

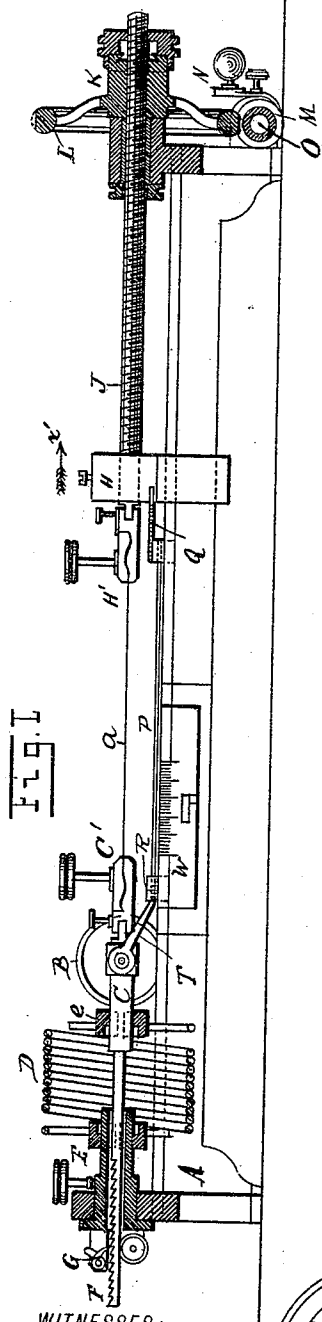
(No Model.)

A. WENDLER.

MACHINE FOR TESTING PAPER, THREAD, YARN, &c.

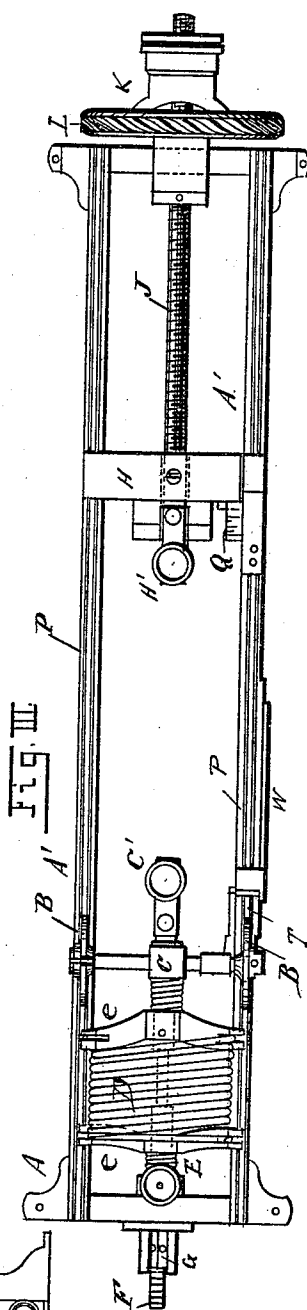
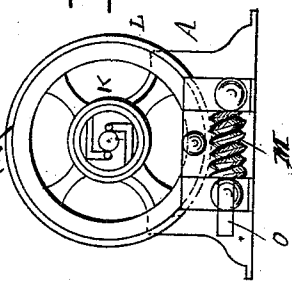
No. 464,766.

Patented Dec. 8, 1891.



WITNESSES:

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*INVENTOR*

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# UNITED STATES PATENT OFFICE.

ALEXANDER WENDLER, OF WATERTOWN, NEW YORK.

## MACHINE FOR TESTING PAPER, THREAD, YARN, &c.

SPECIFICATION forming part of Letters Patent No. 464,766, dated December 8, 1891.

Application filed April 3, 1891. Serial No. 387,484. (No model.) Patented in Germany October 6, 1889, No. 39,189.

*To all whom it may concern:*

Be it known that I, ALEXANDER WENDLER, a citizen of Germany, and a resident of Watertown, in the county of Jefferson, State of New York, have invented certain new and useful Improvements in Testing-Machines, (for which I have obtained Letters Patent No. 39,189, dated October 6, 1889, in the German Empire,) of which the following is a specification.

This invention relates to improvements in machines for testing the strength of paper, fibers, threads, yarns, and similar devices; and the object of my invention is to provide a testing-machine that not only shows the intensity of the strain required to rupture the paper or other material to be tested, but also shows the lengthening or stretching of the same before rupture takes place.

The invention consists in the construction and combination of parts and details, which will be fully described hereinafter, and finally pointed out in the claim.

In the accompanying drawings, Figure I is a longitudinal sectional view of my improved machine for testing paper. Fig. II is an end view of the same, and Fig. III is a plan view of the same.

Similar letters of reference indicate corresponding parts.

The frame A is provided with the two tracks A', on which the wheels B B of the carriage C can run, said carriage being provided at its front end with a pair of gripping-jaws C' for holding one end of the strip of paper a. The said carriage carries a large helical spring D, one end of which is secured to the carriage and the other end to a bushing E, forming part of the frame. Cross-bars e are arranged at opposite ends of said spring D and serve to center the same. With the carriage C a rack-bar F is connected, that passes through a suitable aperture in the frame and is engaged by a pawl G. On the tracks A' a slide H is mounted, which is provided with a pair of gripping-jaws H' for that end of the strip of paper or other material a to be tested opposite the one held by the jaws C'. A screw-spindle J projects from the slide H through a nut K, mounted to turn in one end of the frame and provided with a worm-wheel L, engaging a worm M, formed on a shaft O, hav-

ing a suitable crank-handle N for turning it, so that by turning said shaft O the slide H can be moved in the direction from the carriage C and a tension brought on the strip of paper held in the jaws. On one of the tracks A' a scale W is formed, and on said same track a sliding rod P is arranged, provided with a gage-mark R at one end and with the scale Q at the opposite end. A pusher-arm T is connected with the carriage C and can act on one end of the sliding rod P.

The operation is as follows: The strip a, of paper or other material to be tested, is drawn taut, but without any strain, and clamped between the two clamping devices C' and H', and by means of the worm-wheel the slide H is moved in the direction of the arrow x'—that is, from the carriage C. The paper strip a draws the carriage C in the direction of the arrow x', causing the arm T to push the sliding rod P in the same direction until the paper strip breaks. The paper strip before breaking and while pulling the carriage C in the direction of the arrow x' expands or lengthens the spring D and pulls the rack-bar F in the direction of the arrow x', which rack-bar F is held in place by the panel G, thus preventing the spring D when the paper strip breaks from drawing the carriage C in the inverse direction. At the same time when the carriage moves in the direction of the arrow x' the slide H is moved in the same direction and moves in relation to the scale Q on the sliding rod P. The position of the mark R of the sliding rod P on the scale W indicates the tension of the strain required to rupture the strip a, and the position of the slide H in relation to the scale Q of the sliding rod P indicates the length that the strip was stretched before being ruptured.

The slides C and H do not move uniformly, as the slide H moves a distance more than the slide C moves equal to the stretch of the paper before the same is ruptured. It is this difference that is indicated by the slide H on the scale Q, and the distance that the sliding rod P is moved indicates the strain necessary to rupture all the paper.

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

In a testing-machine, the combination, with

a frame, of a spring and gripping attachments connected therewith, a slide on the frame, also provided with gripping attachments, a scale formed on one of the rails, a sliding rod on  
5 said rail, said sliding rod being provided with an indicator-mark and also with a graduated scale at that part adjacent to the slide provided with the gripping attachment, and of means for moving said sliding rod from the

spring and gripping attachments, substantially as set forth.

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ALEXANDER WENDLER.

Witnesses:

OSCAR F. GUNZ,

CHARLES SCHROEDER.