

D. De Haven.
Paddle Wheel.

N^o 107,014.

Patented Sep. 6, 1870.

Fig. 1.

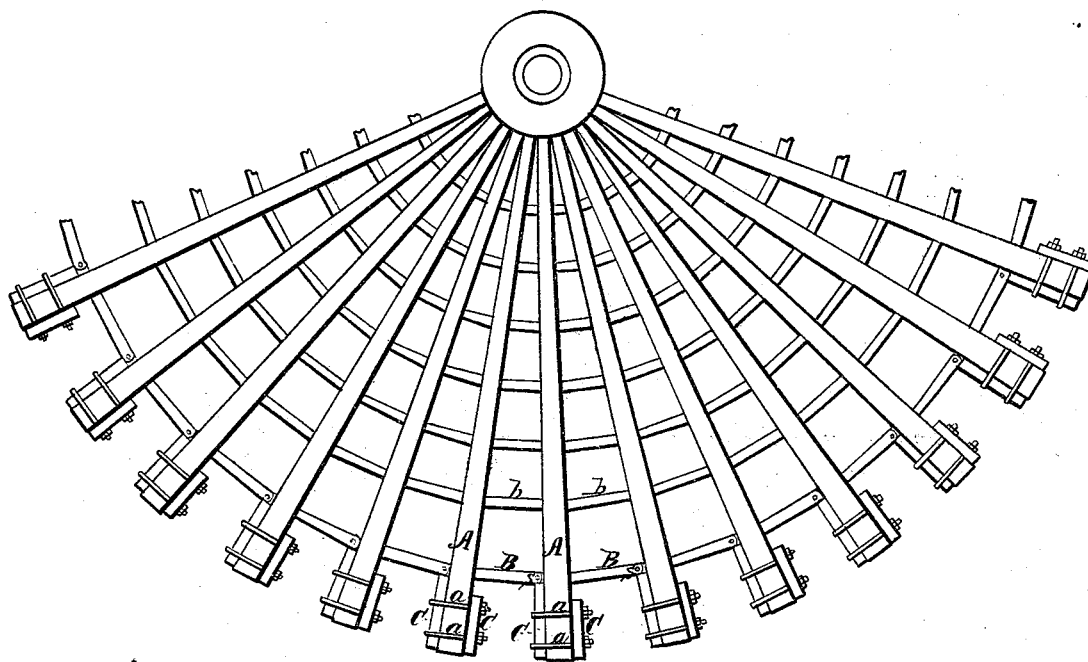
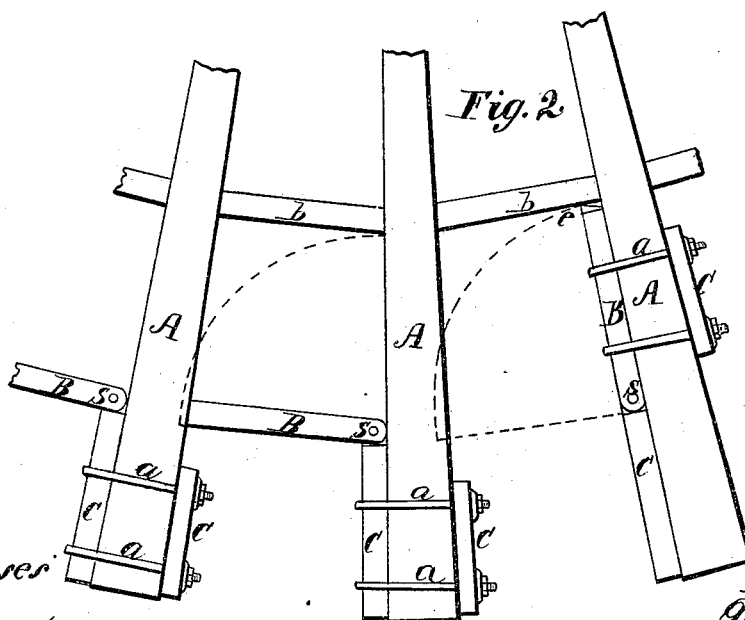


Fig. 2.



Witnesses:
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DAVID DE HAVEN, OF NEW ORLEANS, LOUISIANA.

Letters Patent No. 107,014, dated September 6, 1870.

IMPROVEMENT IN PADDLE-WHEELS.

The Schedule referred to in these Letters Patent and making part of the same.

To all whom it may concern :

Be it known that I, DAVID DE HAVEN, of New Orleans, in the parish of Orleans and State of Louisiana, have invented an Improved Paddle-Wheel for Steam-Boats; and I do hereby declare the following to be a full and exact description of the same, reference being had to the accompanying drawing making part of this specification,

Figure 1 being a side view of a segment of a wheel, and

Figure 2, an enlarged view of the same, showing the manner of shifting the buckets or floats.

Like letters of reference designate corresponding parts in both figures.

The object of this invention is to give greater scope for shifting the buckets or floats than can be had in the paddle-wheels of river steamers as ordinarily constructed, and, at the same time, maintain an equal degree of strength.

The shifting of buckets outward or inward along the wheel-arms, to lessen the effective diameter of the wheel, is a thing of great importance, as it has been proved by long experience that, when the bucket is immersed too deep in the water, the power required to revolve the wheel is greatly in excess of the effect produced in propulsion; and, as the degree of immersion varies constantly, by reason of the different amount of freight on board, it becomes necessary to shift or move the buckets frequently.

My invention permits a greater latitude in the respect, without a corresponding decrease in strength, than can be obtained in any wheel as ordinarily constructed.

Let A A represent wheel-arms, connected by a system of braces arranged in concentric circles in the usual manner.

The last or outer series, B B, is hinged at *s* to a piece, *c*, secured to the wheel-arm.

These braces are provided with tongues *e e*, which enter grooves in the adjoining wheel-arms, (see fig. 2,) and thus prevent lateral motion.

The braces *b b* in the second tier are secured in the usual manner to the wheel-arms, only the outer tier being hinged.

The hinged braces B B, when turned up against the arms A A, allow the stirrups *a a*, which secure the buckets C C, to be slipped along the arm to any desired point beyond the tier of braces *b b*, (see fig. 2.)

Now, as the wheel-arm always breaks at the tier of braces next the bucket, in case of accident it will be seen that the hinged tier of braces is interposed, when the buckets are at the extremities of the arms, thus requiring more than double the force to break the arm than if they were omitted, while, at the same time, they oppose no obstacle to the buckets being shifted upward to the second tier of braces *b b*.

Having thus described my invention,

What I claim as new, and desire to secure by Letters Patent, is—

The outer circle or tier of braces B B, hinged in the manner substantially as shown, and for the purposes set forth.

DAVID DE HAVEN.

Witnesses:

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