

(No Model.)

T. C. LIDSTER.  
ROUNDAABOUT.

3 Sheets—Sheet 1.

No. 448,056.

Fig. 1. Patented Mar. 10, 1891.

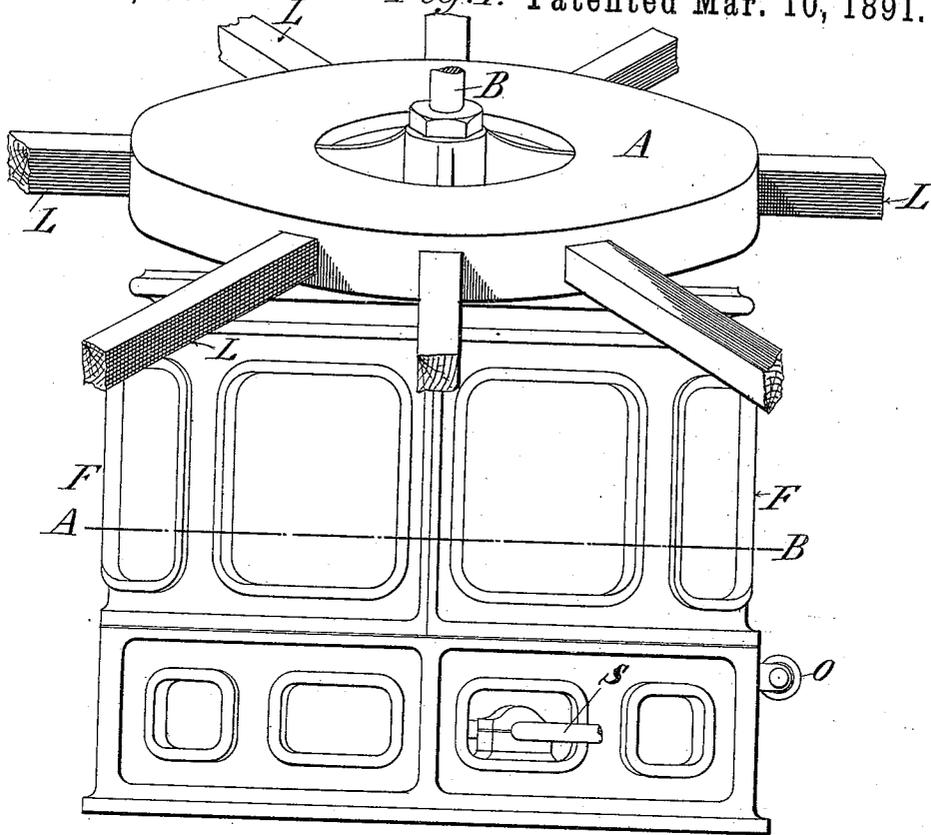
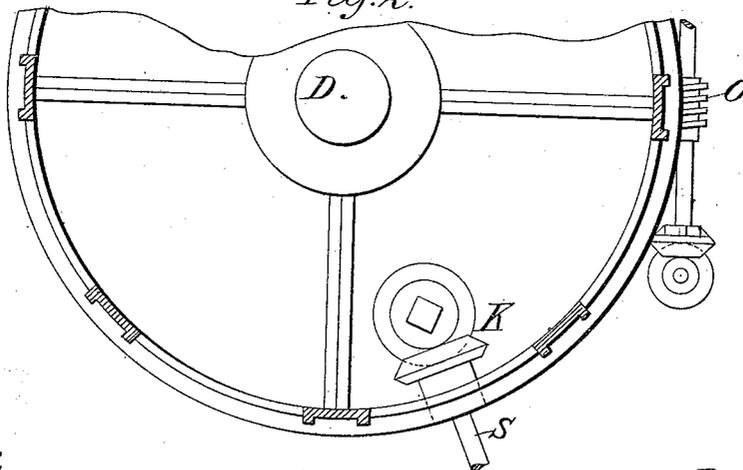


Fig. 2.



Witnesses:  
Chas. Paley.  
L. N. Legendre

Inventor:  
Thomas C. Lidster.  
per A. Harvey  
Attorney.

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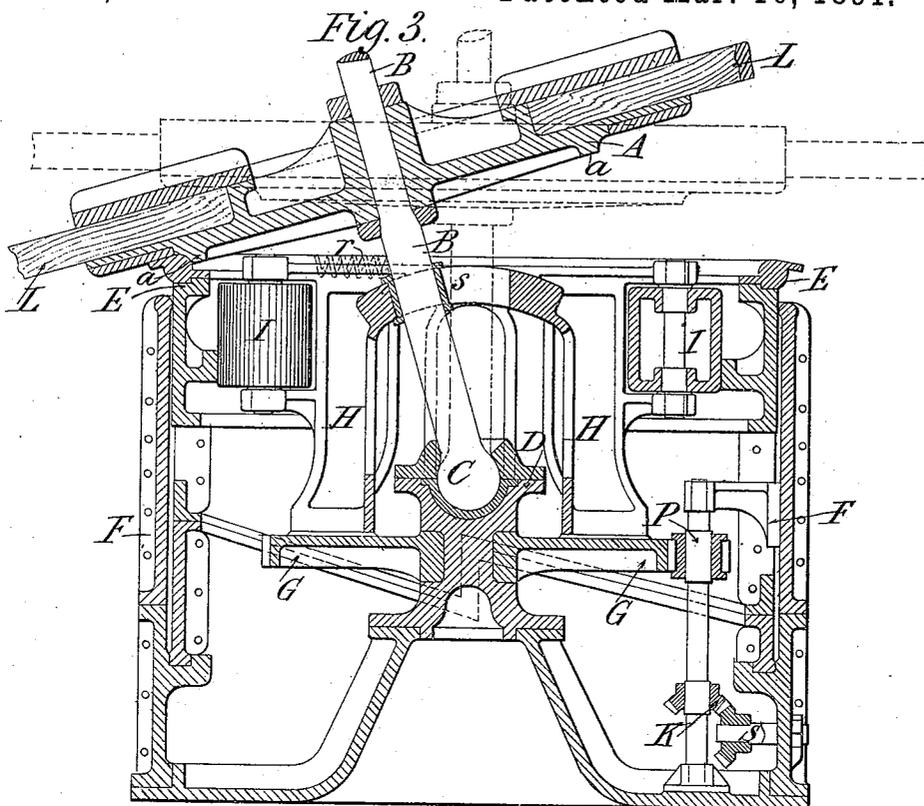
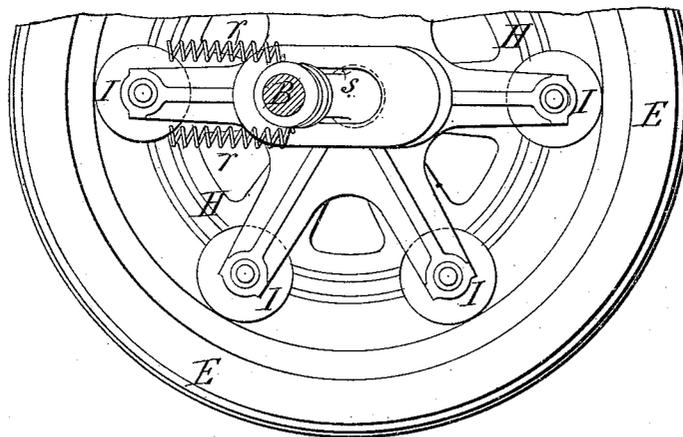


Fig. 4.



Witnesses.

Chas. Raley.  
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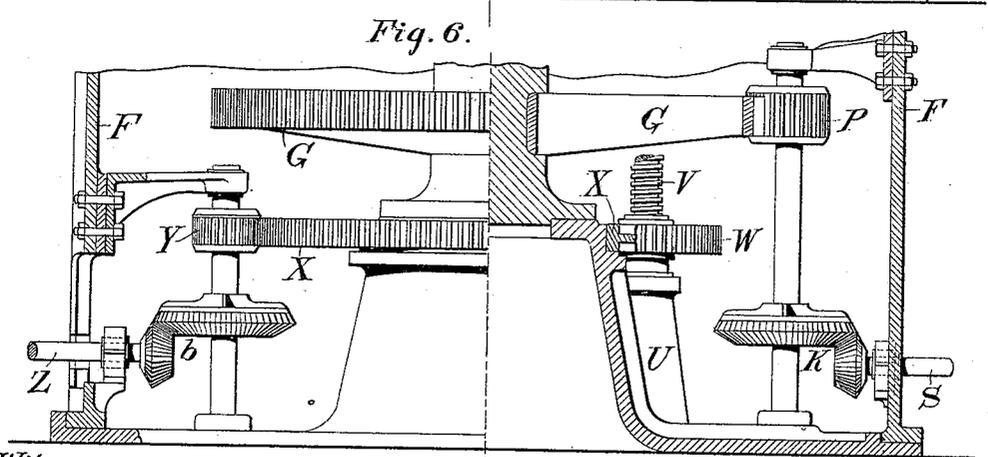
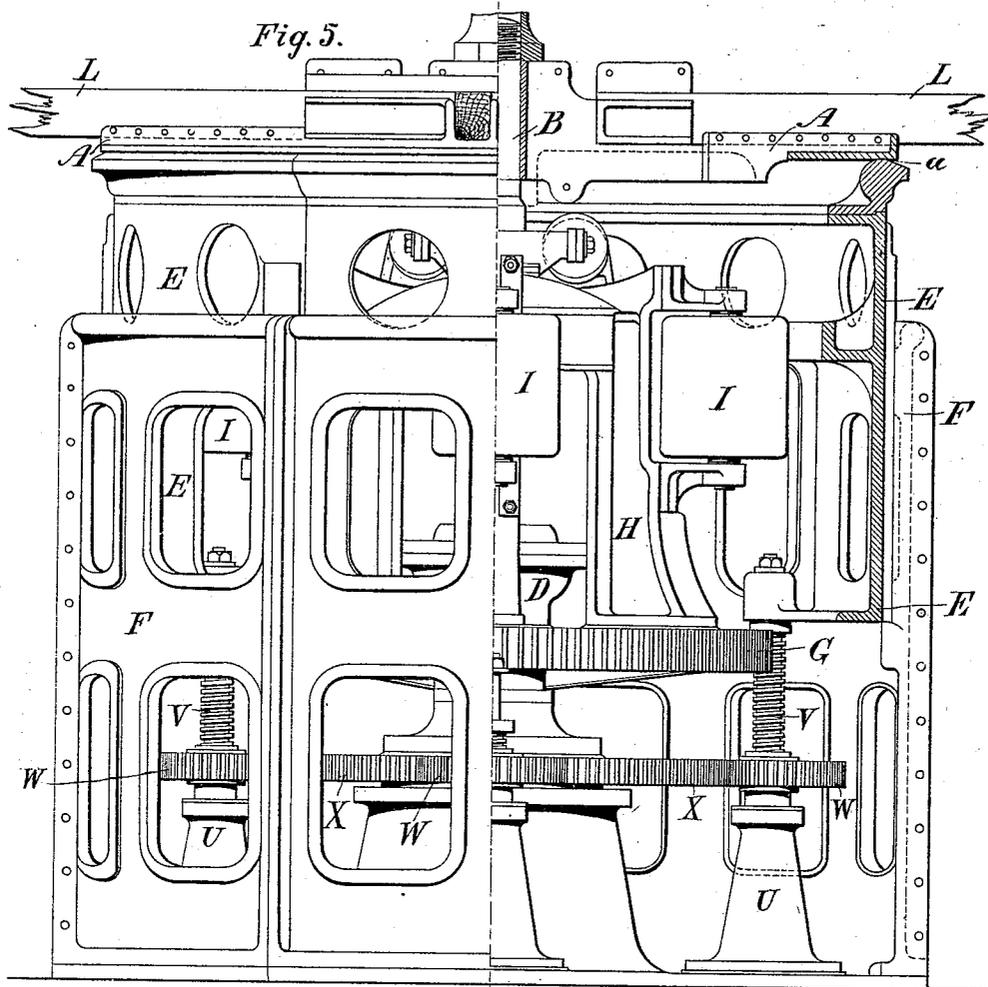
Inventor.

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per A. Harvey  
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Witnesses:  
*Chas. Raley.*  
*Geo. Allen.*

*Thomas C. Lidster, Inventor.*  
*A. Harvey Atty.*

# UNITED STATES PATENT OFFICE.

THOMAS COUSSINS LIDSTER, OF HULL, ENGLAND.

## ROUNABOUT.

SPECIFICATION forming part of Letters Patent No. 448,056, dated March 10, 1891.

Application filed August 9, 1889. Serial No. 320,312. (No model.) Patented in England November 15, 1887, No. 15,614; in Belgium May 11, 1888, No. 81,763, and in France May 28, 1888, No. 190,837.

*To all whom it may concern:*

Be it known that I, THOMAS COUSSINS LIDSTER, a subject of the Queen of Great Britain, residing at No. 73 Buckingham Street, Holderness Road, Hull, Yorkshire, England, have invented certain new and useful Improvements in Roundabouts, (for which Letters Patent have been granted to me in the following countries, viz: in Great Britain, No. 15,614, dated November 15, 1887; in Belgium, No. 81,763, dated May 11, 1888, and in France, No. 190,837, dated May 28, 1888,) of which the following is a specification.

The object of my invention is to apply an undulatory or wave motion to a roundabout, so that the occupants of boats or seats attached thereto may be subjected to a motion analogous to that produced by the waves of the sea, the degree of said motion being varied at will.

In order that my invention may be the better understood, I have appended the accompanying two sheets of drawings, in which—

Figure 1 represents an elevational view of the device or contrivance made according to my invention, and Fig. 2 a part sectional plan of same on line A B, Fig. 1. Fig. 3 represents a sectional elevation; Fig. 4, a top plan of the device with the disk hereinafter referred to removed. Fig. 5 is a sectional elevation of the machine complete, and Fig. 6 a sectional elevation of the lifting-gear.

Corresponding parts are indicated by similar letters of reference throughout the several views.

In carrying out my invention I employ a disk A, attached to a central spindle or shaft B, the lower extremity of which is provided with a spherical termination C, Fig. 3, arranged to work within a suitable divided cup D, forming a "ball-and-socket joint." The lower edge *a*, Fig. 3, of the disk A bears upon the edge of a circular tube E, arranged to fit freely within the framing F. The disk A and central spindle B are driven by a horizontal geared wheel G, to the upper part of which is attached a hollow shell H, provided with a slot *s* with a sliding bearing, so that the combined elliptical and circular motion of the disk may be fully compensated.

The horizontal geared wheel G is driven by

a pinion P, to which motion is transmitted by means of the shaft S and miter or bevel wheels K or any suitable method of transmitting motion. The shell H is provided with vertical rollers I, bearing against the inner surface of the circular tube E. Two spiral springs *r* serve to balance the weight of the boats or other form of vehicle for carrying passengers when such vehicles are at the lowest part of the wave motion. Bars or beams L are adapted radially in the disk A, to the free extremities of which are attached or suspended the boats or other form of vehicles above mentioned.

It is evident that a regular wave motion may be obtained by the combined revolution of the disk A around its central spindle B and the circular motion of the disk around the edge of the tube E, the degree of motion being varied by raising or lowering the tube E. For instance, when the tube E is raised to its full extent the disk A has a circular movement only in a horizontal plane, as shown by the dotted lines, Fig. 3. It follows, therefore, that the raising or lowering of the tube E will vary the degree of the undulatory or wave motion, and I prefer to accomplish this by means of screw-jacks consisting of screws V, held in stands U and rotated by pinions W, which receive motion from the wheel X, journaled upon the central portion and in its turn receiving motion from the pinion Y, bevel-gears *b*, and the shaft Z; or other equivalent lifting devices may be used.

Having now particularly described and ascertained the nature of my said invention and in what manner the same is to be performed, I declare that what I claim is—

1. In a roundabout, the combination of a disk A, having radial arms carrying vehicles or conveyances and having a lower edge *a*, adapted to bear upon the upper edge of an adjustable tube or cylinder, a spindle B, supporting said disk and having its lower end C shaped spherically to form part of a ball-and-socket joint and having an intermediate bearing adapted to slide in a slot *s*, a stand supported upon the base or frame and terminating at its upper end in a cup D, adapted to form a ball-and-socket joint with the spindle end C, the gear-wheel G, journaled upon said

stand and carrying a shell H, surrounding  
the cup D and having a slot s, and having  
radial projections in which are journaled ver-  
tical friction-rollers bearing internally on a  
5 rim or flange of an adjustable tube or cylin-  
der E, surrounding the shell H, rollers I, and  
wheel G, and made adjustable within a fram-  
ing and having its upper edge adapted to sup-  
port the disk A, the frame F, surrounding the  
10 tube E, means to drive the wheel G, and means  
to raise, lower, and hold the tube or cylinder  
E, substantially as set forth.  
2. In a roundabout, the combination, with

the disk carried upon a spindle adapted to  
assume an inclined position while rotating 15  
with said disk, of a tube or cylinder E, ad-  
justable in elevation and having its upper  
edge adapted to support said disk, substan-  
tially as set forth.

In testimony that I claim the foregoing as 20  
my invention I affix my signature, in pres-  
ence of two witnesses, this 2d day of May, 1889.

THOMAS COUSSINS LIDSTER.

Witnesses:

ROBERT MATSON,  
CHARLES HENRY LANCASTER.