

(No Model.)

A. W. BROWNE.
Strength Tester.

No. 233,918.

Patented Nov. 2, 1880.

Fig. 1.

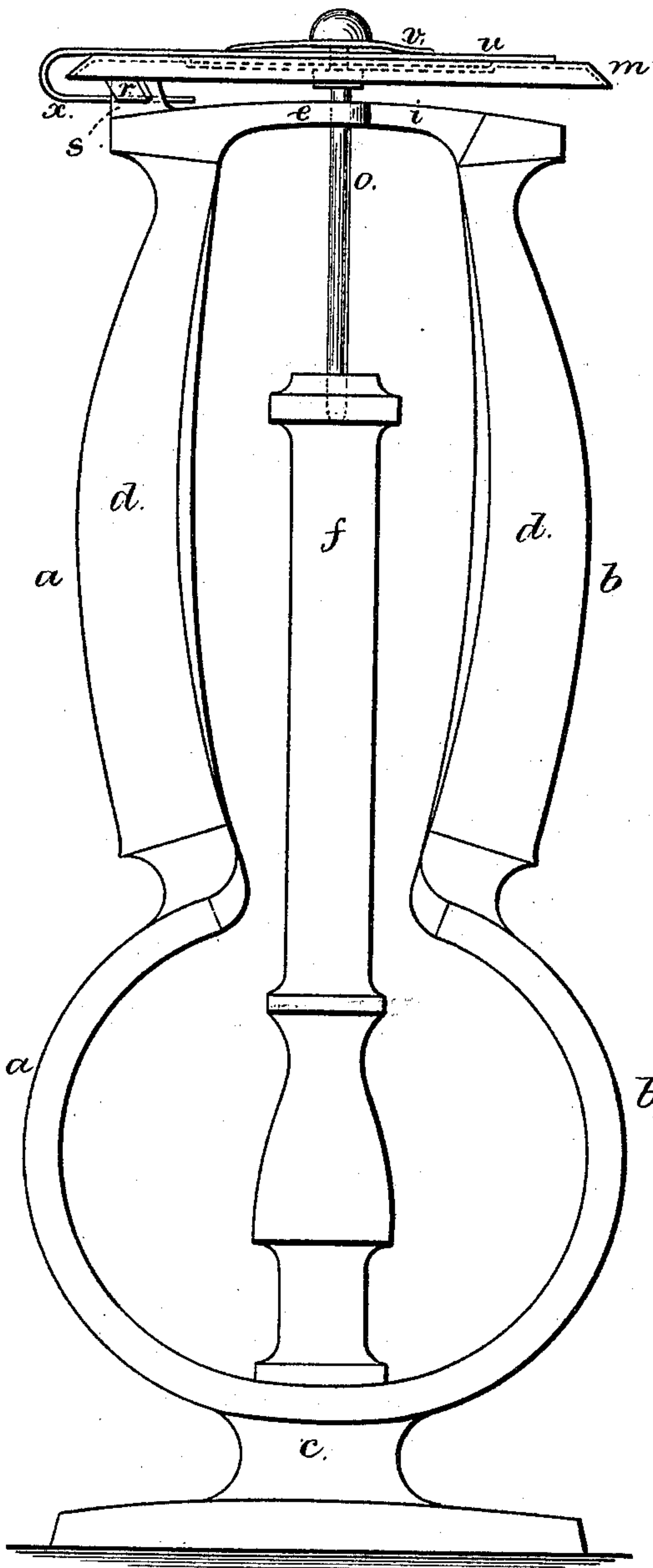


Fig. 2.

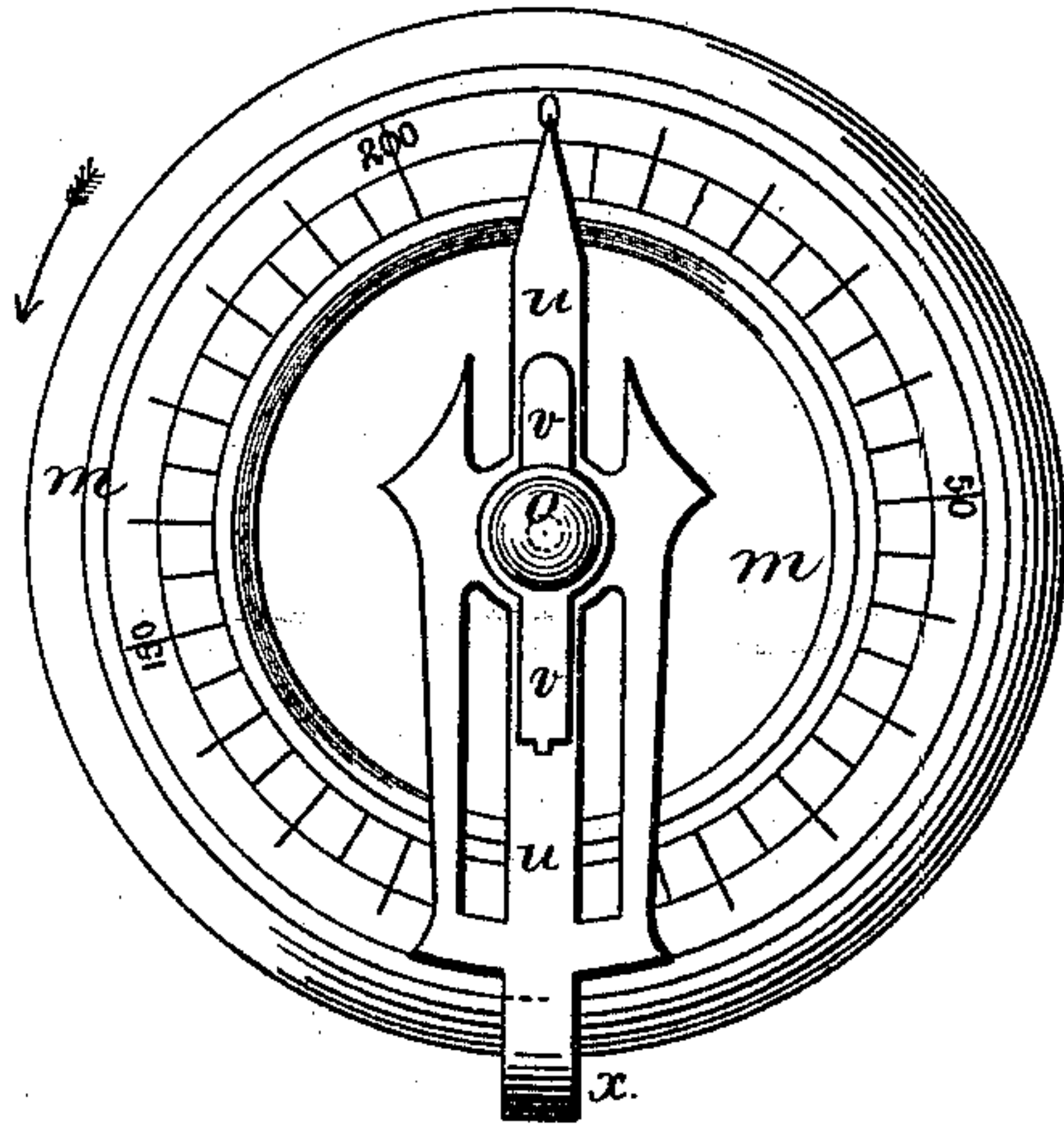
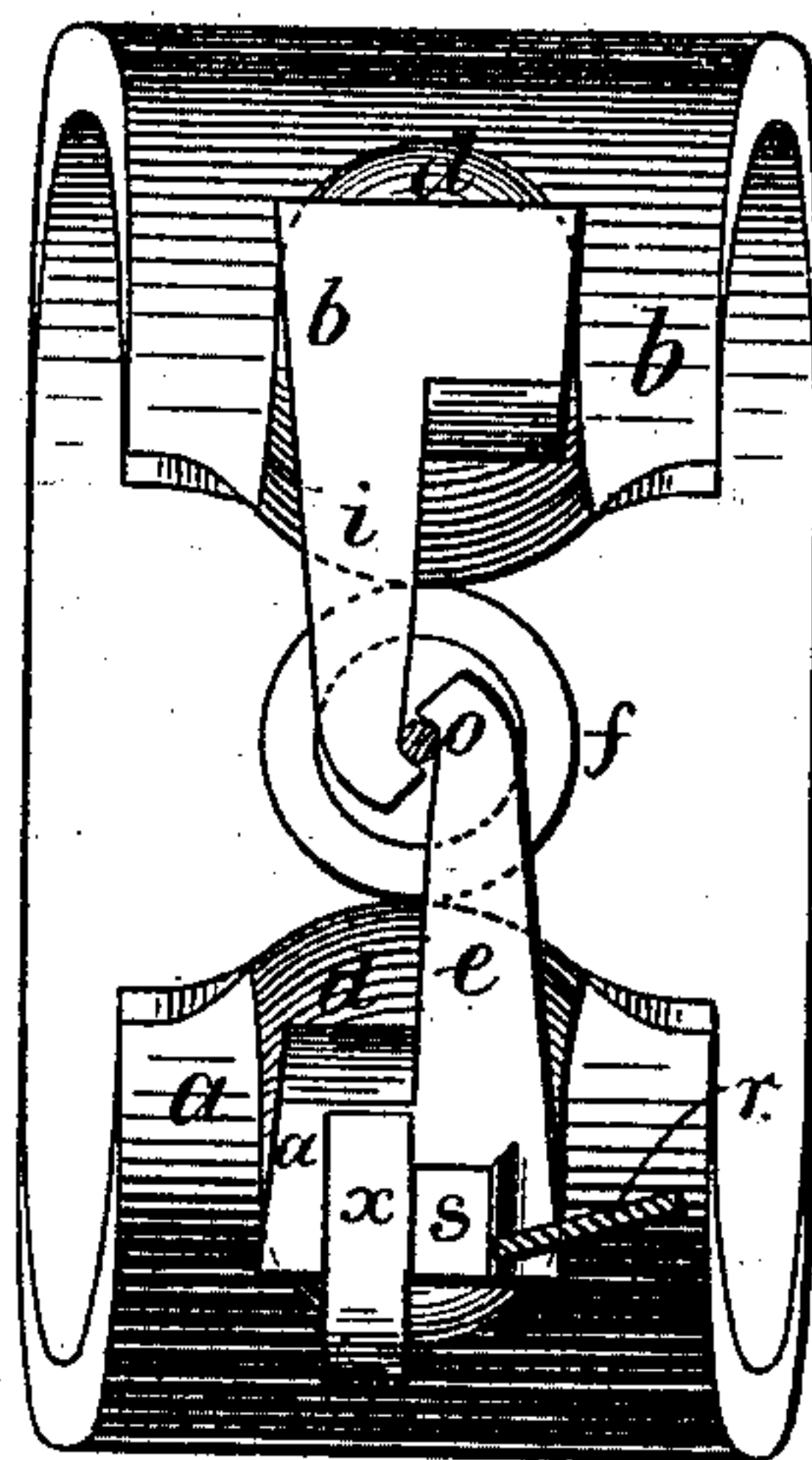


Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

ARTHUR W. BROWNE, OF PLEASANT PLAINS, NEW YORK.

STRENGTH-TESTER.

SPECIFICATION forming part of Letters Patent No. 233,918, dated November 2, 1880.

Application filed March 22, 1880. (No model.)

To all whom it may concern:

Be it known that I, ARTHUR W. BROWNE, of Pleasant Plains, in the county of Richmond and State of New York, have invented an Improved Strength-Tester, of which the following is a specification.

This invention is for the purpose of testing the strength of the hands and arms in gripping or squeezing, pulling or pushing; and the same consists in the combination, with a pair of spring-handles, of a revolving dial, and a spring-indicator, the parts being constructed in such a manner that the ends of the spring act at opposite sides of the axis of the dial to revolve the same, and the index stands still, but as soon as the gripe on the spring-handles is relieved the index moves with the dial and continues to point to the figure or division that indicates, in pounds or other quantities, the power exerted by the hand in grasping the spring-handles.

In the drawings, Figure 1 is a side elevation of the instrument. Fig. 2 is a plan of the dial, and Fig. 3 is a sectional plan below the dial.

The springs *a b* are preferably in one piece, bent into the form of a bow and supported upon a stand, *c*. At the upper parts each spring is made as a handle or grasping-surface, as at *d d*, and the extreme upper ends are turned horizontally and lap past each other, as at *e* and *i*, and between the surfaces of these parts *e* and *i* there is a vertical shaft, *o*, that is supported at the bottom in the vertical standard *f*, and it is free to revolve therein; hence when the handles *d d* are grasped the parts *e* and *i* are moved in opposite directions at the sides of the shaft *o* and revolve the same by the frictional contact of the surfaces, and the harder the springs are squeezed by the gripe of the hand the more motion will be given to the shaft *o*. At the upper end of this shaft *o* there is a dial, *m*, graduated in divisions to indicate pounds or other weights, and on the under side of said dial there is a stop, *r*, and the dial and shaft are to be turned around until the stop *r* comes into contact with one side of the projection *s* upon the upper end

of the handle *a*. Upon the surface of the dial there is a hand or index, *u*, and a spring, *v*, to apply friction thereto and hold the hand to the position on the dial to which it may be moved, and the back end, *x*, of the hand passes around the edge of the dial and turns beneath it.

When the dial is turned so that the stop *r* comes against one side of the projection *s*, and the back end, *x*, of the handle is against the other side of *s*, the parts are adjusted to the normal position, and the index-hand points to *o*. If, now, the handles are grasped and squeezed, the dial is revolved in the direction indicated by the arrow, the hand standing still. The moment the grasp is released the dial moves the other way, carrying the hand with it; hence said hand continues to indicate the greatest amount of force applied to the springs, and thus measures the strength of the hand in grasping or gripping the handles. If this is provided with means for connecting one of its handles with a vertical support, the other handle may be pressed upon or provided with a cushion against which a blow from the fist may be directed, so as to measure the force of the blow; or, one or two rods may be connected to one of the handles, and a rest or support be connected with the other handle, so that the strength of the person may be exerted in pulling upon the rod or rods either vertically, horizontally, or at an inclination. In either of these cases the actions of the springs, end pieces, dial, and indicator are the same.

I claim as my invention—

1. The combination, with the springs *a b* and handles, of the end pieces, *e*, and *i*, shaft *o*, dial *m*, and indicating-hand *u*, substantially as set forth.

2. The indicating-hand and friction-spring *v*, in combination with the dial *m*, the stop *r*, the projection *s*, and the spring-handles *a b*, substantially as set forth.

Signed by me this 17th day of March, A. D. 1880.

ARTHUR W. BROWNE.

Witnesses:

J. H. HITCHCOCK,
JAMES GRAHAM, Jr.