R. H. THURSTON.
Testing Machine.

No. 233,712. Patented Oct. 26, 1880.

FIG. 1.

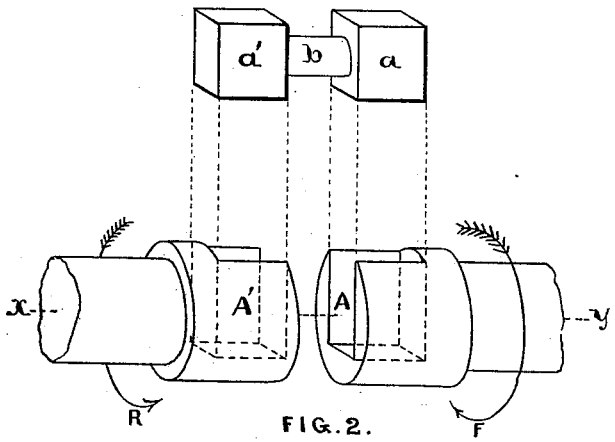

FIG. 2.

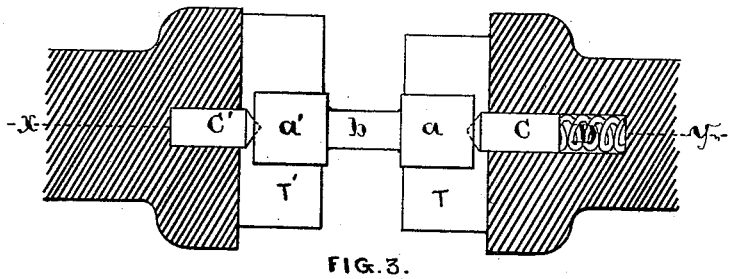

FIG. 3.

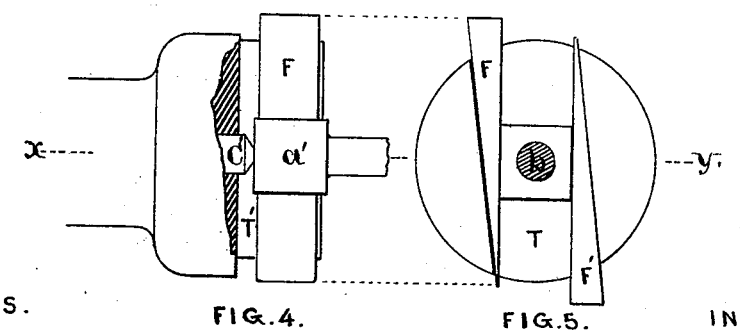

FIG. 4. FIG. 5.

WITNESSES.

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ROBERT H. THURSTON, OF HOBOKEN, NEW JERSEY.

TESTING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 233,712, dated October 26, 1880.

Application filed February 18, 1880.

To all whom it may concern:

Be it known that I, ROBERT H. THURSTON, of Hoboken, Hudson county, State of New Jersey, have invented a new and Improved Construction of Jaws for Holding Test-Pieces; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

Figure 1 illustrates the test-piece as it is usually formed when the material is to be tested by torsion. The ends *a a'* are held in the jaws of the testing-machine. The smaller portion, *b*, between is unsupported, and its length and section are given the dimensions of the piece of which it is desired to know the resistance offered.

Fig. 2 illustrates the usual construction of the jaws of the testing-machine, which hold the test-piece. The ends *a a'* insert into the corresponding recesses A A' in the jaws. Force is applied, as shown by the arrow F, to revolve the jaw A and the end *a* of the test-piece, which is held by it, and this force is opposed by a suitable resistance, R, given to the other jaw, A', and consequently to its end *a'* of the test-piece.

It is essential that the axis of the test-piece should exactly coincide with the axis of the jaws. To make this adjustment as is now done, by the insertion of thin plates between the faces of the test-piece and jaws, requires much painstaking, and is rarely effected with the requisite exactness.

My improved means for adjustment consist of the centers C C' in the axis *x y* of the jaws. One of these may be backed by a spring, D, which will press that center forward against the end of the test-piece with a force sufficient to hold the test-piece until it be secured. The centers insert into the same holes at the ends of the test-piece that were used when turning up the latter in the lathe. The axis of the jaws must therefore coincide exactly with the center of the test-piece. Should these center holes have been cut off, the test-piece can be recentered in a lathe.

For greater convenience in securing the test-pieces I use the following construction: The recesses in the jaws which receive the ends of the test-piece are considerably enlarged, and are best formed as a slot, T T', extending through the jaws transversely to the axis, as shown in Figs. 3, 4, 5. When the test-piece is centered, Fig. 3, two wedges, F F', are pressed in between the faces of the test-piece and those of the slot, and thus hold the test-piece so that it cannot yield.

I claim as my invention and desire to secure by Letters Patent—

1. The combination, with the jaws of a testing-machine, of the centers C C' and spring D.

2. The slot T and pair of wedges F F' combined, to hold the test-piece, substantially as set forth.

ROBERT H. THURSTON.

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