(No Model.)

R. E. McCLELLAND.

BALANCE SCALE.

No. 475,792. Patented May 31, 1892.

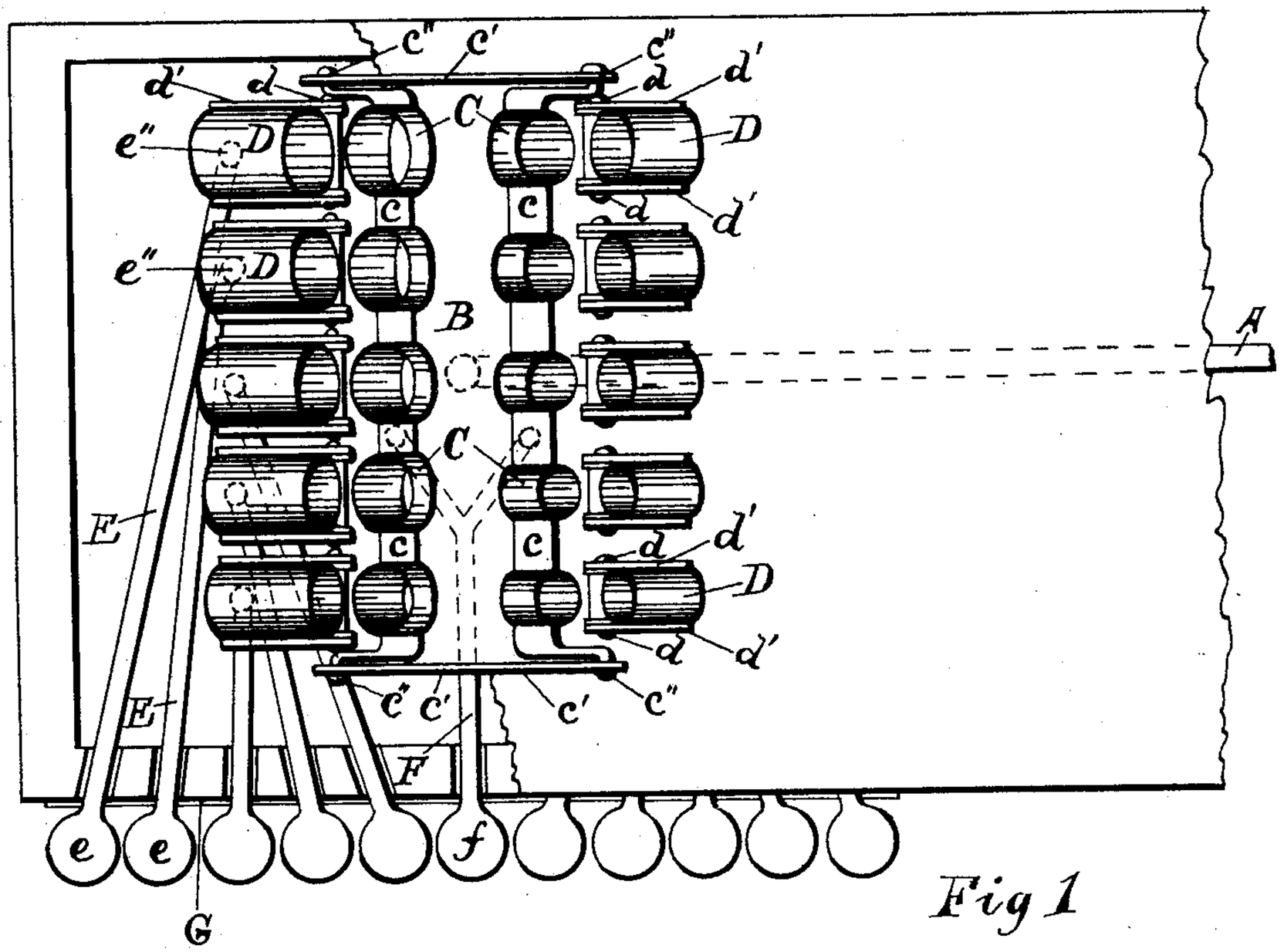

Fig 1

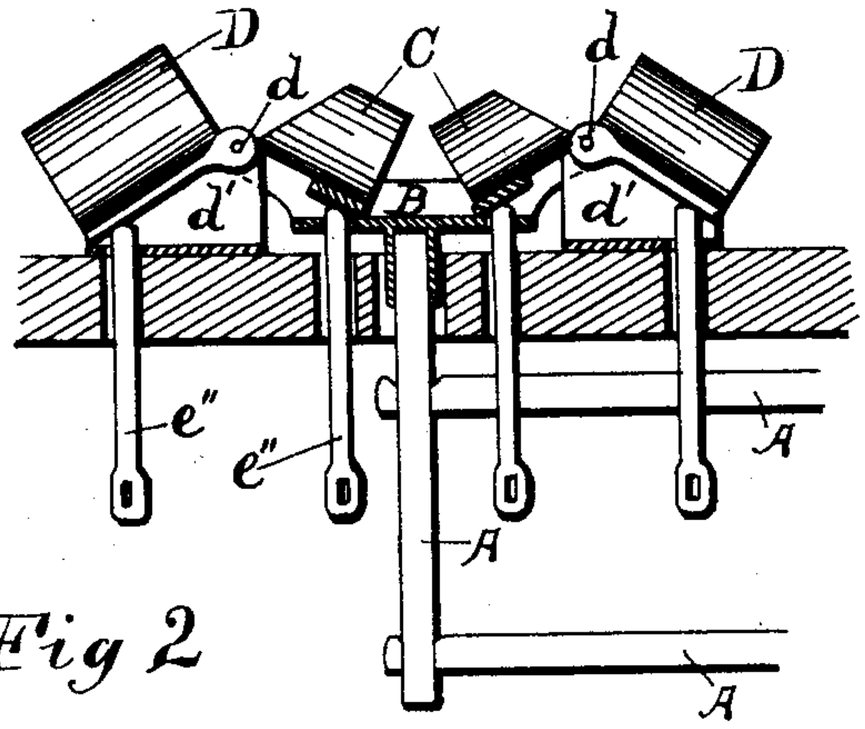

Fig 2

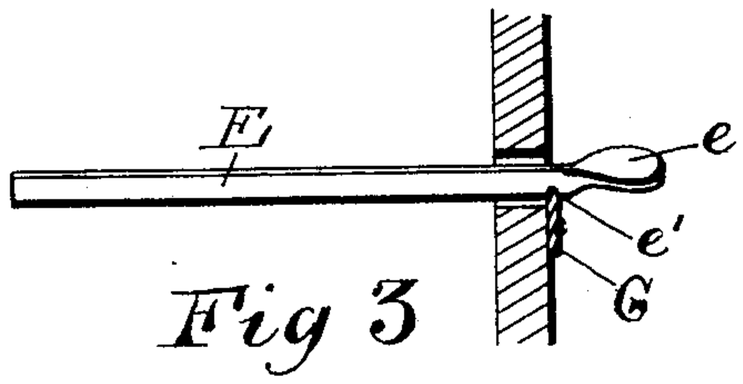

Fig 3

Witnesses:-
Edword Furrow
R. H. Bullard.

Inventor:-
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for S. A. Bullard
atty

UNITED STATES PATENT OFFICE.

ROBERT E. McCLELLAND, OF WILLIAMSVILLE, ILLINOIS.

BALANCE-SCALE.

SPECIFICATION forming part of Letters Patent No. 475,792, dated May 31, 1892.

Application filed November 23, 1891. Serial No. 412,718. (No model.)

To all whom it may concern:

Be it known that I, ROBERT E. McCLELLAND, residing at Williamsville, in the county of Sangamon and State of Illinois, have invented a new and useful Improvement in Balance-Scales, of which the following is a specification.

My invention relates to improvements in scales which have a balancing-arm with a scale-pan on either end, one of which is used for the weights and the other for the articles to be weighed.

It consists of a mechanism by which the placing of the weights on the scale-pan or their removal is accomplished easily and rapidly by striking the finger on index-plates which control the position of the weights.

My method of constructing and operating the device is shown in the accompanying drawings, in which—

Figure 1 is a top view of the scale, with a part broken away to show the working parts. Fig. 2 is a section across the weight-pan. Fig. 3 shows an index-plate and bar with which the weights are operated.

Similar letters refer to similar parts throughout the several figures.

A is the scale-beam, on which the scale-pan rests, as in any ordinary balance-scale.

B is my weight-pan, supported on the end of A in the ordinary way.

C C are movable pockets in the weight-pan B, all fastened to the pieces *c c*, which work on pivots *c'' c''* in the scale-pan. There are as many of these pockets as there are weights necessary for the proper use of the scale and are arranged in two nests, one on each side of the bearing on the beam A.

D D are weight-pockets co-ordinate with those of the weight-pan, and each is movable on an axis *d d*, working in stationary plates *d' d'*.

E E are bars, at one end of which are finger-plates *e e* and at the other end are connected with arms *e'' e''*, which are situated under weight-pockets D D. The bars E E have small notches *e'* in their lower side, near the end having the finger-plate.

F is a bar, which has on one end a finger-plate *f* and at the other is divided into two arms, the ends of which work in arms in a way similar to bars E E.

G is a plate at the front of the case, on which the bars E E rest in the notches *e'*.

The use of other letters will be explained when used in this specification.

The object of my invention is the rapid and accurate handling of the weights in the pans of small scales, and I do this in the following manner: The weights being in the weight-pockets D D when the scale is not in use, they are placed in the corresponding pockets of the scale-pan by pressing on the finger-plates *e e* of the bars E E. By pressing on the finger-plate *e* the bar E rests on the plate G as a fulcrum and the farther end rises, carrying the attached piece *e''* against the lower side of the pocket D, which is thrown up and forward about its axis toward the pocket C in the weight-pan. The pocket D is carried to such a height that the weight rolls by gravity into the pocket C. This movement can be applied to one or several of the weight-pockets at once, for they work independently of each other, and just the amount of weight desired in the weight-pan may be provided. When there is no further use of the weights in the weight-pan, the weights may all be returned to the weight-pockets at once by striking the finger-plate *f* on the bar F, which acting on the plate G as a fulcrum, similarly to the arms E E, the ends of the arms strike on the under side of the plates *c c* and lift all the pockets fastened on *c c* to such a height that the weights, being globular, will roll by gravity into the weight-pockets D D, where they were at the beginning. In this way the weights may be manipulated without touching them with the fingers and are in plain view when in the scale-pan.

Having thus described my invention, what I believe to be new, and desire to secure by Letters Patent, is—

1. In a scale, the scale-pan B, in combination with the weight-pockets D D, the bars E E, the plate G, and the bar F, substantially as and for the purposes set forth.

2. The combination, in a balance-scale, of a scale-pan B, the weight-pockets D D, the bars E E, the plate G, and the bar F, all substantially as shown, and for the purposes set forth.

ROBT. E. McCLELLAND.

In presence of—
EDWARD FURROW,
R. A. BULLARD.