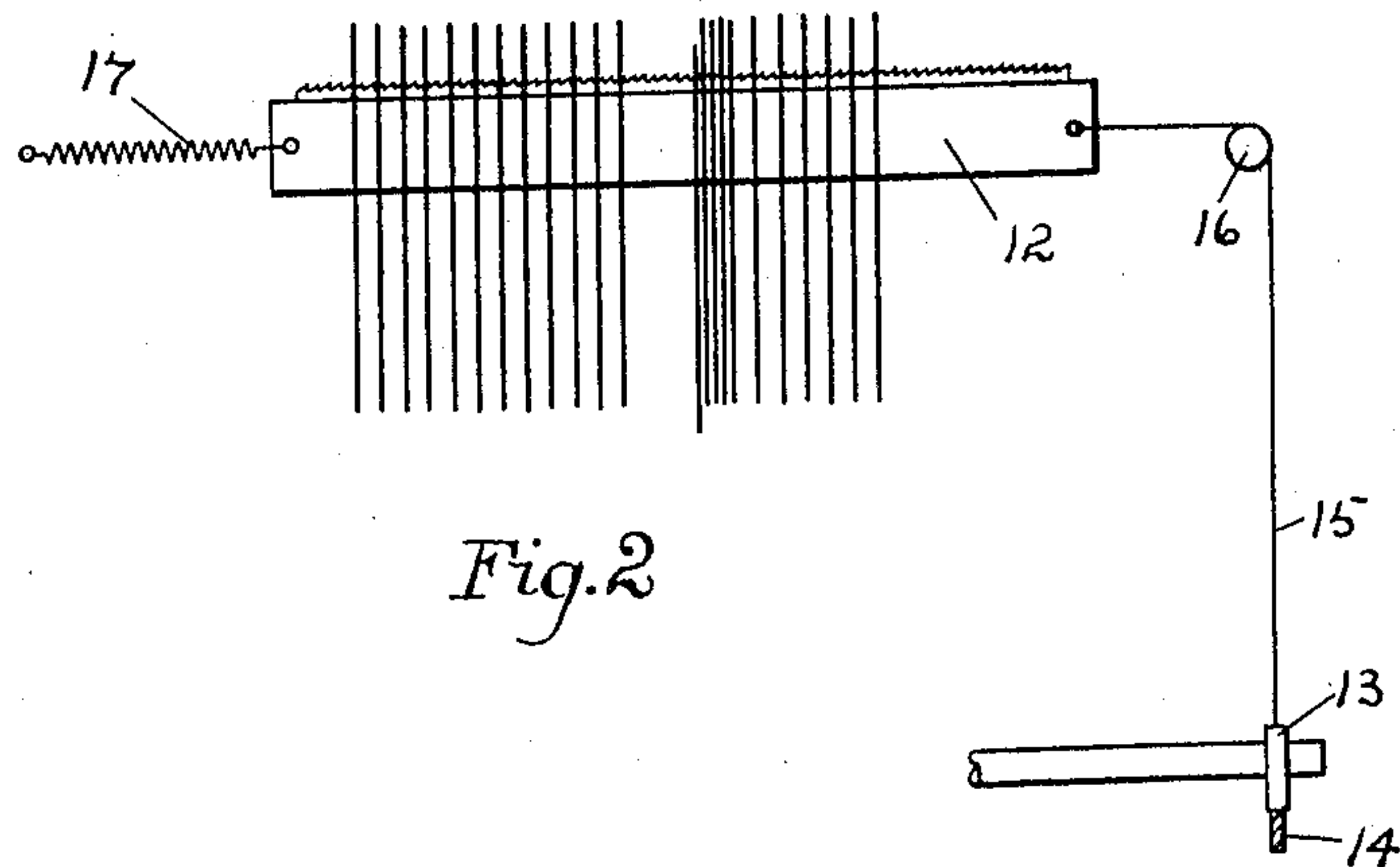
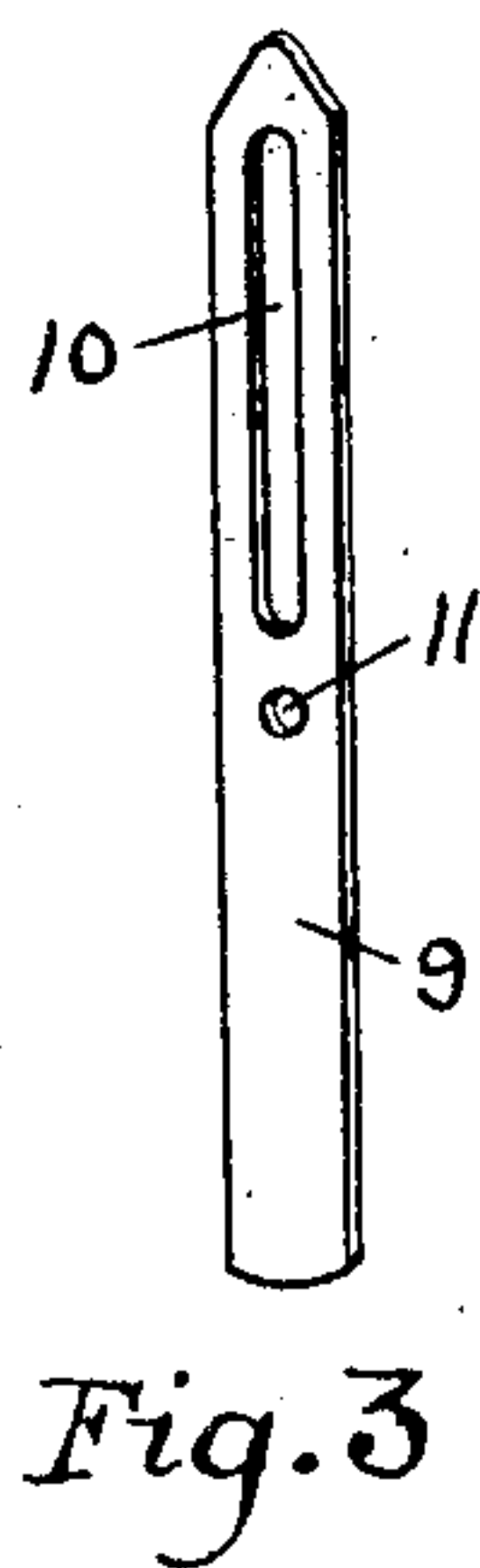
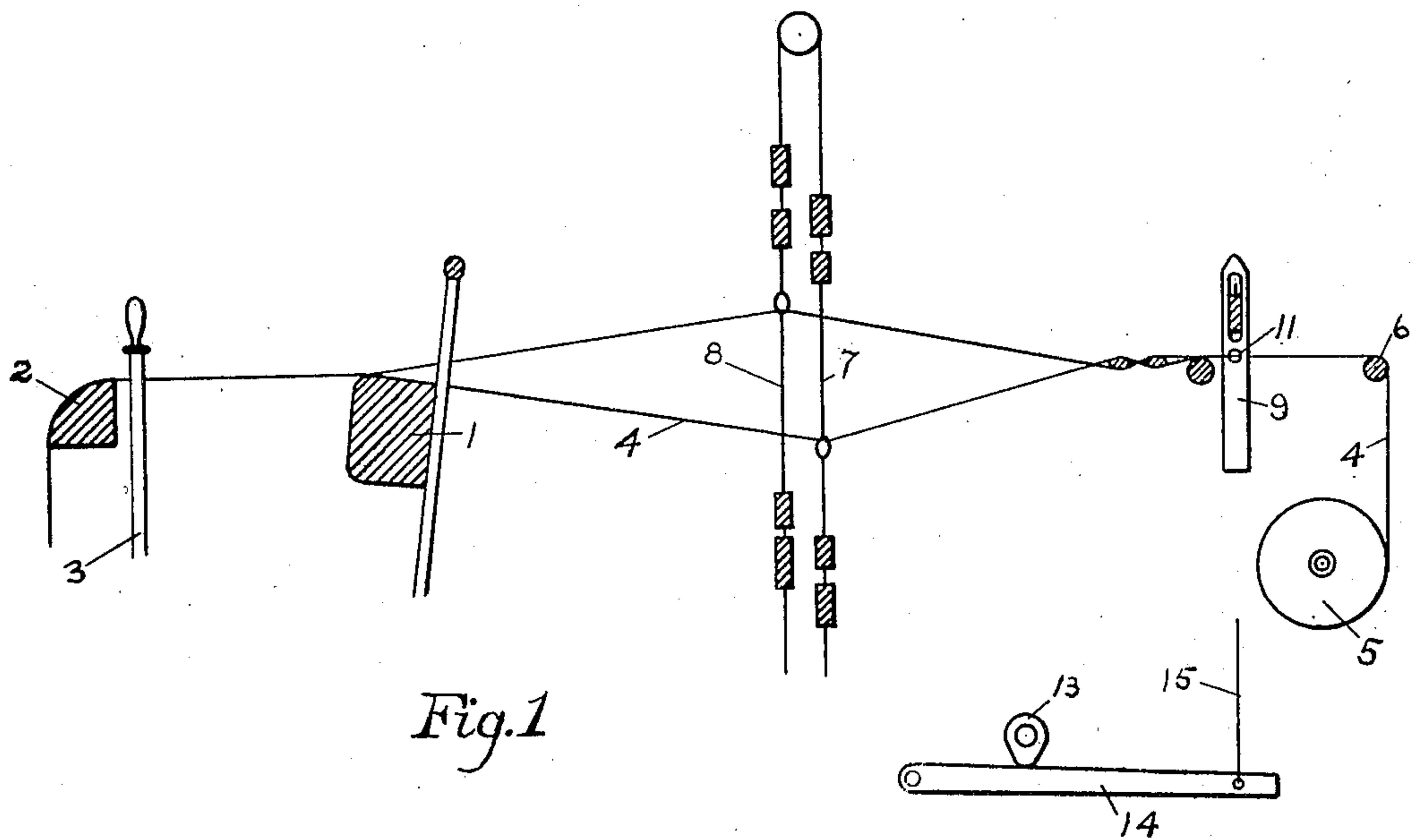


No. 887,475.

PATENTED MAY 12, 1908.

W. GROSS.
WARP THREAD DETECTING DEVICE.
APPLICATION FILED AUG. 16, 1907.



Witnesses

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WILHELM GROSS, OF FALL RIVER, MASSACHUSETTS, ASSIGNOR TO DRAPER COMPANY, OF
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WARP-THREAD-DETECTING DEVICE.

No. 887,475.

Specification of Letters Patent.

Patented May 12, 1908.

Application filed August 16, 1907. Serial No. 388,811.

To all whom it may concern:

Be it known that I, WILHELM GROSS, a subject of Germany, residing at the city of Fall River, in the county of Bristol and State
5 of Massachusetts, have invented certain new and useful Improvements in Warp-Thread-Detecting Devices, of which the following is a specification, reference being had therein to the accompanying drawing.

0 This invention relates to warp thread detectors and has for its object to provide a simple and effective means for opening the warp, or separating the threads so as to clearly indicate the position of a slack or broken warp
15 end.

In practice it is found difficult to find the ends of a broken thread in the warp. Many devices have been devised for indicating the position of such a thread, among others being
20 thin flat wires which are hung on the threads and caused to indicate the position of the broken end by being allowed to drop out of line with the other wires, but these wires are so very thin and small that a displaced
25 one is almost as hard to find as the threads themselves, and therefore the operator is obliged to pass his hand along the bottom of the row and so find the one projecting beyond the others. This is an awkward means
30 and takes too much of the attendant's time.

By my improved device, the warp is opened or drawn wide apart longitudinally at the point where the thread is broken, thereby
35 plainly showing the exact position of the broken thread which may then be easily repaired without loss of time. My preferred means of accomplishing this object is by using a thin flat wire or blade and suspending
40 the same at any convenient place on each individual warp thread. A transversely reciprocating bar is arranged to operate through these wires whereby when a thread is broken or becomes unduly slack the wire
45 drops and engages said reciprocating bar, which is provided with teeth or other engaging means, and by the movement of this bar said wire is drawn to one side, widely separating the warp threads at that point to
50 clearly indicate the position of the broken end.

The invention is fully set forth in this specification and more particularly pointed out in the appended claims.

In the accompanying drawings: Figure 1—
55 is a view in outline illustrating portions of a

loom, and showing my drop wires located in the rear and suspended on the warp threads, also showing a cam motion for operating the reciprocating bar. Fig. 2—is a side elevation showing a portion of the reciprocating
60 serrated bar and the means by which the same is operated, also illustrating the position the wires will take when one drops and is engaged and drawn to one side by said bar. Fig. 3—is a perspective view of one form of
65 drop wire.

Referring to the drawings, at 1 is the usual lay, 2 the breast beam and 3 the knock-off lever. The warp 4 is run in the usual way
70 from the beam 5 over the rod 6 and through the heddles 7 and 8. The drop wires 9 are shown in Fig. 3 as being thin flat blades having an elongated eye 10 through which the reciprocating bar passes. This blade is also
75 provided with a small hole 11 through which the thread is passed that suspends or supports the blade while said thread is taut and in its normal position. I do not, however, confine myself to this construction of drop
80 wire as the same may be made in any desired or convenient form. The reciprocating bar 12 is preferably made of thin flat stock, notched or serrated on its upper edge, or provided with other suitable engaging means,
85 and held in suitable bearings (not shown) either above or below the warp the same being caused to reciprocate transversely across the loom by any suitable means. A simple
90 method of operating this bar is shown comprising a cam 13 which is rotated in time with the loom, and is caused to draw said bar in one direction through the lever 14 and cord
95 15 which is attached to one end of said bar 12 and arranged to work over the pulley 16, a spring 17 being provided to draw the bar in the opposite direction. I do not confine myself, however, to this means of operating the bar as any desired or convenient method may be employed for moving the same.

The operation of the device may be more
100 fully described as follows: My improved detecting device may be attached to the warp threads of any ordinary loom and a bar provided with suitable engaging means and adapted to reciprocate in time with the lay
105 is arranged to pass through said drop wires, and if for any cause one of said threads becomes slack or broken the wire which was supported by said thread drops into engagement with the reciprocating bar and is at
110

once drawn to one side, separating the warp and the wires, leaving a sufficient space to clearly indicate the position of the broken thread.

5 The device is of very simple and practical construction and may be readily applied to any loom.

10 It will be obvious to those skilled in the art that my improved warp thread detector is designed for use in connection with any preferred or well known stopping mechanism and it will therefore be understood that wherever the operation of the device is mentioned herein it is presumed that the operation of
15 the loom will be arrested through the medium of some such independent stopping mechanism.

20 Having thus described my invention, what I claim as new and desire to secure by Letters Patent, is:

1. In a warp thread detecting device, means for automatically drawing the adjacent warp threads to one side when one or more of said threads break whereby the position of the broken end may be clearly indicated.

2. In a warp thread detecting device, means for engaging and automatically separating the warp threads laterally when one of
30 said threads break whereby the position of the broken end may be readily located.

3. In a warp thread detecting device, a reciprocating bar, and means operated by said bar to draw said threads apart laterally
35 when one of said threads breaks, whereby the position of the broken end may be readily ascertained.

4. In a warp thread detecting device, a detecting wire supported on each thread, and
40 automatically actuated means for engaging said wires to draw said threads apart longitudinally

dinally when one of said threads breaks, whereby the position of the broken thread may be readily determined.

5. In a device of the character described, a reciprocating bar, detector bars supported by each thread, and means for automatically actuating said bar to engage said detector bars to draw said threads apart laterally when one of said threads breaks whereby the position of the broken end may be readily ascertained.

6. In a warp thread detecting device, a detecting wire supported on each thread, a bar provided with engaging means and adapted to receive each wire when allowed to drop thereon, and means for reciprocating said bar, whereby said detector wire will move with said bar when in engagement therewith.

7. A warp thread detecting device for looms, comprising a detector wire supported on each thread, a serrated bar supported in position to engage said wires when allowed to drop, and means for reciprocating said bar, whereby said detector wire will move with said bar when in engagement therewith.

8. A warp thread detecting device for looms comprising a detector wire supported on each thread, a bar provided with serrations or notches on its upper edge, said bar being adapted to pass through an aperture in each of said wires, and means for giving a longitudinally reciprocating motion to said bar whereby when a wire drops it is engaged by said bar and carried to one side to open the warp.

In testimony whereof I affix my signature in presence of two witnesses.

WILHELM GROSS.

Witnesses:

THOMAS L. VAN NORDEN,
HENRY LEIFHEIT.