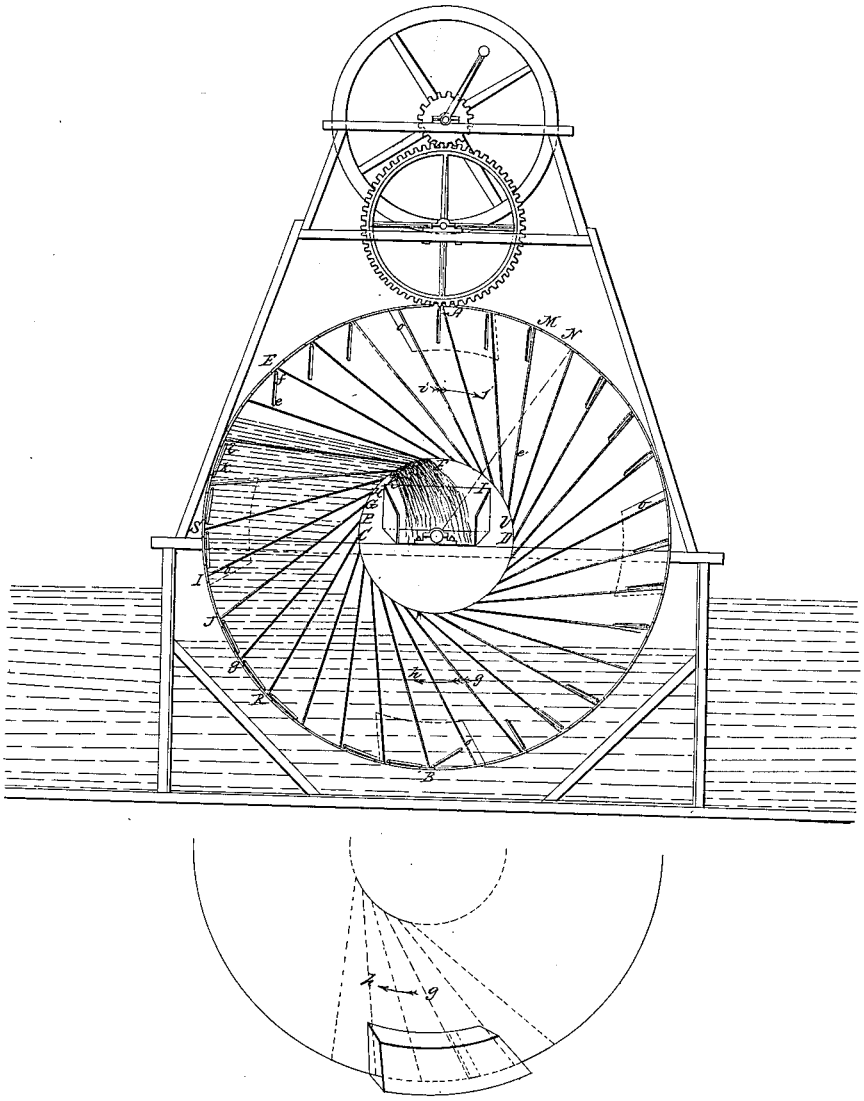
2 Sheets-Sheet 1

P. D. Henry,

Draining Pump.

No. 1930. Patented Jan. 9, 1841.



Witnesses;
Th. Collins
E. F. Knight

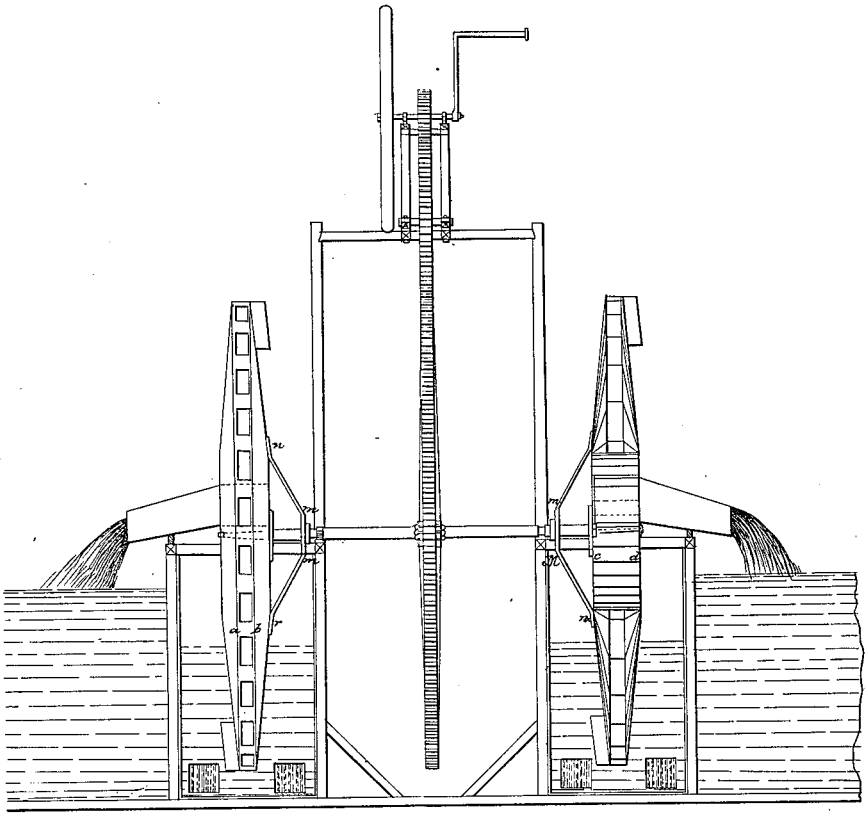
Inventor;
Peter D. Henry

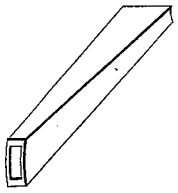
2 Sheets-Sheet 2

P. D. Henry,

Draining Pump.

No. 1,930. Patented Jan. 9, 1841.





Witnesses;
S. Wellcome
E. F. Hornsby

Inventor;
P. D. Henry

UNITED STATES PATENT OFFICE.

PIERRE DÉSIRÉ HENRY, OF NEW ORLEANS, LOUISIANA.

HYDRAULIC WHEEL FOR RAISING WATER.

Specification of Letters Patent No. 1,930, dated January 9, 1841.

To all whom it may concern:

Be it known that I, P. D. HENRY, of the city of New Orleans, State of Louisiana, have invented a new and Improved Hydraulic Wheel for Draining or for Raising Water from a Low Place or Reservoir to a Higher One; and I do hereby declare that the following is a full and exact description.

The nature of my invention consists in the combining of scoops and valves with a hollow wheel divided into compartments so that each of the compartments receives the water through a valve or scoop and then by means of the rotary motion given to the wheel raise the water above the center and empties it into a duct or gutter, by which it is carried off; said scoops, valves and compartments being so combined as to produce the most powerful and useful effect.

To describe the wheel more minutely I will suppose one (N, E, B, drawing) six feet in diameter, agreeably to which the other parts of the machine would be as follows: the thickness of the wheel at the circumference $2\frac{3}{4}$ inches, (say from *a* to *b*, in drawings;) the thickness at the center $6\frac{1}{4}$ inches (say from C, to D, in the drawings;) so that the wheel will swell or bulge out from the circumference increasing in thickness to the center or axle, the sides of the wheel to be closed up water tight so as to leave an opening or inner circle C, F, D, vacant, two feet in diameter; the inner circle is formed by a number of pieces jointed together so as to form said circle which is joined with the outer circumference by connecting pieces mortised into said circle and said outer circumference. The portion of the wheel so closed up is to be equally divided into thirty two sections or compartments by means of water-tight partitions formed of substantial grooved boards, which partitions shall extend from the circumference of the wheel to the circumference of said inner circle. Said partitions are represented in the drawing by the lines S, K, H, I, J, C, and are placed so as to deviate (taking the connection of any one of them with the other circumference as a focus) about sixteen degrees from the line of the radius in angle T N U, or in other words so that the length of each partition shall be two feet five inches and shall terminate at one foot. From the center the wheel is intended to be turned in the direction in which the arrows *g h* and *i j* are pointed. Around the outer circumference, to each of the openings of the compartments, except eight, are affixed common valves or flaps, on hinges (as in the drawing represented by C, F, K, *l*, and the like) $6\frac{1}{4}$ inches long by $2\frac{3}{4}$ inches broad, which are hinged so as to open inside, and the hinges are to be placed on that side of the opening nearest to the direction in which the wheel is intended to turn eight of the 32 compartments are chosen equidistant, and are to be closed water tight at the circumference except a hole (*o o o o* represented in the drawing) on the side of the rim, so that four of the holes will open on one side of the wheel and four on the other near the rim; to each of said holes is to be applied a scoop or spoon a distinct projection of which is represented by a good draftsman and marked Figure X in the drawing in the form of an oblong box $6\frac{3}{4}$ inches high $2\frac{3}{4}$ inches broad and $20\frac{1}{4}$ inches long, parallel with the circumference and open at one end in the direction of the motion of the wheel. By this arrangement and combination the valves are opened as they descend into the water and close as they rise above the lowest point, thus retaining the greatest quantity of water; and by the inclination of the compartments or tubes, they are enabled to hold the water until it is raised above the center where the duct or gutter K L is placed. These valves work peculiarly well when the water is abundant, but when the water is shallow the spoons are most useful, as they catch up the water even at the lowest ebb and empty it. This the compartments or tubes empty into the gutter in the same manner, so that by this arrangement the machine is always efficient and does a good quantity of work and empties the place to be drained in the shortest period of time.

The greater thickness of the wheel near the inner circle is to afford an aperture on that side, equal to that of the valves at the circumference making up in width what each aperture necessarily loses in height.

The wheel is fixed to the axis, so that it turns with the axis. It is fixed to the axle by means of four iron claws projecting from the wheel and represented by M—N in the drawing and screwed to the wheel at the point N it is propelled by steam or manual power applied to the axle in any of the common modes by crank tooth wheel or band.

The wheel may be made of any size in or about the proportions above described.

In large wheels the number of compartments should be increased, so that the valves should not be too large. In places where the water is always deep the spoons need not be used. In places where the water is always shallow the number of spoons should be increased to sixteen, viz., eight on each side; and on larger wheels proportionally.

I call attention particularly to the application and arrangement of the valves the scoops or spoons, the inclination of the tubes, the swell of the wheel toward the direction in which the wheel is turned and the height to which the water is raised (*i. e.*, above the center) all most of which when examined and understood will be found to be peculiar to this wheel.

That I claim as my invention and desire to secure by Letters Patent:

The tangential manner in which I arrange the tubes for conducting the water to the gutter in combination with the valves governing inlet of the tubes, also in combination therewith the spoons for scooping the water up when the basin is low in the said hydraulic wheel for draining or raising water.

PIE. DRE. HENRY.

Witnesses:
I. I. HIBERT,
G. BREETHE.