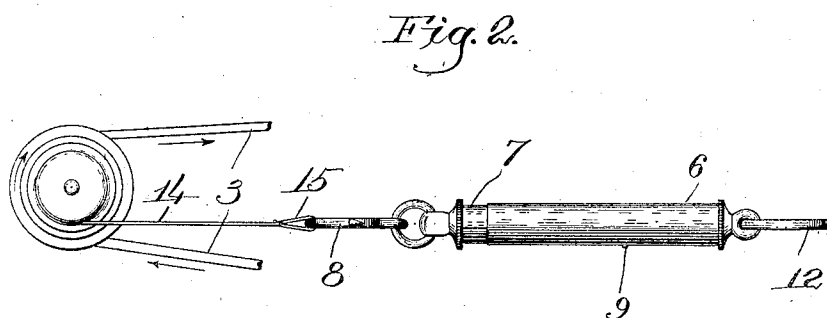
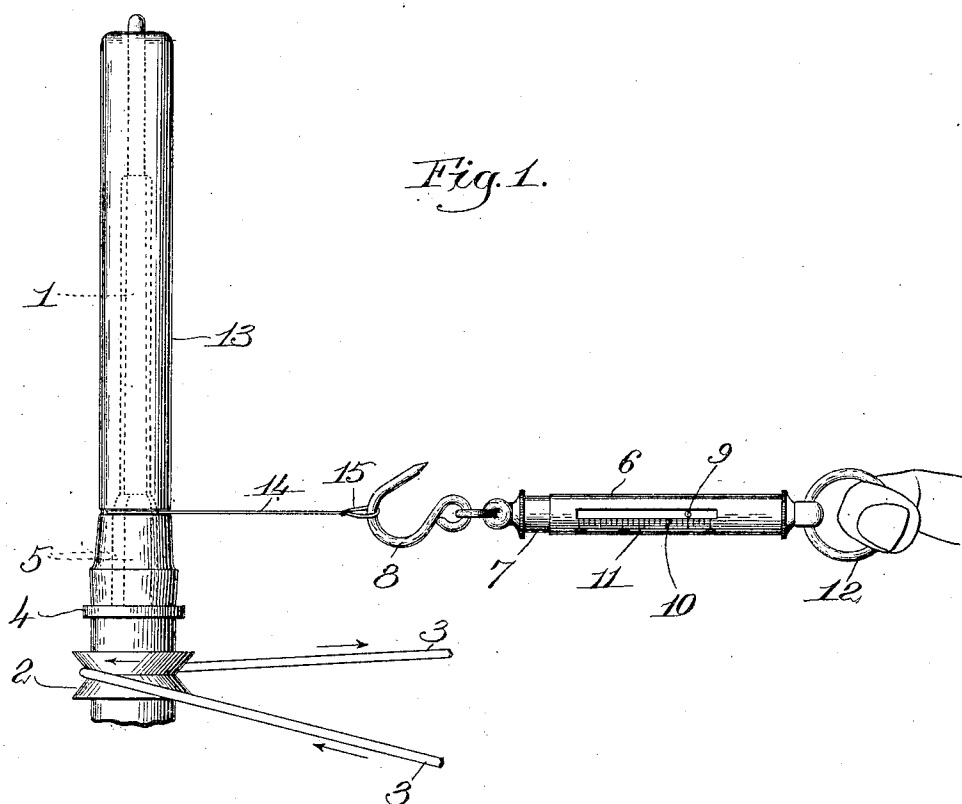


No. 836,752.

PATENTED NOV. 27, 1906.

H. P. GREG.
DYNAMOMETER FOR SPINDLE BANDS.
APPLICATION FILED AUG. 16, 1906.



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UNITED STATES PATENT OFFICE.

HENRY P. GREG, OF MANCHESTER, ENGLAND, ASSIGNOR TO DRAPER COMPANY, OF HOPEDALE, MASSACHUSETTS, A CORPORATION OF MAINE.

DYNAMOMETER FOR SPINDLE-BANDS.

No. 836,752.

Specification of Letters Patent.

Patented Nov. 27, 1906.

Application filed August 16, 1906. Serial No. 330,770.

To all whom it may concern:

Be it known that I, HENRY P. GREG, a subject of the King of Great Britain, and a resident of Manchester, Lancashire, England, have invented an Improvement in Dynamometers for Spindle-Bands, of which the following description, in connection with the accompanying drawings, is a specification, like numerals on the drawings representing like parts.

This invention has for its object the production of simple means for determining the driving power of the actuating-band of a spindle or other rotatable object in a rapid and easy manner.

It is frequently desirable to ascertain the driving power of an actuating-band or small belt without having recourse to a complicated dynamometer, and this is particularly true in the case of spinning-spindles, for it is necessary at times to ascertain the band-driving power under working conditions. By means of my invention I am enabled to test and ascertain the driving power of the actuating band or bands, as many as may be advisable, without interfering with the operation of the frame as a whole. Incidentally by my invention I can ascertain the clutching or gripping action of bobbin-connectors of the centrifugally-acting type or others, as will be made apparent hereinafter.

Inasmuch as my invention is particularly adapted to the measurement of the driving power of spindle-bands, I have illustrated it in connection with a spinning-spindle.

The various novel feature of my invention will be fully described in the subjoined specification and particularly pointed out in the following claims.

Figure 1 is a side elevation of a portion of a spinning-spindle and its driving or actuating band, showing the apparatus embodying my invention operatively applied thereto. Fig. 2 is a top plan view of the apparatus shown in Fig. 1.

Referring to Fig. 1, the spindle 1, which is, broadly speaking, the driver, is provided with a whirl 2, rotated by an actuating-band 3 in any usual manner, a bobbin-support 4 being shown above and connected with the whirl.

I have for a purpose to be referred to hereinafter shown by dotted lines, Fig. 1, a bob-

bin-connector of the centrifugally-acting type, comprising, essentially, clutch members 5, which when thrown outward by centrifugal force engage the bore of the bobbin and rotate the bobbin in unison with the spindle.

A bobbin-connector of this type is shown and described in United States Patent No. 734,747, granted to Rabbeth July 28, 1903.

In carrying out my invention I provide a tension-scale of any suitable character, herein shown as of the spring type, comprising a tubular body 6, in which is mounted a spring-retracted member 7, provided with a hook 8 and a pointer 9, the latter projecting through a longitudinal slot 10 in the body. The latter has a series of graduations 11 thereon adjacent the slot, and a ring 12 is attached to the body to enable the same to be held in fixed position, as by the hand of the operator. I also provide a bobbin-like member 13, which is adapted to be detachably mounted on the driver or spindle to be rotated thereby, and in this instance the base of said member 13 is suitably bored to cooperate with the bobbin-connecting means on the spindle. A cord or other preferably flexible connection 14 is attached to the periphery of the member 13, the free end of said connection having a loop 15 to receive the hook 7 of the tension-scale.

In using the apparatus to determine the driving power of the band the scale is hooked onto the connection 14 and the member 13 is applied to the rotating spindle, the ring 12 of the scale being held firmly by the hand of the operator, the ordinary friction connection causing the member 13 to rotate with the spindle.

Manifestly the rotation of the member 13 and the spindle will thereby be arrested when the tension of the scale-spring overcomes the driving force of the band 3, and the latter will slip on the whirl. The position of the pointer 9 with relation to the graduations 11 of the tension-scale then enables the driving power of the actuating-band to be determined, the radial distance of the tangent-point of the connection 14 from the axis of rotation of the spindle being known and also the diameter of the whirl. This mode of testing presupposes, of course, that the bobbin-like member 13 will not slip relatively to the

spindle, as will be the case with an ordinary friction connection between the spindle and said member above referred to.

So long as the spindle rotates at a sufficient speed to render operative the clutching members of a centrifugally-acting bobbin-connector the member 13, if applied to the spindle, will tend to rotate until the pull or resistance due to the tension-scale overcomes the force of the clutching members. Then the said member 13 will be held stationary while the spindle continues to rotate. Consequently from the indication on the scale at such time I am enabled by my invention to test and determine the driving or gripping power of a centrifugally-acting bobbin-connector of the type herein referred to.

When testing the driving power of the actuating-band, therefore, the detachable member 13 must be firmly connected with the spindle, as by a suitable friction connection, as is common in the spinning art.

It will be seen from the drawings that by the apparatus herein shown and described the tension-scale is operatively connected tangentially with the driver or spindle by means detachable from the latter.

To test the driving power of the bands on a spinning-frame in use, it is only necessary to connect the scale and the detachable member 13 and place the latter on a spindle instead of placing thereon the usual bobbin. The operation of the frame is not interfered with, and the test is made under actual working conditions.

Any suitable form of tension-indicating scale may be employed in carrying out my invention.

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

1. In apparatus of the character specified, a band-actuated driver, a tension-scale, and means detachable from the driver to operatively connect the scale tangentially with the driver, whereby the driving power of the band may be determined from the scale indication

when the driver is held from rotation by said means.

2. In apparatus of the character specified, a band-actuated driver, a tension-scale, and means detachable from the driver to operatively connect the scale tangentially with the driver, at a known radial distance from its axis of rotation, whereby the driving power of the band may be determined from the scale indication when the driver is held from rotation by said means.

3. In apparatus of the character specified, a band-actuated spindle, a member adapted to be rotated by and in unison with the spindle, a tension-measuring scale, and a tangential connection between said member and the scale, the indication of the latter when the member and spindle are held from rotation enabling the driving power of the band to be determined.

4. In apparatus of character specified, a spindle, a member adapted to be rotated by and in unison with the spindle, a tension-measuring scale, and a connector between the scale and said member attached to the latter on its periphery, to transmit the draft tangentially to the scale.

5. In apparatus of the character specified, a band-actuated spindle provided with a bobbin-connector, a detachable bobbin-like member adapted to be rotated in unison with the spindle by or through the connector, a tension-measuring scale, and a tangential connection between said detachable member and the scale, the indication of the latter enabling the driving power of the band or of the bobbin-connector to be determined when the band slips relatively to the spindle, or the bobbin-connector slips relatively to the detachable member, respectively.

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

HENRY P. GREG.

Witnesses:

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