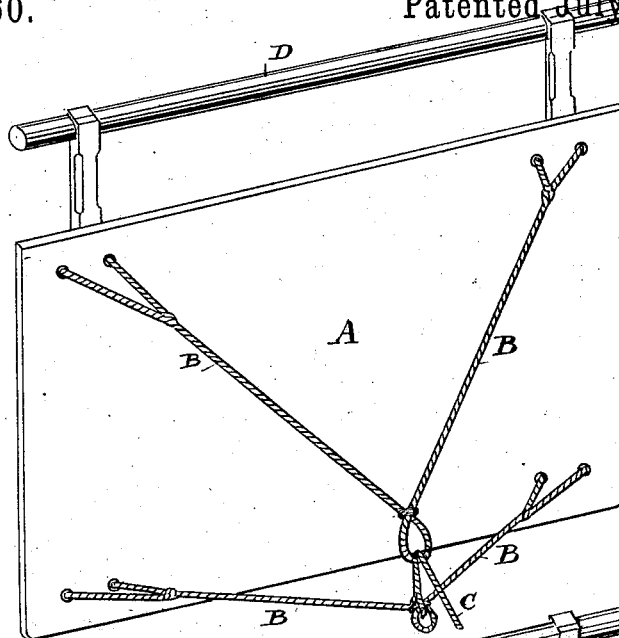
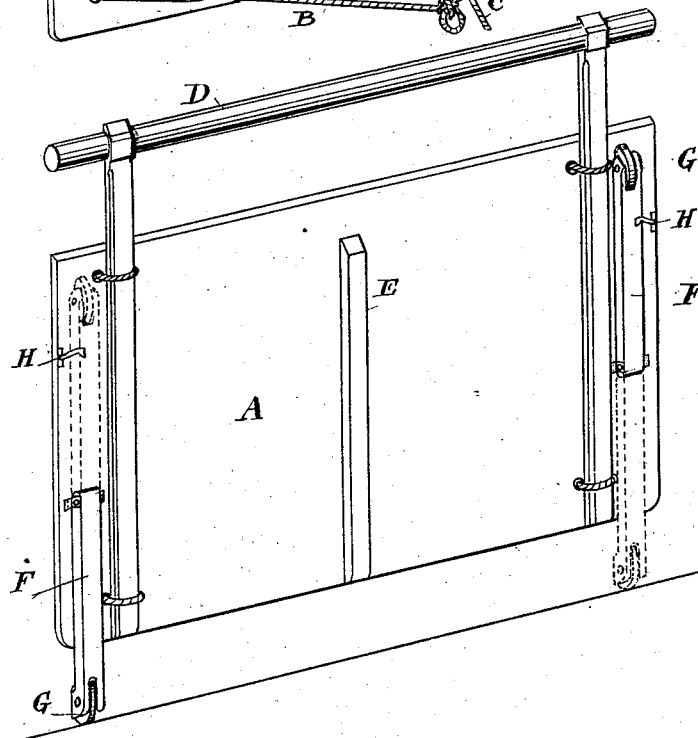


Fig. 2



Witnesses

Newton Wyckoff  
Jas. H. Shipley

Inventors

W. S. Brice and  
W. P. Thompson.  
By Philip T. Dodge, Atty

# UNITED STATES PATENT OFFICE.

WILLIAM S. BRICE AND WILLIAM P. THOMPSON, OF LIVERPOOL, COUNTY OF LANCASTER, ENGLAND.

## GRAIN-TRIMMER.

SPECIFICATION forming part of Letters Patent No. 261,660, dated July 25, 1882.

Application filed April 28, 1882. (No model.) Patented in England July 2, 1880, No. 2,704.

*To all whom it may concern:*

Be it known that we, WILLIAM SOUTHERN BRICE and WILLIAM PHILLIPS THOMPSON, of Liverpool, in the county of Lancaster, England, have invented certain new and useful Improvements in Grain-Trimmers, (part of which said invention has been patented to the said WILLIAM SOUTHERN BRICE in Great Britain, No. 2,704, dated 2d July, 1880;) and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it appertains to make and use the same.

This invention is designed for the double purpose of spreading grain or other material out to dry, and of sweeping up the grain, or of moving it from one place to another a short distance apart. In a cruder form, and only adaptable for scraping up or removing, it is protected in Great Britain by Letters Patent No. 2,704 of 1880. In the working of that form of the apparatus it was soon found practically impossible to spread a uniform layer, as the board could not be held at an even height if two legs were applied to it, these legs necessitating the turning of the board upside down every time the work was changed from spreading to scraping. This was convenient enough when the grain was spread from one side and scraped up to the same, and so the direction of the hauling-rope had to be reversed, and the board could be turned as the rope was reversed. But where two ropes are used alternately, and the grain travels always in the same direction, this reversing of the board must be done by turning it on end. Again, in a board requiring both edges to be used a handle beyond the board in the same plane is out of the question; but this is precisely the best position of the handle. It was therefore found that legs capable of being folded back, swiveled, or slid out of the way were almost a necessity where both operations were required. Where, however, the single operation of spreading is wanted, rigid legs below and a handle above is sufficient; and where scraping only is desired a board without legs does well enough.

Our invention is useful, not merely for

spreading and scraping up grain on drying-floors or kilns, but for removing grain from one part of the quay or warehouse to another, for trimming the grain in vessels laden in bulk, and for bringing the latter to the elevators, the only requisite being a switch in any convenient position and a guide-pulley at the base of the elevator or other place where the grain is required, and the hauling-rope.

For the fuller understanding of the invention we append the accompanying drawings, in which Figure 1 is a front view of the apparatus, and Fig. 2 a back view, showing reversible runners.

A is the board or shovel; B B B B, four ropes of equal lengths, ending in two loops. The hauling-rope C is tied to one of these loops and passes through the other. In this case each loop will be equidistant from the corners to which it is attached; but the bottom ropes will be the length of the loop, or nearly so, longer than the top ones, to allow of the bottom of the loop on which the rope is fastened coming level with the top of the top loop through which the rope passes. D is the handle; E, strengthening-pieces. Other modes of fastening the four corner ropes to the hauling-rope can be used, the main point being to so unite them that the board shall stand vertically and at right angles to the hauling-rope, (when they are all in tension with a horizontal pull on the hauling-rope,) and that the point of junction with the hauling-rope shall be opposite the vertical center line of the board at or a little below its center of surface.

F F are hinged legs or runners, armed in the case of heavy scrapers with a wheel, G. These are used when, as in brewers' kilns, the grain has to be spread to a uniform layer and afterward scraped up. The leg is proportioned in length to the depth of layer usually spread in the kiln, floor, or drying-ground, but can be made adjustable as regard length or in its position on the board, if desirable. For most purposes, however, the desired depth of layer is always the same, and then only one length of leg is required. The leg rests against the bottom of the board when the board is being pulled forward, and for this purpose the bottom is strengthened with side bars, and the back

right down to the bottom edge. When the grain is dry or the malt sufficiently heated—when, in fact, the operation is completed—the legs F of the scraper are thrown back and are caught and fixed in the springs H H. They are now no longer in the way, and the scraper resting on the floor can be used to scrape up the material. Then the legs are again released and the scraper used to spread a fresh lot of raw material. The legs can, if desirable, be held to the board by a clamp, so as to remain firm when the board is pulled back by hand; but in most cases the boards are so light that the laborers prefer to drag them without using the clamps than to waste time in clamping. Self-catching clamps can, however, be used, if desired, but are slightly more expensive. These legs are dispensed with when the scraper is only used for scraping clean, and never for spreading a uniform layer.

We are aware that road-scrapers have been made in various forms with independent hauling-ropes attached to their opposite ends and with arms or runners extending backward to travel on the surface of the ground and sustain them in an inclined position.

It will be observed as a peculiarity of our device and the method of operation that the board is hauled by a single line or rope attached to draw at substantially the center of the board, whereby the operator is enabled to move the board vertically and laterally while being moved forward mechanically, and to tip it forward and backward, as may be required, to secure the proper distribution of the grain upon the floor, and this, too, while the line is being drawn from a fixed point.

The right is reserved to make the method of moving grain herein described, regardless of the details of the device shown, the subject-matter of a separate application.

We claim as our invention—

1. A device for trimming or moving grain or other material, consisting of a flat board provided at its top with a handle by which to con-

trol its movement, and also provided in the front with a single hauling-line applied substantially as shown, the board being free to tip forward and backward at the will of the operator.

2. The device for trimming or moving grain and like material, consisting of the flat upright board provided with a handle at the top, with a hauling-rope applied, substantially as shown, to its front, and with supporting-legs, substantially as described, adapted to travel upon the floor and sustain the lower edge of the board above the same.

3. In a device for trimming and moving grain, the combination of a flat upright board, a hauling-rope, a handle, and adjustable sustaining-legs, substantially as described, whereby the lower edge of the board may be permitted to rest upon the floor or sustained above the same at will.

4. In combination with the grain moving or trimming board, as described, the upper hauling-rope, B, provided with a loop, the lower hauling-rope, and the rope or cable C, passed through the loop of the upper rope and attached to the lower rope, in the manner described and shown.

5. The combination, in a device for trimming and transporting grain and similar material, of a flat board, A, a hauling-rope, C, connected with the board, substantially as described, to maintain the same in an upright position, and a handle, D, applied to the top of the board, substantially as shown, whereby the attendant is enabled to control the position of the board and the direction in which it moves.

6. The combination of the flat board A, having a handle at the upper side, a hauling-rope attached to the front side, and the hinged legs F, provided with rollers G.

WM. S. BRICE.

WM. P. THOMPSON.

Witnesses:

J. O. O'BRIEN,  
C. SOUTHALL.