

Eltinge & Broadhead,

Vib. Propeller.

No. 110,908.

Patented Jan. 10. 1871.

Fig. 1

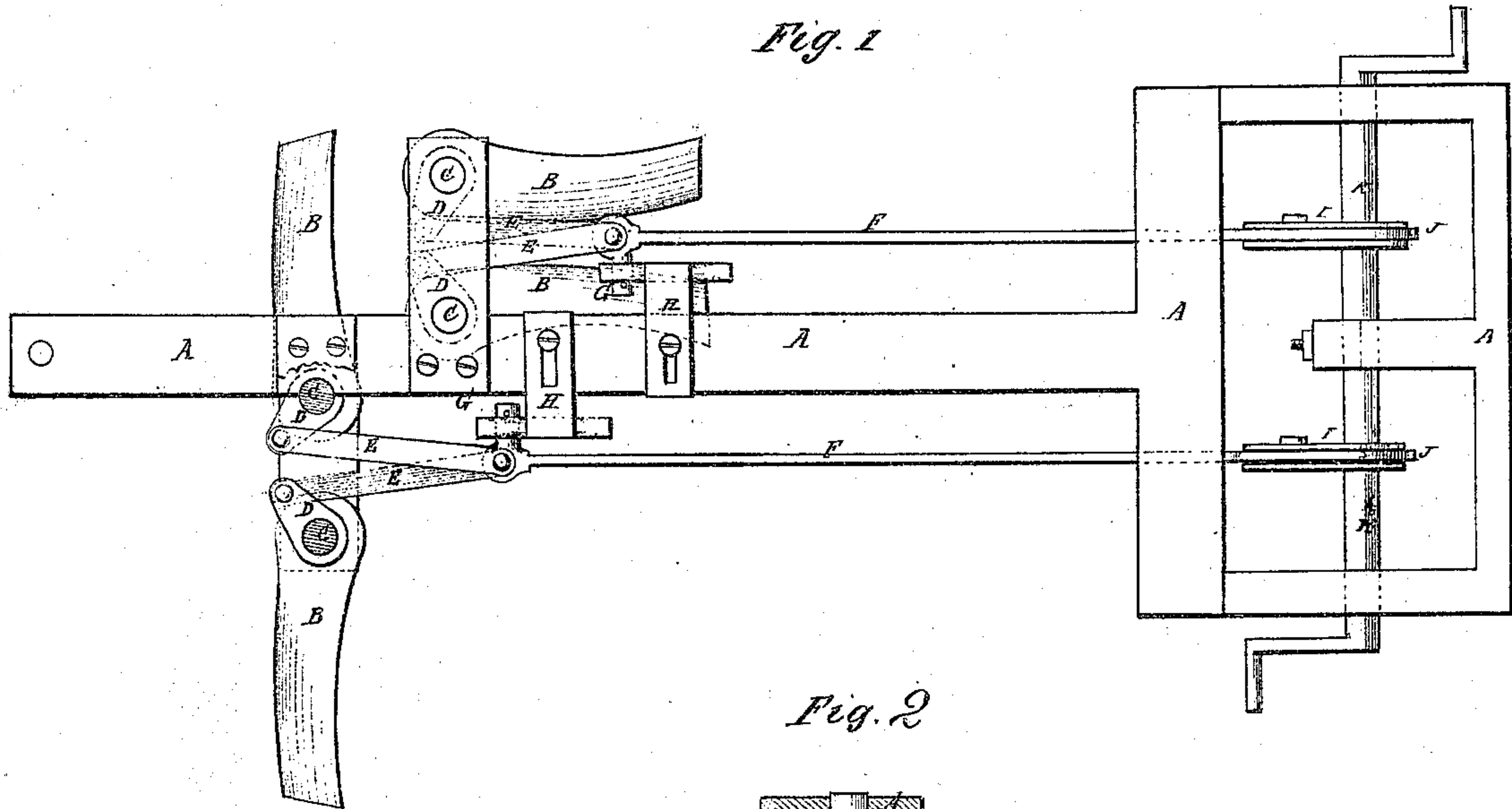


Fig. 2

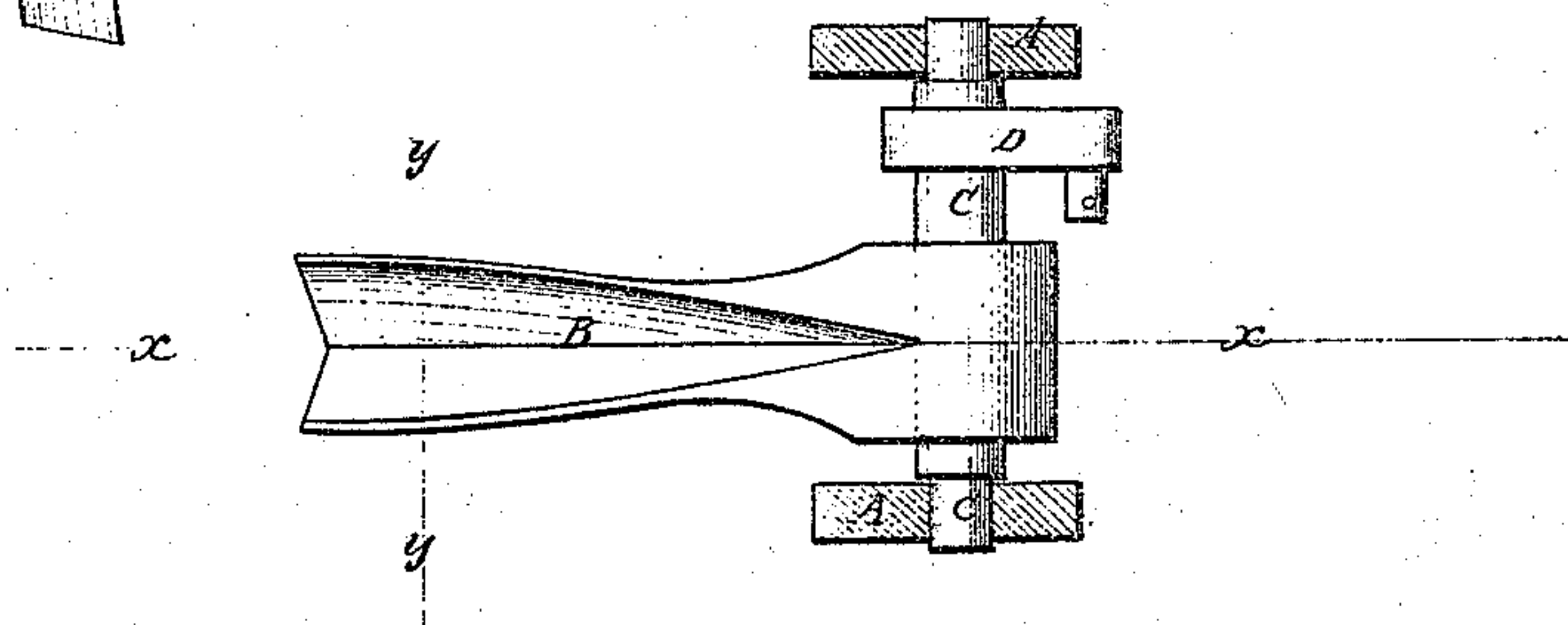


Fig. 3

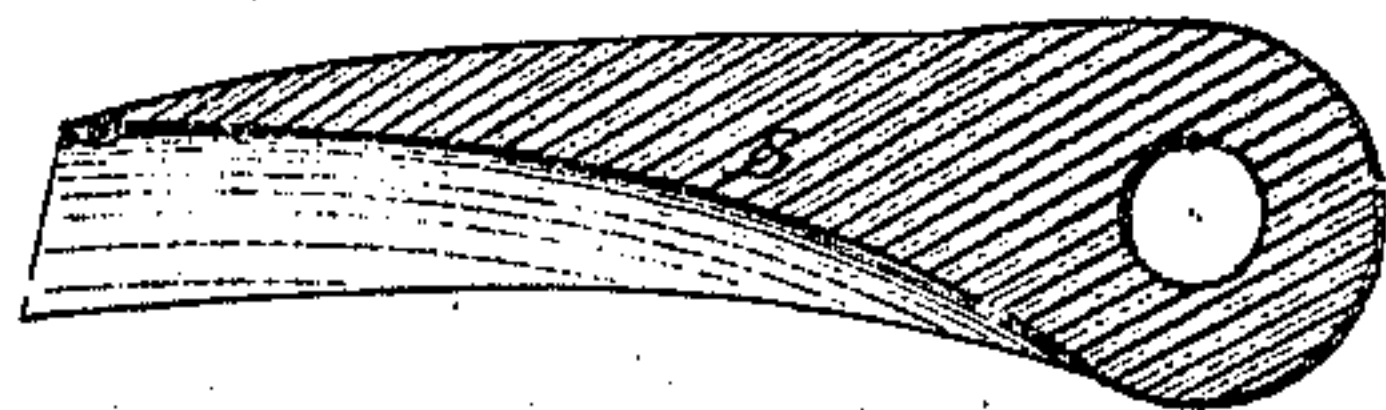


Fig. 4



Witnesses:

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UNITED STATES PATENT OFFICE.

EDGAR ELTINGE AND JOHN C. BRODHEAD, OF KINGSTON, NEW YORK.

IMPROVEMENT IN PROPELLERS.

Specification forming part of Letters Patent No. **110,908**, dated January 10, 1871.

To all whom it may concern:

Be it known that we, EDGAR ELTINGE and JOHN C. BRODHEAD, of Kingston, in the county of Ulster and State of New York, have invented a new and useful Improvement in Propellers; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming part of this specification, in which—

Figure 1 is a top view of our improved device. Fig. 2 is a detail side view of one of the paddles and its shaft and crank. Fig. 3 is a detail longitudinal section of one of the paddles, taken through the line *x x*, Fig. 2. Fig. 4 is a detail cross-section of the same, taken through the line *y y*, Fig. 2.

Similar letters of reference indicate corresponding parts.

Our invention has for its object to furnish an improved device for the propulsion of vessels, which shall be so constructed as to utilize a larger percentage of the power applied for the propulsion of the vessel than is possible with the paddle-wheels and screws as heretofore constructed and operated, and which shall at the same time be simple in construction; and it consists in the construction and combination of the various parts of the device, as hereinafter more fully described.

A represents the frame-work of a vessel. B represents the paddles, one, two, or more pairs of which may be used, and which may be arranged upon a line with the keel, or upon the sides of the vessel, and at the stern, bow, or other parts of the said vessel, as the number of paddles to be used and the circumstances of the case may require.

The paddles B are arranged to work horizontally, and are deeply grooved upon their forward or working sides, and made V or wedge shaped upon their other sides, to cause them to take a firm hold upon the water in making a stroke, and to move through the water with the least possible resistance when returning for another stroke. The outer ends of the paddles B may be left open, as shown

in the drawing, or they may be closed, as may be desired. In cases when ice or other floating solid substances are liable to be encountered, it is desirable to make them open; but where the water is free from such floating substances they may be made closed. The inner ends of the paddles B are keyed or otherwise securely attached to vertical shafts C, the journals of which work in bearings in the frame-work A of the vessel.

To each shaft C is keyed or otherwise attached, or upon it is solidly formed, a crank, D, to the crank-pin of which is pivoted the ends of the connecting-bars E. The other ends of the two bars E of each pair of paddles B are brought together, and are pivoted to the end of the bar F, to which end of the said bar F is attached a pivot, G, which works and slides in a horizontal slot in the arm or support H, which is adjustably attached to the frame-work A, as shown in Fig. 1. The other end of the bar F is connected with an eccentric, I, by a strap, J, in the ordinary manner, so that the said bar F may be moved back and forth to work the paddles B by the revolution of the said eccentric.

The eccentric I is attached to a shaft, K, which receives its motion from a steam-engine in the ordinary manner. One or more pairs of the paddles B should be placed in a reversed position, for use in backing the vessel when required.

Reversed paddles may be used as a rudder.

Having thus described our invention, we claim as new and desire to secure by Letters Patent—

The combination of the paddles B, arranged in pairs, shafts C, crank-arms D, bars E, pivot G, guide-support H, bar F, and eccentric I with each other and with the driving-shaft K and frame-work A of a vessel, substantially as herein shown and described, and for the purpose set forth.

EDGAR ELTINGE.
JOHN C. BRODHEAD.

Witnesses:

CHAS. BRODHEAD,
WM. KEMA GREEN.