

(No Model.)

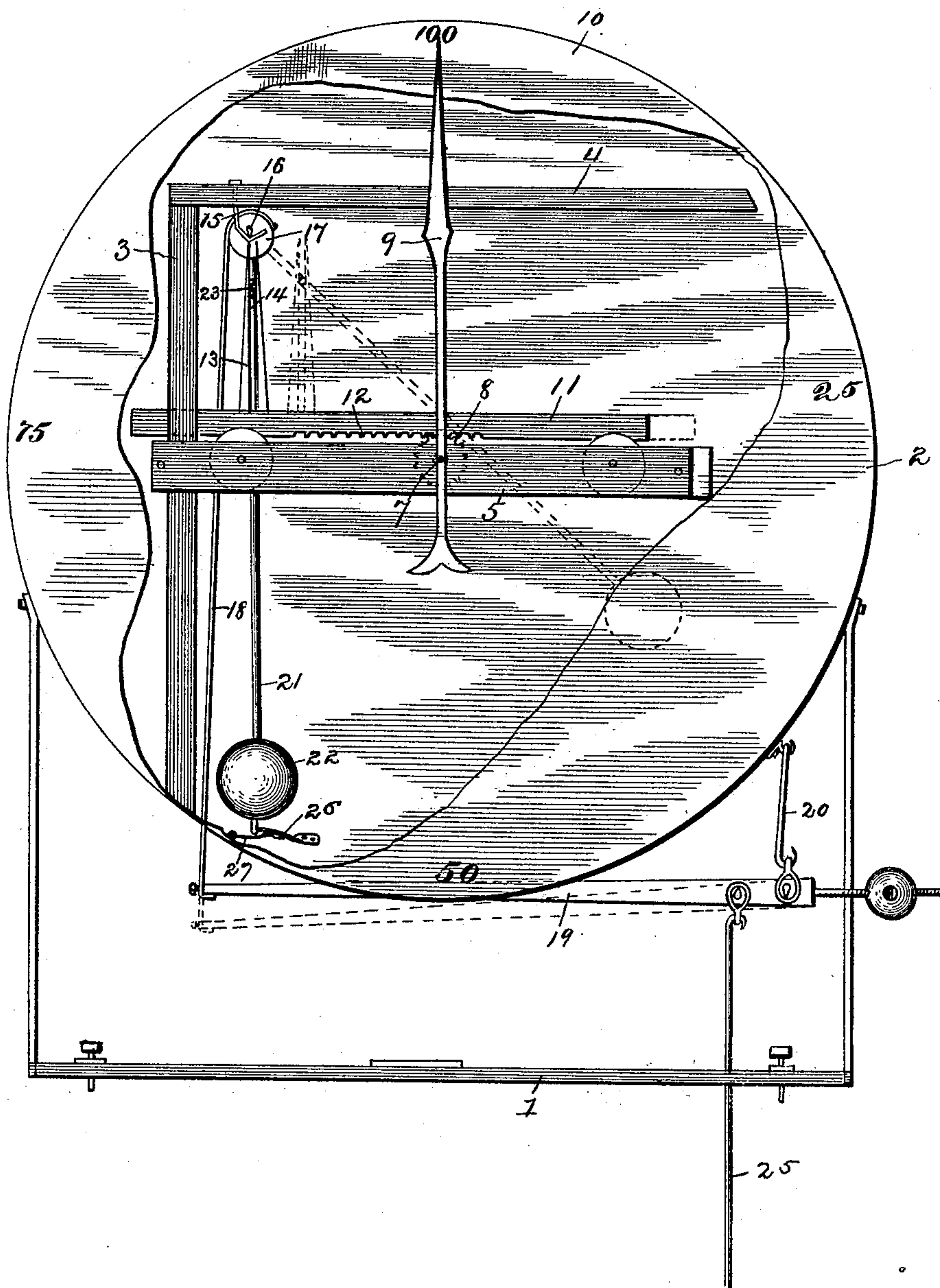
2 Sheets—Sheet 1.

W. J. GRAVES.
PENDULUM SCALE.

No. 518,545.

Patented Apr. 17, 1894.

Fig. 1.



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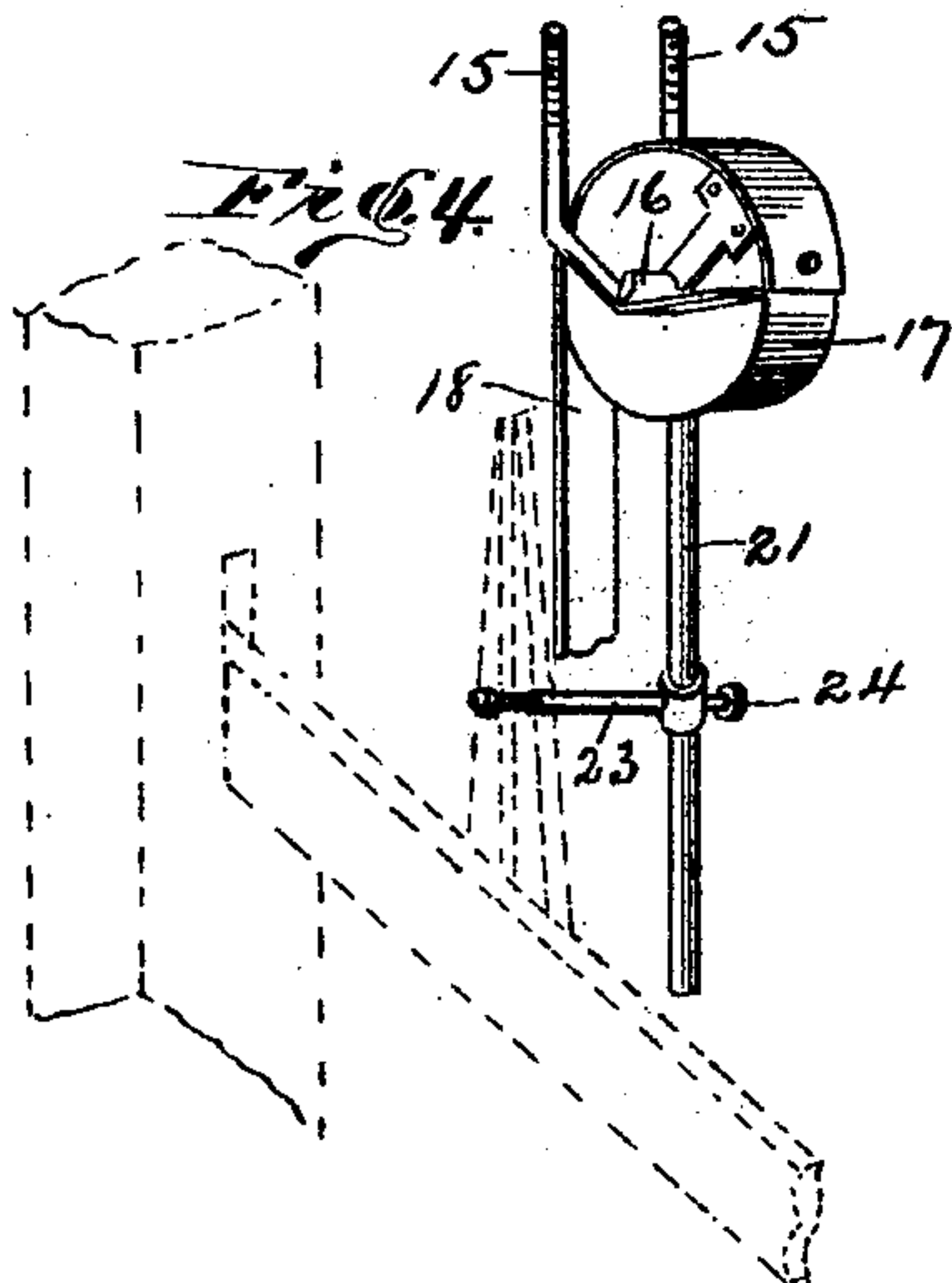
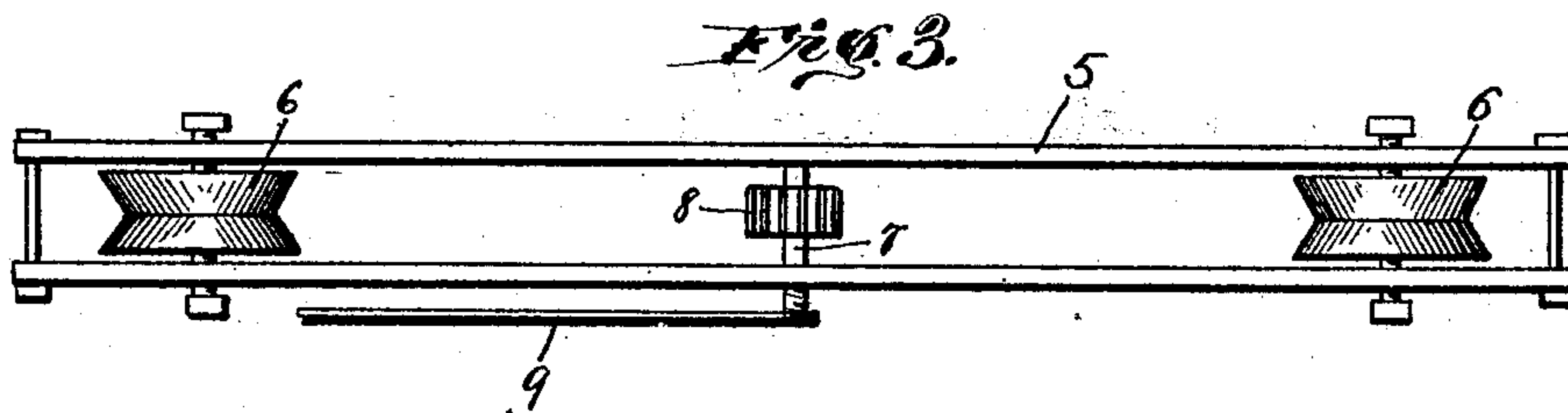
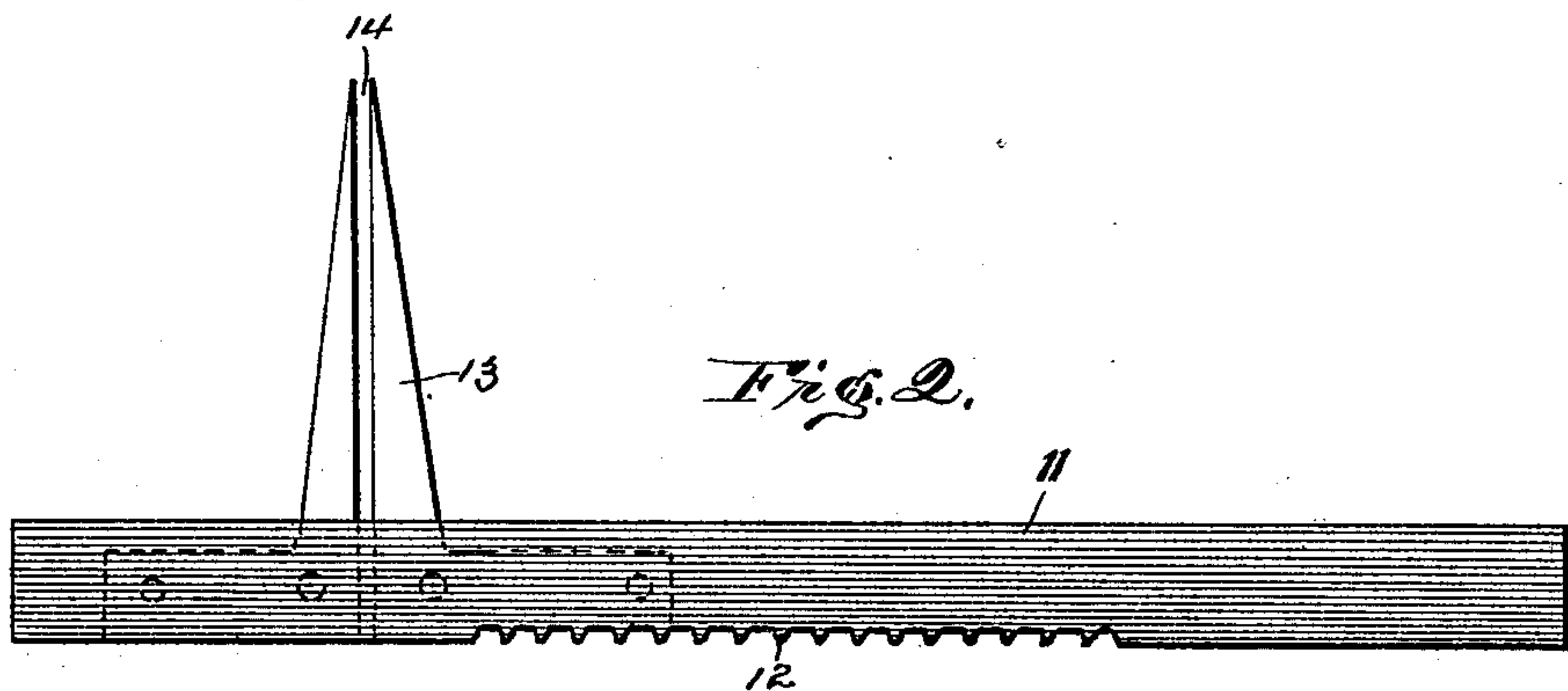
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2 Sheets—Sheet 2.

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No. 518,545.

Patented Apr. 17, 1894.



Witnesses

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UNITED STATES PATENT OFFICE.

WILLIAM J. GRAVES, OF GAINESVILLE, TEXAS.

PENDULUM-SCALE.

SPECIFICATION forming part of Letters Patent No. 518,545, dated April 17, 1894.

Application filed June 22, 1893. Serial No. 478,419. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM J. GRAVES, a citizen of the United States, and a resident of Gainesville, in the county of Cooke and State of Texas, have invented a certain new and useful Improvement in Scales, of which the following is a description.

This invention relates to an improvement in scales.

10 The object of the invention is to produce a self-registering scale which shall be composed of but few parts, and which will be accurate and reliable in use, and not liable to get out of repair from constant employment.

15 With this object in view, the invention consists in the novel construction and combination of parts of a self-registering scale, as will be hereinafter fully described, and pointed out in the claims.

20 In the accompanying drawings forming a part of this specification, and in which like numerals of reference indicate corresponding parts: Figure 1, is a front elevation partly in section, showing the operative parts of the scale. Fig. 2, is a like view of a rack-bar for actuating the hand or pointer. Fig. 3, is a top plan view, showing a frame or support for the said rack-bar, and also the pinion on the hand-staff with which the rack-bar meshes. Fig. 4, is a perspective view of a band-pulley provided with knife-edge bearings to support the rod and weight that actuate the rack-bar.

Referring to the drawings, 1 designates a frame designed to be secured upon a suitable supporting-platform, (not shown) and to which the shell or casing 2, inclosing the scale mechanism, is secured.

Within the casing 2, is rigidly secured a standard 3, carrying at its upper end an arm 4.

40 Upon the standard 3, is supported a rectangular frame 5 (Fig. 3) within which near each end is journaled a grooved sheave 6. The two sheaves are arranged in parallel relation with each other—that is, the bottoms of the grooves are to be in exactly the same horizontal plane.

At a point within the frame 5, midway of the two sheaves is journaled a shaft 7, carrying a stationary pinion 8, and at its outer end 50 a pointer or hand 9 designed to traverse a dial

10, which may be suitably scaled from one pound to as high a number of pounds as may be desired.

Working within the grooves of the sheaves 6 is a bar 11, a portion of the under surface of which is provided with serrations or teeth 12, designed to engage with the pinion 8, as will be clearly seen by reference to Fig. 1.

At a point near one end of the rack-bar 11 are secured two uprights 13 which are slightly separated to leave a vertical slot 14, the function of which will appear later on.

The arm 4, to which reference has been made, sustains near its point of attachment to the standard 3, two hangers 15, the lower ends of which are arranged at approximately right angles to the stems of the hangers and are substantially V-shaped in contour to form supports for knife-edge bearings 16 carried by a band-pulley 17. Upon the periphery of the pulley is firmly secured one end of a flexible metallic bar or band 18 the other end of which is secured to the scale-beam 19, the latter being supported from the casing 2 by a hanger 20.

Attached to the under side of the pulley 17 is a pendulum 21, carrying a weight 22, which performs the same function in this scale as the spring, or the weight on the beam of an ordinary platform scale. Upon the rod 21 is adjustably mounted an arm 23, which works in the slot 14 between the uprights 13, a set-screw 24 serving to hold the arm at any desired adjustment when the scale is primarily adjusted.

From the foregoing description the manner of the operation of this scale will be apparent. When weight is applied to the platform (not shown) the beam 19, through the rod 25 is drawn down, as shown in dotted lines in Fig. 1, which movement, through the medium of bar 18, rotates the pulley 17. This latter movement swings the weight 22 outward, and at the same time, through the medium of arm 23, causes the rack-bar to move forward, rotate the pinion 8, and thus move the pointer over the dial a distance sufficient to register the weight of the article on the scale.

If it should be desired to lock the scale against use, a spring 26 is employed which is

secured to the rear wall of the casing and has its free end normally out of the path of travel of the lower end rod 21. Pivoted at a point near the free end of spring 26 is an arm 27, 5 which is adapted to be turned up to throw the spring to position shown in Fig. 1, so as to allow it to contact with the rod 21, and thus prevent its vibration.

Having thus fully described my invention, 10 what I claim as new, and desire to secure by Letters Patent, is—

1. In a scale, the combination of a frame supporting sheaves near each end, a shaft journaled in the frame and carrying a pinion 15 and a pointer, a rack-bar working on the sheaves and meshing with the pinion, uprights carried by the said bar, a pulley supported above the rack-bar, a flexible connection uniting the pulley and the scale-beam, 20 and a pendulum carried by the said pulley

and carrying an arm working between the said uprights, substantially as described.

2. In a scale, the combination of a frame supporting grooved sheaves near each end, a shaft journaled in the frame and carrying a 25 pinion and a pointer, a rack-bar working on the sheaves and meshing with the pinion, uprights carried by said bar, a pulley working on knife-edge bearings, a flexible connection uniting the periphery of the pulley and the 30 scale-beam, and a pendulum carried by the said pulley and carrying an arm working between the said uprights, substantially as described.

In testimony whereof I hereunto affix my 35 signature in the presence of two witnesses.

WILLIAM J. GRAVES.

Witnesses:

W. E. AUGHINBAUGH,
D. DARLEY.