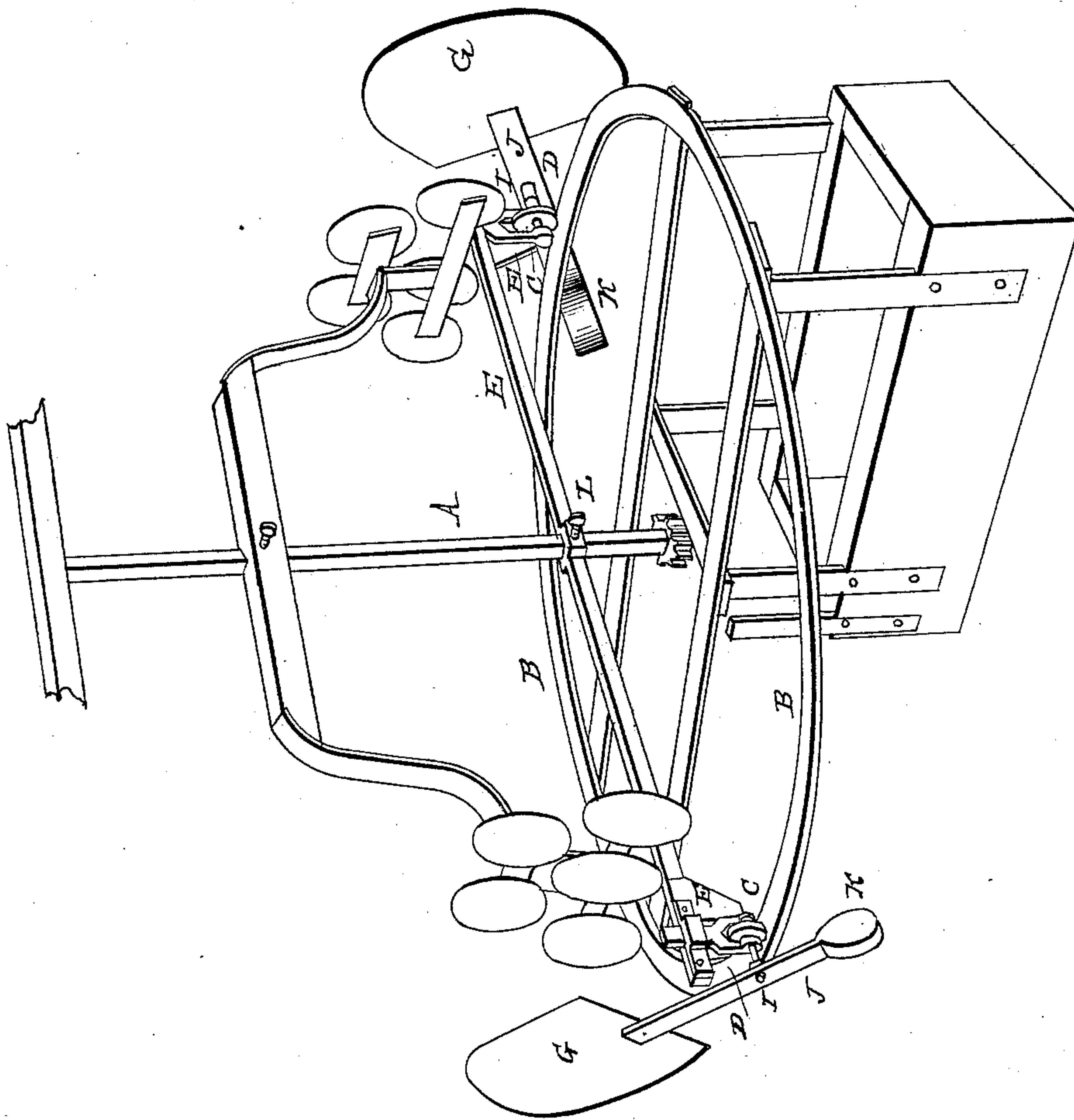


B. F. WILLARD.

Signal Light.

No. 1,085.

Patented Feb. 20, 1839.



UNITED STATES PATENT OFFICE.

BENJAMIN F. WILLARD, OF BOSTON, MASSACHUSETTS.

IMPROVEMENT IN REVOLVING LIGHTS FOR LIGHT-HOUSES.

Specification forming part of Letters Patent No. 1,085, dated February 20, 1839.

To all whom it may concern:

Be it known that I, BENJAMIN F. WILLARD, of the city of Boston, in the county of Suffolk and State of Massachusetts, have invented a new and useful Improvement in Revolving Lights of Light-Houses, called "Willard's Revolving Flashing Lights," which is described as follows, reference being had to the annexed drawings of the same, making part of this specification.

Owing to the multiplicity of the common revolving lights on our coast it has become very difficult for mariners to distinguish one light from another, so much so, indeed, that in some places it has become necessary to incur an additional expense of erecting two or three lights in the same place in order to render the light distinguishable from other lights. Now in order to save this additional expense and at the same time to render the light clearly distinguishable from all others is the object of this invention.

It is effected in the following manner: In addition to the ordinary clock-work heretofore used for imparting a regular rotary motion to the main or vertical shaft A, on which the lights are suspended, there is arranged upon and secured to the frame of the clock-work in a horizontal position a circular rim or railway B of any required diameter. Upon this horizontal stationary circular rim or railway B there is made to travel around in a circle upon its upper or flat side a vertical wheel C of a diameter adapted to the number of revolutions required to be performed in passing around upon said circular railway, whose axle D turns in suitable pulley-frames E, whose shank works loosely in an oblong mortise near the end of an arm F, extending horizontally from the vertical shaft beyond the periphery of the circular railway.

The object of having the frame of the wheel to rise or fall loosely in the mortise of the arm is to cause the wheel always to bear on the railway and be turned by the friction be-

tween their surfaces in contact and thus to turn the axle of the wheel, on one end of which is fixed a shade G, made of tin or any thin metallic substance, by means of a square socket I, fastened on the arms J of the shade and slipped over the end of the axle D, which is made square to fit said socket. The shade G is on one end of the arm and a weight K on the other to balance it. Said shade being then in a vertical position and directly in front of the lights, will when in motion cause the lights to appear and disappear in quick succession of sudden flashes. The other end of the arm is furnished with like wheel, axle, sliding frame, and revolving shade, operating and producing the same effect as those just described.

The arm for carrying around the wheels and to which they are attached is secured to the center vertical shaft, upon which the lights are suspended by a mortise in the center of said arm and a screw L, passing through the arm, by which it can be raised or lowered as a proper adjustment may require. It is made to extend each way in opposite directions and is placed directly under the revolving lights.

The invention claimed, and desired to be secured by Letters Patent, consists in—

The before-described method of rendering the revolving lights of light-houses distinguishable from other revolving lights by means of vertical revolving shades turned by wheels moving on a circular railway, to the axles of which the shades are fixed directly in front of the lights, which when in motion will cause the lights to appear and disappear in quick succession of sudden flashes, as herein set forth, whether produced by the combination of parts here described or any other combination substantially the same.

BENJAMIN F. WILLARD.

Witnesses:

WM. P. ELLIOTT,
EDMUND MAHER.