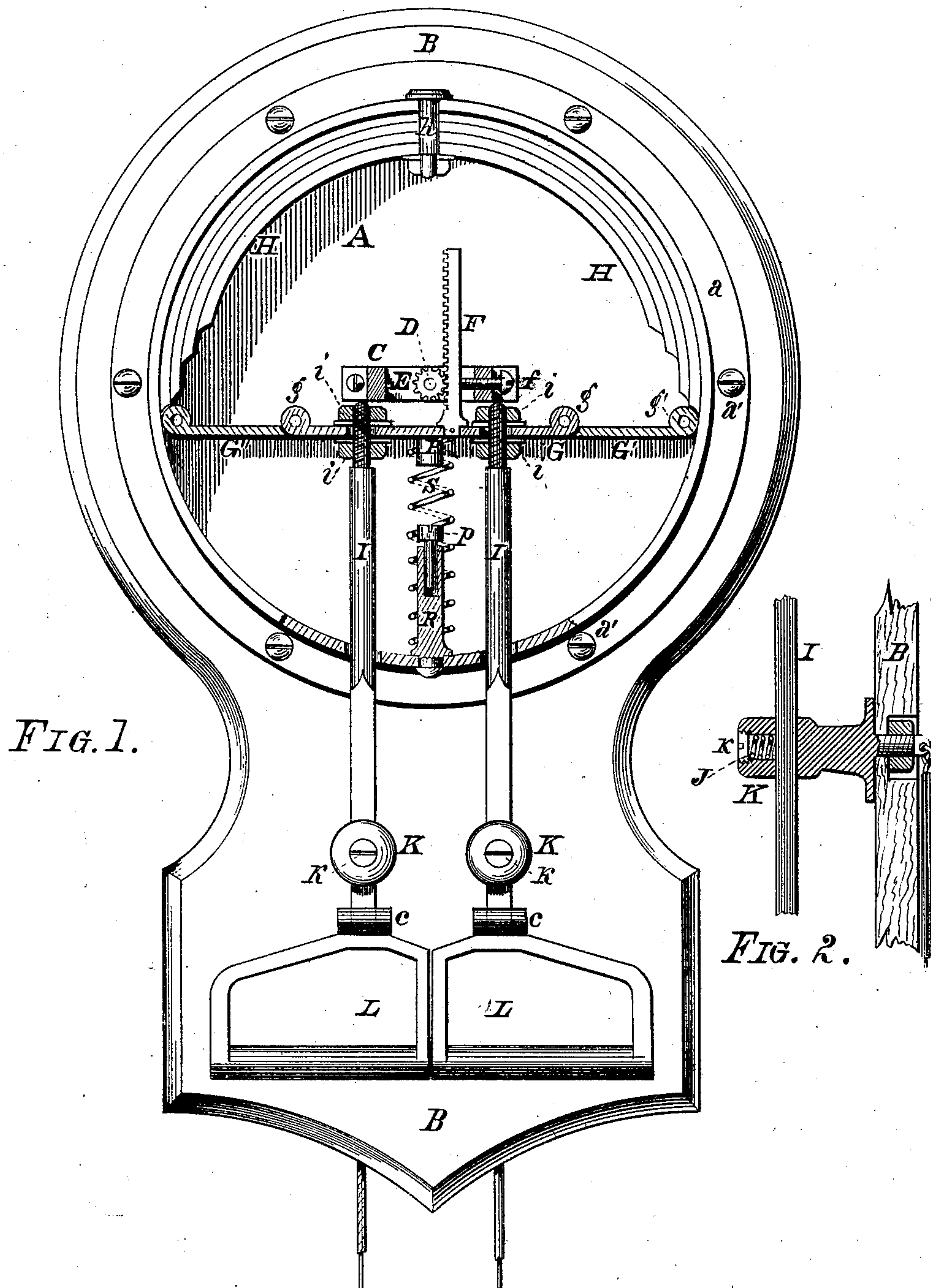


JOHN PREISS.
Exercising-Machine.

No. 199,932.

Patented Feb. 5, 1878.



Witnesses:

Frank Shirsch
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Inventor:

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UNITED STATES PATENT OFFICE.

JOHN PREISS, OF BUFFALO, NEW YORK.

IMPROVEMENT IN EXERCISING-MACHINES.

Specification forming part of Letters Patent No. **199,932**, dated February 5, 1878; application filed May 5, 1877.

To all whom it may concern:

Be it known that I, JOHN PREISS, of Buffalo, in the county of Erie and State of New York, have invented certain new and useful Improvements on a Test-Gage; and I do hereby declare that the following description of my said invention, taken in connection with the accompanying sheet of drawings, forms a full, clear, and exact specification, which will enable others skilled in the art to which it appertains to make and use the same.

My invention has special reference to test-gages; and it consists in the peculiar and novel arrangement of parts and details of construction, as hereinafter first fully described, and then pointed out in the claims.

In the drawings heretofore mentioned, which form a part of this specification, and serve to illustrate my invention more fully, Figure 1 is a face view of my improved test-gage, with the cover and dial-plate removed to expose its interior arrangement, shown partly in section. Fig. 2 is a sectional view of the guide-post for the handle-rods.

Like letters of reference indicate corresponding parts in both figures.

A is a metallic cylindrical case, provided with a flange, *a*, by means of which and screws *a'* it is secured to a wall-board, B. This case is supplied with the usual cover, a glass plate, and a dial-plate graduated into the customary divisions of pounds, &c., a hand fastened to the pinion-staff D being employed to indicate the amount of pull or force exerted to deflect the leaf-springs H. This case is fitted in its interior with a small frame, C, carrying the bearings for the staff D, provided with the pinion E, wherewith engages a toothed bar or rack, F, secured with its lower extremity to the member G of a series of links, G G' G'', pivoted to one another at *g*, and to the series of leaf-springs H at *g'*, said springs being secured centrally to the case A by means of the bolt *h*. The links G' G'' serve to connect the two extremities of the longest leaf of the springs H with the link G, and this answers as means for transmitting motion imparted to it by the rods I and handles L to the pinion E, in conjunction with the before-mentioned rack F. The handles L are pivoted to the bars I at *c*, and these rods are secured to the link G

by means of nuts *i* above and below said link. Attached to the lower side of the link G is a boss, P, serving as a guide for the upper extremity of a weak spiral spring, S, interposed between the link G and case A, to return the said link to its normal position should, from any unforeseen reason, the tensioned leaf H fail to restore it to that position. This spiral spring S surrounds a post, R, fastened to the case A with its lower extremity, which post is provided with an adjusting-screw, *p*, serving, in connection with the boss P, as a stop to limit the downward movement of the link G beyond a certain point, corresponding to that of the extreme indication on the dial-plate. The rods I pass through guide-posts K, provided centrally with a passage fitted with a screw-plug, *k*, retaining a spiral spring, J, within said passage.

In operation the handles, when pulled down, actuate the link G, and this, in response, sets the hand on the pinion-staff D through the rack F and pinion E while deflecting, and therefore under the influence of the leaf-springs H.

There are in my test-gage no spiral springs to resist the action of the handles, which springs, owing to the very limited space within a circular case, are at best but very irregular, and will not allow of the recording of the true and exact force or pull applied.

In my gage is, furthermore, a positive connection between the plate holding the handles and the recording device through the rack F, placed centrally between the bars I. This arrangement obviates a drawback in similar devices where the connection is on one side, and thereby under the influence of an uneven pulling on both rods, resulting in moving the indicator-hand in advance of the point indicating the true force when the rod nearest to said connection is more depressed than the opposite one.

Having thus fully described my invention, what I claim, and desire to secure to me by Letters Patent of the United States, is—

1. In a test-gage, the combination, with the case A, of the series of curved leaf-springs H, connecting-links G' G'', and a recording device connected with said leaf-springs, substantially as and for the use and purpose stated.

2. A test-gage consisting of a case, A, a se-

ries of curved springs, H, links G G' G'', handles L L, rods I I, and the recording device composed of the rack F and pinion E, the whole constructed and arranged to operate substantially in the manner as and for the use and purpose stated.

3. The combination, with the central link G, of the post R and the adjusting-screw *p*, for the purpose mentioned.

4. The combination, with the post K, of the screw-plug *k* and the spiral spring J, arranged

in relation to the rod I, substantially as and for the purpose described.

In testimony that I claim the foregoing as my invention I have hereto set my hand and affixed my seal in the presence of two subscribing witnesses.

JOHN PREISS. [L. S.]

Attest:

MICHAEL J. STARK,
FRANK HIRSCH.