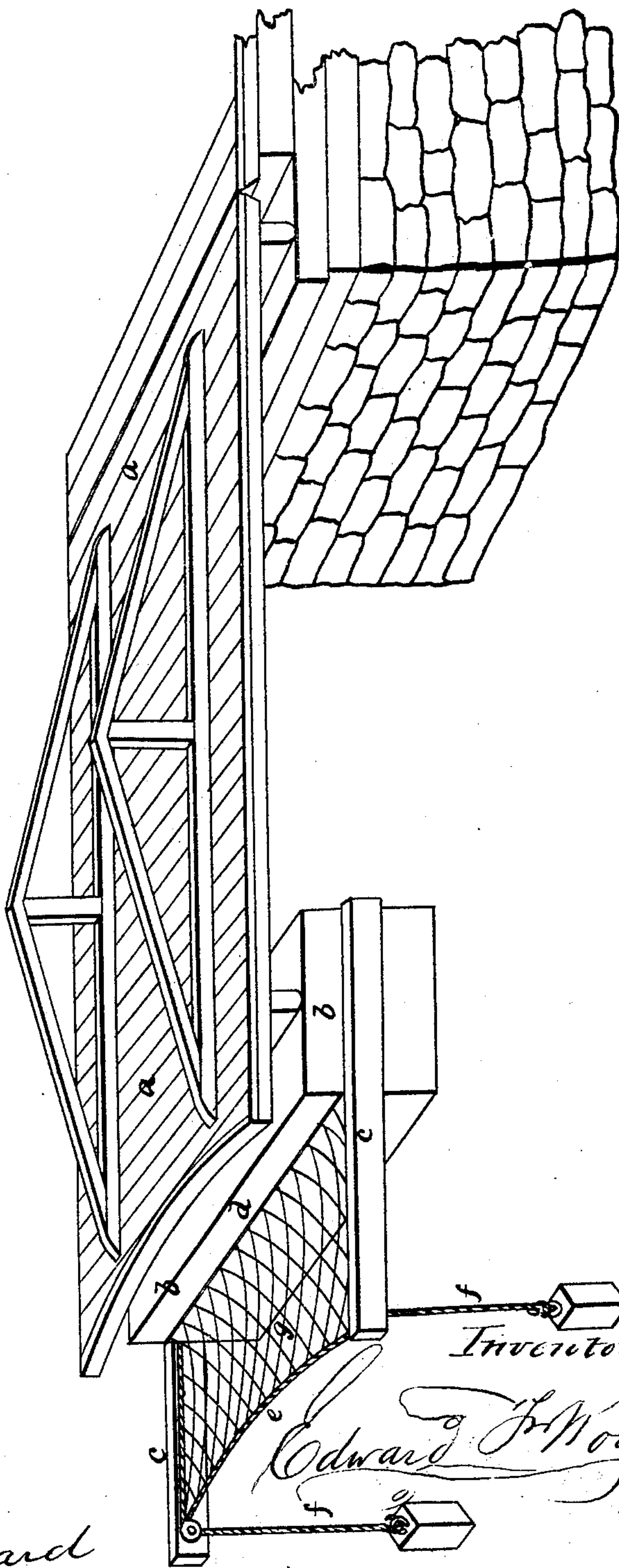


E. F. Woodward.

Ferry Guard.

No. 24,899.

Patented Jul. 26, 1859.



Witnesses

W. B. Hyde
E. F. Woodward

Inventor

Edward F. Woodward

UNITED STATES PATENT OFFICE.

EDWARD F. WOODWARD, OF BROOKLYN, NEW YORK.

SAFETY-GUARD FOR FERRY-WHARVES.

Specification of Letters Patent No. 24,899, dated July 26, 1859.

To all whom it may concern:

Be it known that I, EDWARD F. WOODWARD, of the city of Brooklyn, county of Kings, and State of New York, have invented a new and useful Safety-Guard for Ferries, Wharves, Docks, &c.; and I do hereby declare the following to be a full and exact description thereof, reference being had to the accompanying drawings and the letters of reference thereon.

The nature of my invention consists in the adaptation to the floating bridges, or docks, or wharves, used particularly by ferry boats, of a pliable, self extending apron, of net work, or canvas, or other proper material placed below the foot way, on the outer end or side of the structure, and next the vessel when delivering or receiving passengers, and so arranged that as the boat recedes from the dock the net will be drawn out following the boat for several feet, to a distance beyond which it will be impossible for a person to leap, so that in such case the person would be caught by the apron, and saved from falling into the water; as the boat again enters the dock the apron is collapsed or closed against the wharf by the pressure from the vessel, thus making it self acting.

In drawing, *a* represents an ordinary floating ferryboat-bridge the front end resting upon an air case or float *b*, made to accommodate the height of the bridge to the deck of the boat as the height of water varies by tides. On each side of this air case or in any other proper manner I attach projecting arms *c, c* extending the proper distance for the net or apron, near the outer end of which I place a rope sheave, pulley, loop, or other proper contrivance; and along the front of the float I attach an iron rod, or loops as at *d*. Secured to the float and on the inside of the arms *c, c*, are strong ropes, which pass over or through the sheaves, their outer ends extending several feet beyond, and to which weights of proper specific gravity are secured as seen at *f, f*, and which are intended to extend the apron and support any weight which accident might cast thereon. A transverse rope is secured to each of the extension ropes as seen at *e*. The net or apron *g*, is attached to the rope *e*, the rod or loops *d*, and the side ropes in position as

seen in the drawing. In this case the weights are intended to descend into the water when the apron is extended, but they may be arranged by passing the ropes *f, f*, under the sheave and passing upward and over an intermediate pulley so that the weights will be always suspended above water; and in some cases the apron may be made to work out and in without the arms *c, c*, by having the sheave attached to the sides of the dock or slip.

It will be seen that in action as the boat presses in toward the bridge she first strikes the rope or bar *e*, and closes the apron against *d*, and as she leaves the dock the apron will be distended by the weights to the position as seen in the drawings, which should be about ten or twelve feet.

The frequent loss of life, and more frequent inconvenient "duckings," at the ferries around the city of New York prove the deception to the eye, of distance, to the hurried and imprudent leaper; often this deception is occasioned by the depressed angle at which the bridge rests at low tide; but more frequently by miscalculating the speed of the receding boat. No conspicuously placed warnings, nor watchful attendants, can wholly prevent these casualties; nor with the law required "life lines," skilfully contrived body recovering apparatus, and prompt exertions at mid-day are sufficient to save life in frequent cases, as the swift running tide sweeps the victim (often an expert swimmer) under the "float," or the adjacent wharf, exhausted, and for the time beyond reach, until too late. Often the impulse of the leap causes a blow upon the head or chest, which produces insensibility and the body does not appear on the surface at all. Such are the facts which induce this invention; and as I do not confine myself to the precise arrangement of the several parts as herein described,

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

The employment of the apron *g*, for the purposes set forth.

EDWARD F. WOODWARD.

In presence of—

J. B. HYDE,

E. H. WOODWARD.