W. D. GUSEMAN.

Pendulum Scales.

No. 24,023. Patented May 17, 1859.

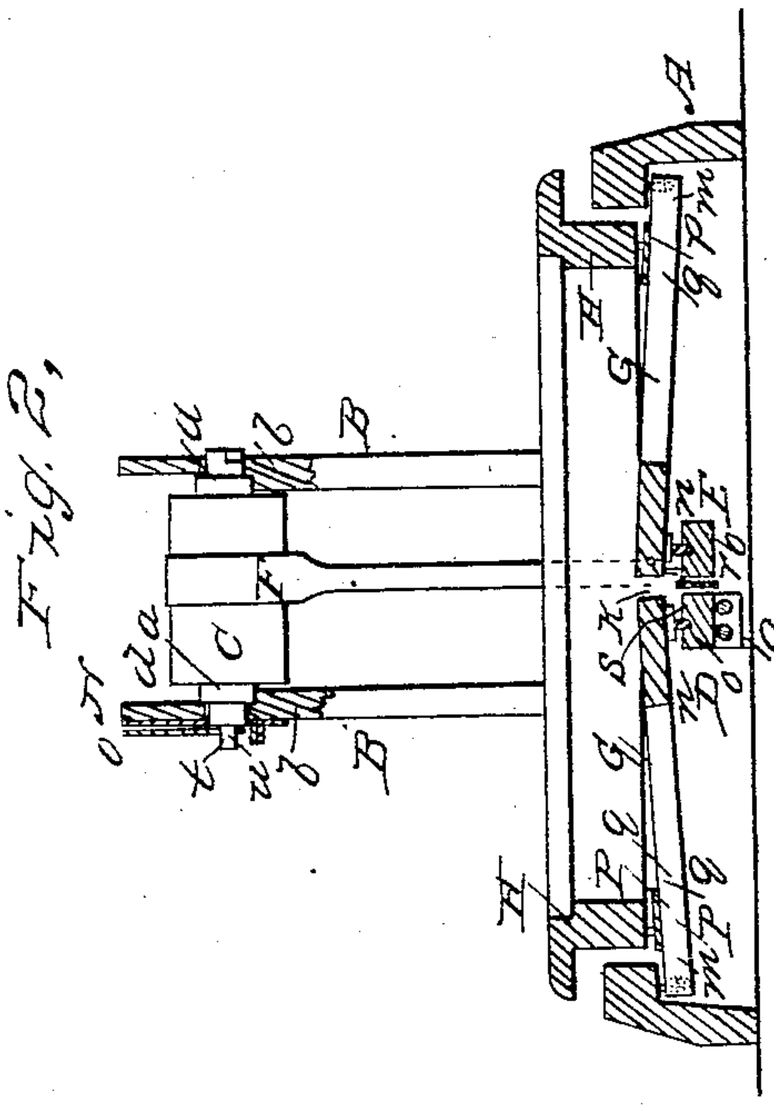

Fig. 2,

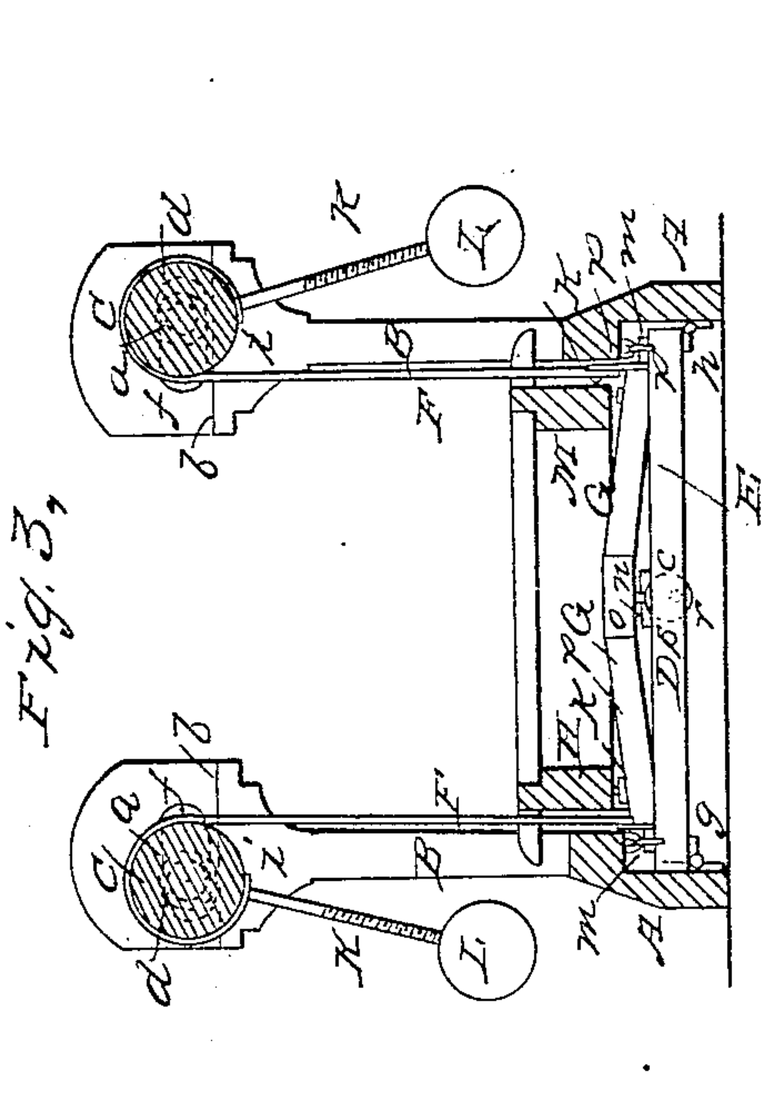

Fig. 3,

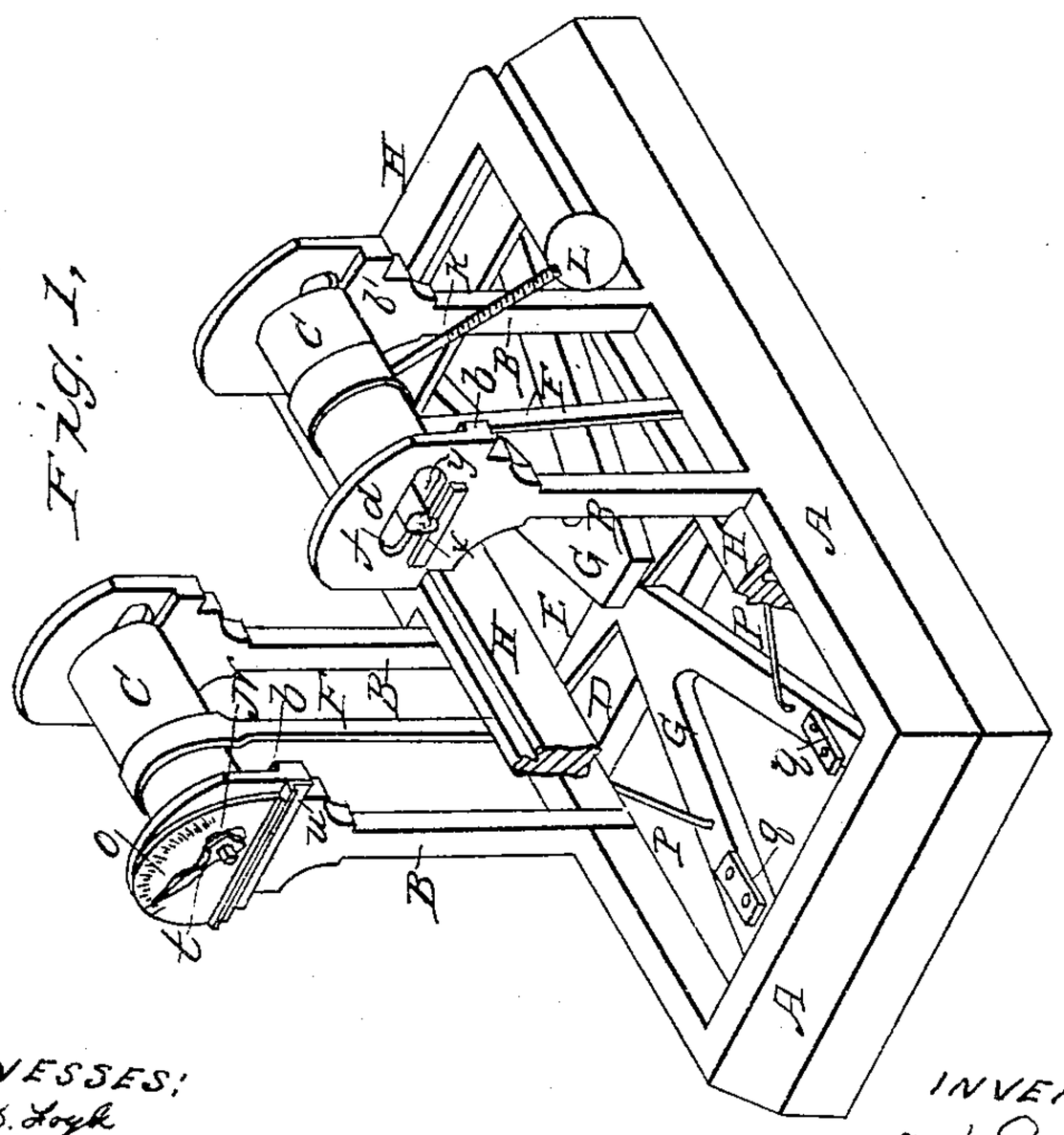

Fig. 1,

WITNESSES:
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UNITED STATES PATENT OFFICE.

WILLIAM D. GUSEMAN, OF MORGANTOWN, VIRGINIA.

WEIGHING-SCALE.

Specification of Letters Patent No. 24,023, dated May 17, 1859.

To all whom it may concern:

Be it known that I, WILLIAM D. GUSEMAN, of Morgantown, in the county of Monongalia and State of Virginia, have invented certain new and useful Improvements in Weighing-Scales; and I 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 accompanying drawings, in which—

Figure 1, represents a perspective view of said scales. Fig. 2, represents a longitudinal vertical section through the same. Fig. 3, represents a vertical cross section through the same.

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

A, represents a strong frame of timber, which supports the entire weighing apparatus.

B, represents four standards, which are secured to the stationary frame A, and which serve to support the bearings of two drums C, the bearing of the drums C, consist in rollers *a*, which rest upon the planes *b*, and which when the drums are moved, can roll freely over said planes without causing any friction; the motion of the drums and rollers is limited by the ends *d*, of said rollers playing in the slots *f*, of the standards B.

D, and E, represent two timbers which are hinged respectively at *g*, and *h* to the inner sides of the frame A, and the ends of which are suspended to the cords, chains, or bands F, by means of the hooks *k*. The bands F, pass around the drums C, and are fastened to them at *i*.

G, represents two levers of the shape represented in Fig. 1; they are hung to the frame A, as represented at *m*, while their narrow ends are supported by the cross pieces D, E; these ends are provided at their lower sides with edges *n*, which rest upon the blocks *o*, of the cross pieces D, E, for the purpose of reducing the friction to the smallest surface.

H, represents the platform frame, on which the article to be weighed is placed; the frame H, is supported by the levers G, and rests thereon by means of the four pins *p*, the round ends of which fit into suitable sockets of the plates *q*, which latter are secured to the levers G.

The two levers D, and E, are coupled together at their center by means of a disk *r*, which is hung upon the two pins *s*, and *c*, of the levers D, E, for the purpose of causing the two levers to act simultaneously if only one of them is affected by an article placed upon one end of the platform H.

K, represents pendulum rods, which are secured to the drums C, in the positions represented in Fig. 3; the balls L, of these pendulum rods can be adjusted to any desired position by means of screw threads cut upon said rods or otherwise, and by means of these adjustable balls, the scales can be balanced, as well as regulated to weigh light or heavy weights.

N, represents a dial plate which is graduated and on which the number of pounds are indicated by means of an index O; the latter is permanently secured to the square head *t*, of the roller *a*, but as said roller has no stationary bearing, but rolls over the plane *b*, it follows that the dial N, must move in the direction of the roller, if the number of pounds should be indicated correctly by the index O. To accomplish this, the dial plate is hung loosely upon the part *d*, of the roller *a*, and its bend, or lower edge is supported by a corresponding ledge *u*, on which it may glide in its reciprocating motion. The scale may be provided with four such dials, one at each end of the shafts, and they may be graduated in such a manner as to serve respectively for lighter or heavier weights; thus for instance, on the first may be marked the number of pounds from 1 to 10; on the second from 10 to 20, and so forth.

If the scales are intended to be used for light weights only the arrangement of the rollers *a*, can be so modified that their axes may be stationary; in that case, I use knife edges for said roller to rest upon at both its ends, but these are constructed in such a manner that their edges shall point upward such as represented at *x*, in Fig. 1, the end of the roller is cut out at its lower side to form a triangular recess *y*, the uppermost point of which lies in the axis of the roller. This arrangement differs materially from the knife edges heretofore used, as those are pointed downward and are not protected

against any dust or dirt lodging around them, while mine rests in a recess and is effectually protected against anything lodging and obstructing the same. The pendulum rod, weight or lever, or its equivalent must, it will be perceived vibrate below the roller or shaft C, or its equivalent to effect the object.

The operation of these scales is as follows:—When an article is placed upon the platform H, the levers G, are pressed down but are prevented from moving sidewise by the braces P, the levers D, E, are now operated and turn on their hinges *g*, and *h*, and draw the bands F, downward, causing the drums C, to turn and the rollers *a*, to roll over the planes *b*, while the dials N, move on the ledges *u*, in the direction of the rollers and the index indicates the number of pounds on each dial in tens, hundreds, etc.

Having thus fully described the nature of my invention, what I claim therein as new and desire to secure by Letters Patent is—

1. In a weighing apparatus, a pendulum drum or roller, which has in addition to a rolling motion, a traveling movement, substantially as and for the purposes described.

2. I also claim, in combination with a rolling and traveling drum or roller, and an index, a traveling vernier or dial, substantially as described.

3. I also claim the combination of the horizontal lever G, of a platform scale, with the pendulum drums C, and bands F, substantially in the manner and for the purpose herein described.

W. D. GUSEMAN.

Witnesses:
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