L. SHOOK.
Paddle-Wheel.

No. 200,577. **Patented Feb. 19, 1878.**

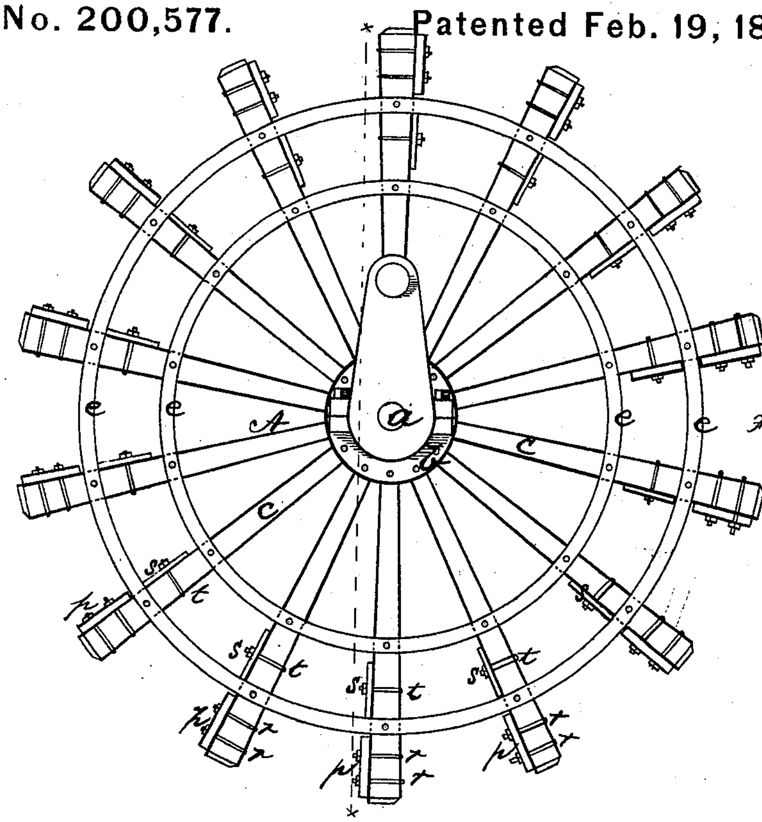

Fig. 1.

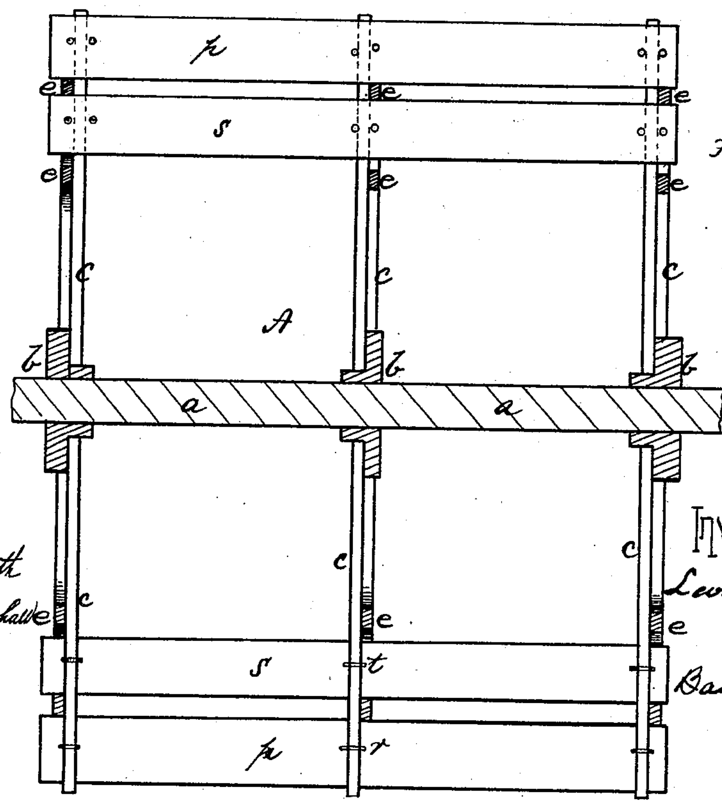

Fig. 2.

Witnesses.
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UNITED STATES PATENT OFFICE.

LEVI SHOOK, OF PITTSBURG, PENNSYLVANIA.

IMPROVEMENT IN PADDLE-WHEELS.

Specification forming part of Letters Patent No. **200,577**, dated February 19, 1878; application filed November 13, 1877.

To all whom it may concern:

Be it known that I, LEVI SHOOK, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Paddle-Wheels; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawings, in which—

Figure 1 is an end view of a paddle-wheel embodying my invention, and Fig. 2 a longitudinal section of the same.

Like letters refer to like parts wherever they occur.

My invention relates to the construction of paddle-wheels for both side and stern wheelers; and consists in combining with a paddle-wheel one or more "splash-boards," adapted and arranged to deflect the water splashed or thrown up by the entering paddles, whereby the rising buckets or paddles are relieved, the working paddles assisted, and the water rendered more compact before the entering buckets.

In paddle-wheels as ordinarily constructed and in common use, the width of the paddle is proportioned to the dip required therein, and the water splashed up by the entering paddle passes through the open arms, falling upon the rising paddles, adding to the weight they are forced to lift, increasing the power required and decreasing the speed.

The object of the present invention is to relieve the rising buckets, as well as to utilize the power from the water splashed.

I will now proceed to describe my invention, so that others skilled in the art to which it appertains may apply the same.

A represents a paddle-wheel, having a suitable shaft, *a*, flanges *b* and arms *c*, with appropriate braces (not shown) and circles *e*, all of which may be of the ordinary form, as shown, or of any approved construction. *p* are paddles, secured at or near the extremities of the arms *c* by stirrups *r*, their width and thickness being proportioned to the size of the wheel, and adapted to the work required of them. To the arms *c*, just above the paddles, on either side thereof, as desired, and preferably with a slight space between, I secure splash-boards *s*, either by stirrups *t* or in other suitable manner. These splash-boards may be of any desired material, but are preferably of three-fourth-inch planking, and do not materially add to the weight of the wheel.

When in use, the water splashed or thrown up by the entering paddle strikes the splash-board of the preceding paddle, assisting the working paddle somewhat, is deflected thereby, and falls in advance of the entering paddle, rendering the water more solid for the entering paddle, and, being prevented from passing through the arms onto the rising paddle, relieves them of additional weight.

In an experimental wheel more than four feet in diameter, the construction shown increased the speed about one-tenth. In the case of a full-sized stern-paddle boat plying on the Ohio river, the speed after the wheel had been supplied with my devices averaged twenty revolutions per minute, while previous to that her maximum speed with the same engines was eighteen revolutions.

An obvious equivalent (in many respects) of my invention would be the widening or extension of the paddles up on the arms; but such construction is objectionable, as tending to overload the wheel when it had too much dip, and also as adding greatly to the weight of the wheel.

Another method of combining the splash-board with the wheel to effect the same purpose would be to interpose it between the paddle-arms *c*, securing it to the circles *e*, as shown in dotted line, Fig. 1, or to supplemental arms; but such a construction is more cumbrous and costly, without any corresponding advantage.

The advantage of my invention, in addition to those already specified, is that it can be readily and cheaply applied to the paddle-wheels in common use.

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

The combination, with a paddle-wheel, of a series of splash-boards, arranged on or between the arms above the paddle, substantially as and for the purpose specified.

In testimony whereof I, the said LEVI SHOOK, have hereunto set my hand.

LEVI SHOOK.

Witnesses:

F. W. RITTER, Jr.,

W. W. GRIER.