

966,554.

Patented Aug. 9, 1910.

2 SHEETS—SHEET 1.

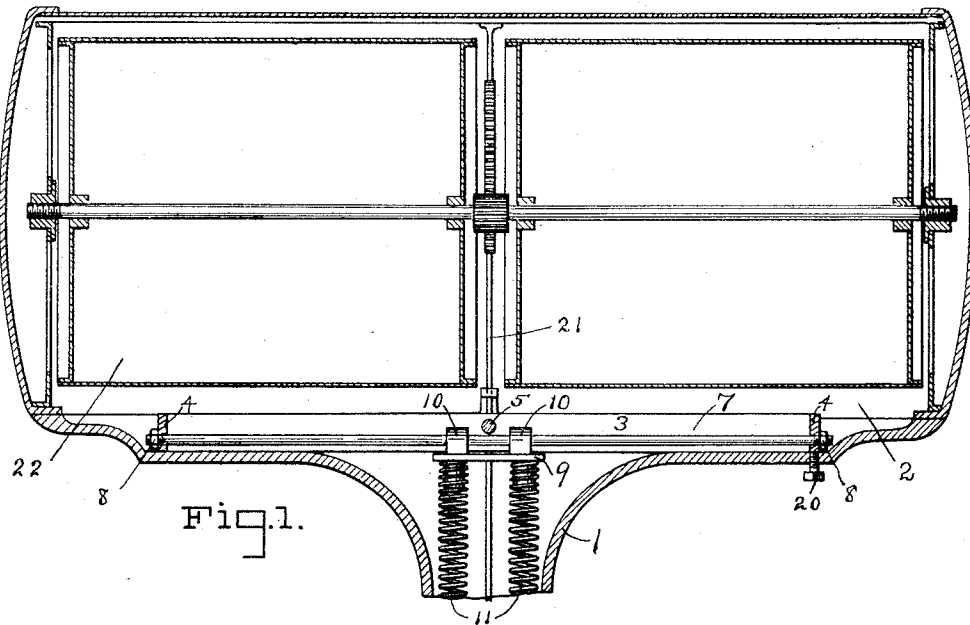


Fig. 1.

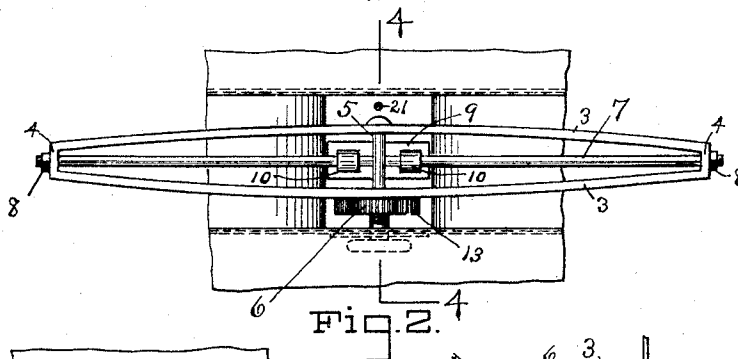


Fig. 2.

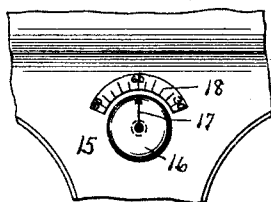


Fig. 3.

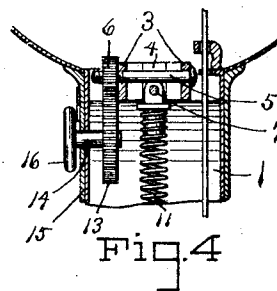


Fig. 4.

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SCALE.

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2 SHEETS—SHEET 2.

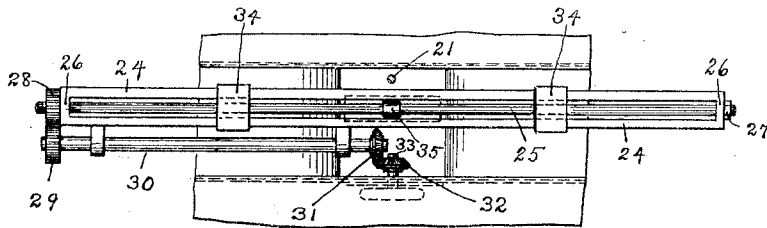


Fig. 5.

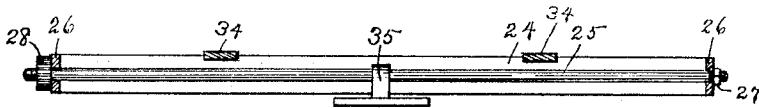


Fig. 6.

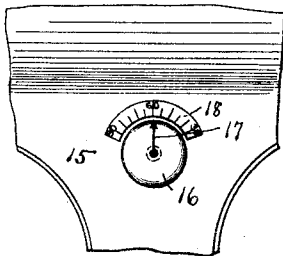


Fig. 7.

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SCALE.

966,554.

Specification of Letters Patent.

Patented Aug. 9, 1910.

Application filed February 21, 1910. Serial No. 545,092.

To all whom it may concern:

Be it known that I, LOUIS JAENICHEN, a citizen of the United States, and a resident of Detroit, in the county of Wayne and State of Michigan, have invented a new and Improved Scale, of which the following is a specification.

This invention relates to scales and is especially adapted for those embodying a platform, platform lever mechanism, a computing drum, springs, and means connecting the lever mechanism with the springs and drum, generally arranged and constructed in the manner shown in the Jaenichen Patent No. 923,530 dated June 1st, 1909; and the object of the improvements shown is to provide a cheap compact and efficient device for correcting the variations in the springs of the scales due to varying temperatures.

In the accompanying drawings, Figure 1 is a vertical central, cross section of the upper portion of a scale longitudinal of the drum. Fig. 2 is a plan of the correcting device. Fig. 3 is an elevation of the adjusting button and the graduated indicator. Fig. 4 is a vertical cross section on the line 4—4 of Fig. 2. Fig. 5 is a plan of a modified form of correcting mechanism. Fig. 6 is a vertical, longitudinal cross section of the same. Fig. 7 is an elevation of an indicating device.

Similar reference characters refer to like parts throughout the several views.

Springs of scales decrease in stiffness and lengthen with increasing temperatures, and various devices have been suggested especially for counteracting the decrease in stiffness. The increase in length can be readily provided for at each variation of temperature for all weighing while such temperature continues, but corrections for the loss of stiffness of the springs present more difficulty. The following described construction has been found to solve the problem in a satisfactory manner.

Mounted within the main frame or pedestal 1 which supports the drum 2, is a cross frame formed of two substantially horizontal side pieces 3, and the ends 4. The side pieces 3 are bowed and their middle portions normally tend to move from each other. They are held together by means of the bolt 5, upon the front end of which is a nut 6 which may be in the form of a gear. It will be seen that by screwing up on this nut 6, the sides 3 will be drawn toward each other,

and the ends 4 be separated. Extending centrally to the frame and below the bolt 5 is a bar 7, whose ends may be secured to the ends 4 in any desirable manner, such as by the nuts 8 outside of the ends 4. Any tightening up of the nut 6 will increase the tension on this bar 7 and vice versa. This bar 7 supports a saddle which may be in the form of a plate 9 having eyes 10 through which the bar 7 extends. Scale springs 11 connect to the plate 9 in the usual manner. This bar 7 is a spring which deflects downwardly at its middle portion under the stress on the springs 11, and the amount of flexure will vary inversely as the tension caused by the pressing together of the side pieces 3, through the action of the nut 6. Any desirable means may be employed to turn this nut 6, that shown being a gear 13 mounted on a small shaft 14, mounted in the front plate 15 of the pedestal; a button 16 on the outer end of this shaft being the actuating member. A line 17 on this button points to division graduations on the indicator 18 on the pedestal. When properly proportioned, the figures on the indicator 18 will indicate the degree of temperature at which the line 17 should register with these graduations in order to cause the proper tension on the bar 7 to counteract the increased tendency of the springs 11 to elongate because of such temperature.

A screw 20 may be employed to elevate or lower one end of the frame so as to raise or lower the springs 11 and thereby lift or lower the rod 21 which actuates the graduated drums 22, to counteract the variation in length of the different parts by reason of change in temperature. This adjustment will cause the zero of the graduations on the drum 22 to register with the proper indicator when no load is on the platform.

Any other desirable means may be employed whereby the tension on the transverse bar may be varied to compensate for changes in temperature. In Figs. 5, 6 and 7 a device is shown which can be substituted for that just described. The side pieces 24 are sufficiently rigid to withstand the stresses, resulting from the tension on the bar 25, without flexing. The ends 26 are formed with holes to permit the bar 25 to extend through the same and one end of the bar is stationary in one of these ends 26, a nut 27 being the preferred means for holding it. On the other

end of the bar is a nut 28 in the form of a gear, which meshes with a gear 29 on the outer end of a shaft 30. On the inner end of the shaft is a bevel gear 31 which meshes with the bevel gear 32 on the short shaft 33. A button 16 on the end of this short shaft is similar to that just described and may be provided with a similar line 17. The front 15 of the pedestal may also have a graduated indicator 18. Cross bars 34 prevent lateral reflection of the side pieces. The saddle 35 will support the upper ends of the springs.

Many changes may be made in the construction of the mechanism shown without departing from the spirit of my invention.

Having now explained my construction, what I claim as my invention and desire to secure by Letters Patent is:—

1. In a scale, the combination of a pedestal, a frame mounted therein comprising side pieces connected by end pieces, a bar mounted in said end pieces, a spring suspended from said bar, a manually operated shaft, and means connected to said shaft for controlling the stress of said frame.

2. In a scale, the combination of a main frame, springs within the same, a cross bar supporting said springs, supports for the ends of the cross bar, and manually operable means for changing the tension between said supports and the cross bar.

3. In a scale, the combination of a pedestal, a frame mounted therein comprising outwardly curved side pieces connected by end pieces, a bar mounted in said end pieces, a spring suspended from said bar, and means to move the middle portions of the side pieces relative to each other to vary the tension of the spring supporting bar.

4. In a scale, the combination of a pedestal, a substantially horizontal frame mounted therein comprising outwardly curved side pieces connected by end pieces, a bar mounted in said end pieces, a bolt extending across to connect the middle portions of said side pieces, a nut on said bolt to force said side pieces toward each other to increase the tension on said bar, and a spring supported by the middle portion of the bar.

5. In a scale, the combination of a pedestal, a substantially horizontal frame comprising curved side pieces and end pieces, a bar having its ends connected to the end pieces of the frame, a bolt extending across to connect the middle portions of said side pieces, a nut on said bolt to vary the distance between said side pieces, springs supported by said bar, and means to turn said nut.

6. In a scale, the combination of scale springs, a resilient bar to support the same, a frame to support the bar, and a screw-threaded device to vary the longitudinal tension of said bar.

7. In a scale, the combination of a scale spring, a resilient bar to support the same, a frame to support the bar, a correcting device to control the longitudinal tension on the bar, and an indicator and actuator for the correcting device.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

LOUIS JAENICHEN.

Witnesses:

JOSEPH M. BUCHER,
GEORGE E. RENTON.