ELLICOTT & ABBOTT.

Balance Scale.

No. 6,097. **Patented Feb. 6, 1849.**

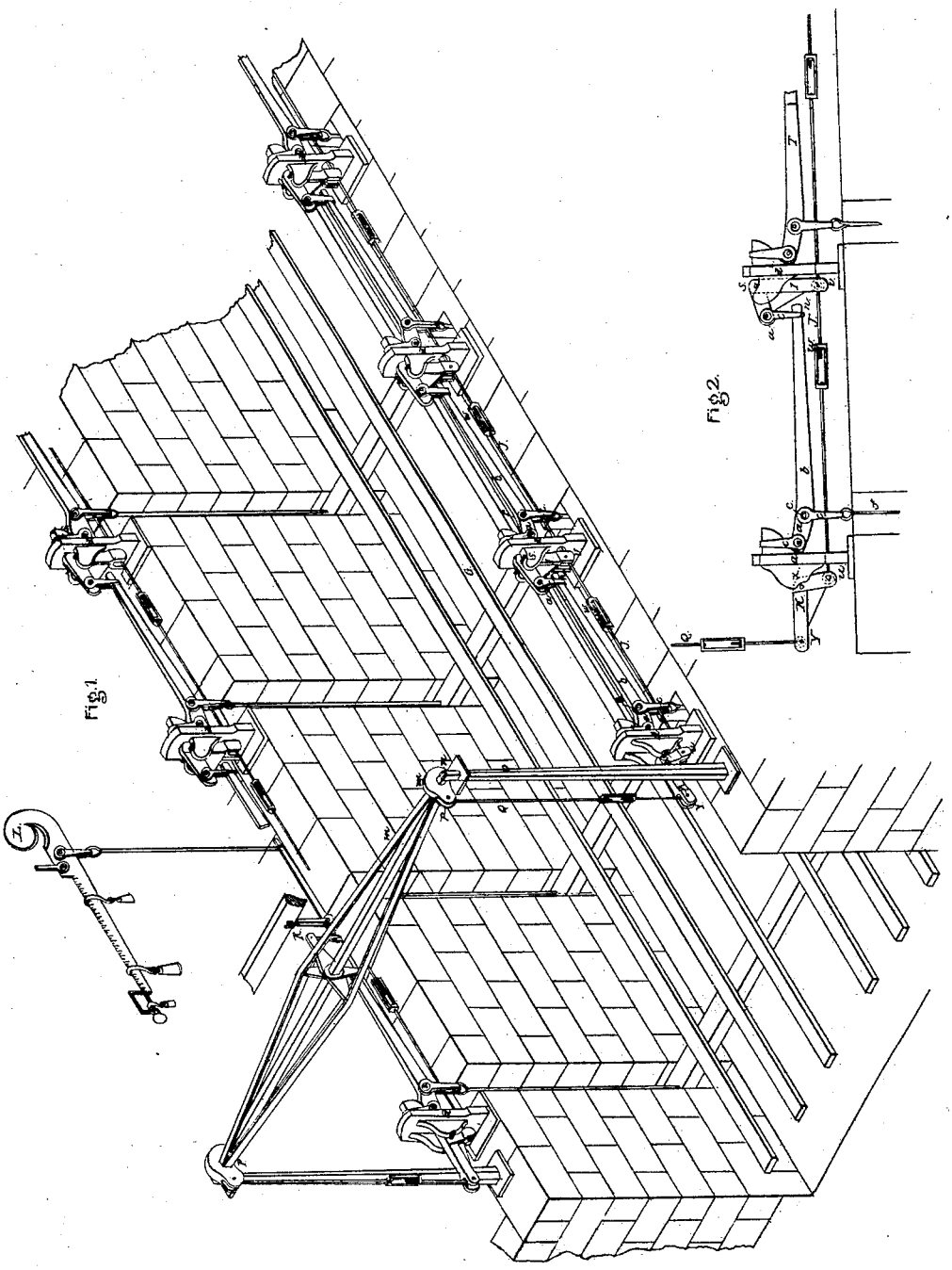

Fig. 1.

Fig. 2.

UNITED STATES PATENT OFFICE.

ELY ELLICOTT AND SAMUEL A. ABBOTT, OF PHILADELPHIA, PENNSYLVANIA.

LEVEL-SCALE FOR CANALS, RAILROADS, &c.

Specification of Letters Patent No. 6,097, dated February 6, 1849.

To all whom it may concern:

Be it known that we, ELY ELLICOTT and SAMUEL A. ABBOTT, both of the city and county of Philadelphia and State of Pennsylvania, have invented a new and useful Improvement in Lever-Scales to be Used for Locks, Docks, Canals, Railroads, &c; and we do hereby declare that the following is a full, clear, and exact description of the construction and operation of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1, is a perspective view, and Fig. 2, is a sectional view of the suspended levers, &c.

The nature of our invention consists in placing upon each side of the top or base of the lock, dock, canal, or other desired place, two chairs or supports at proper distances apart, to keep in position the suspended levers (which are simple levers having fulcrums) and running parallel to said lock, dock, railroad, &c, which levers give the first action to the scale, and by the multiplication of said chairs and levers, the scale may be extended to any required length.

To enable others skilled in the art to make and use our invention we will proceed to describe its construction and operation.

a (Fig. 2) is a fulcrum on the main lever *b*, being suspended by a clevis *c* to the first chair *d; e* second fulcrum of each main lever *b* connected by a clevis and rod *f*, to the cradle or bridge *g*, (Fig. 1) or other fixture, and suspending the same. On the long end of lever *b* is a groove *h* across said lever, through which connects the short end *a* of the angular or bell crank lever *i* by means of the clevis *c* having edges or eyes, as the case may be.

d^2 is a second chair which supports the angular lever *i* by metns of the fulcrum *s*.

T is a second main lever, supported in the same manner as the first lever *b*.

J is a rod running parallel to the levers *b* and T, having corresponding eyes at *u* and *v*. The said rod J, having inserted in it between said chairs, a swivel, screw, and nut W or screw buckle, for the purpose of lengthening or shortening it.

At one end of the scale is required a reversed angular lever K, for the purpose of reversing the action of the main levers *b* and T, and to give the proper action to the beam *l;* (Fig. 1) the short end of said reversed angular lever K, is connected with the extreme end of said rod J at *u*. The main fulcrum *x* of lever K is supported by the chair *d;* the long end Y of said lever K is connected by rod Q to the rock lever *m* (Fig. 1) which passes across above the top of said lock, dock, canal &c, or other required place for said scale. Said rock lever having edges *n* at the ends, to be supported by columns O or otherwise, placed upon the top or base of said lock &c. The arms P at each end of the rock lever *m* extending any proper distance from the body of said rock lever *m* to connect by rod Q with the long end of said angular lever K at Y. On the opposite side of said rock lever *m*, at or near the center, is another arm R by which leverage may be gained if desired; which arm R is to be connected directly with the graduated beam L or to other levers, and then by a vertical rod to the beam L or said rock lever may be dispensed with, and said connection can be made by simple levers extending equidistant, or otherwise, from said columns or other supports, either above or below the scale, and thence to a graduated beam. Or, the whole may be arranged by placing a graduated beam on each side of the lock, railroad &c, and connected with the angular lever K.

We claim nothing new in principle from the original knife edge lever or platform scale, first made by Thomas Ellicott (now deceased) and since by ourselves and others. But—

What we claim as our invention, and desire to secure by Letters Patent is—

1. The combination with each other of two or more simple horizontal levers, placed on each side of the top or base of lock, canal, dock, rail road, or other desired place, and running parallel thereto, by which means the scale may be extended to any length from the smallest to the greatest, with entire accuracy, and by the multiplication of said levers can be obtained a scale, strong enough for any purpose, the whole operating substantially as above described.

2. We also claim the connection between the said parallel levers and the graduated beam as above described, by means of a rod or rods and bell cranks.

ELY ELLICOTT.
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Witnesses present:
FRANCIS KEYSER,
GEO. F. MCCLEANE.