

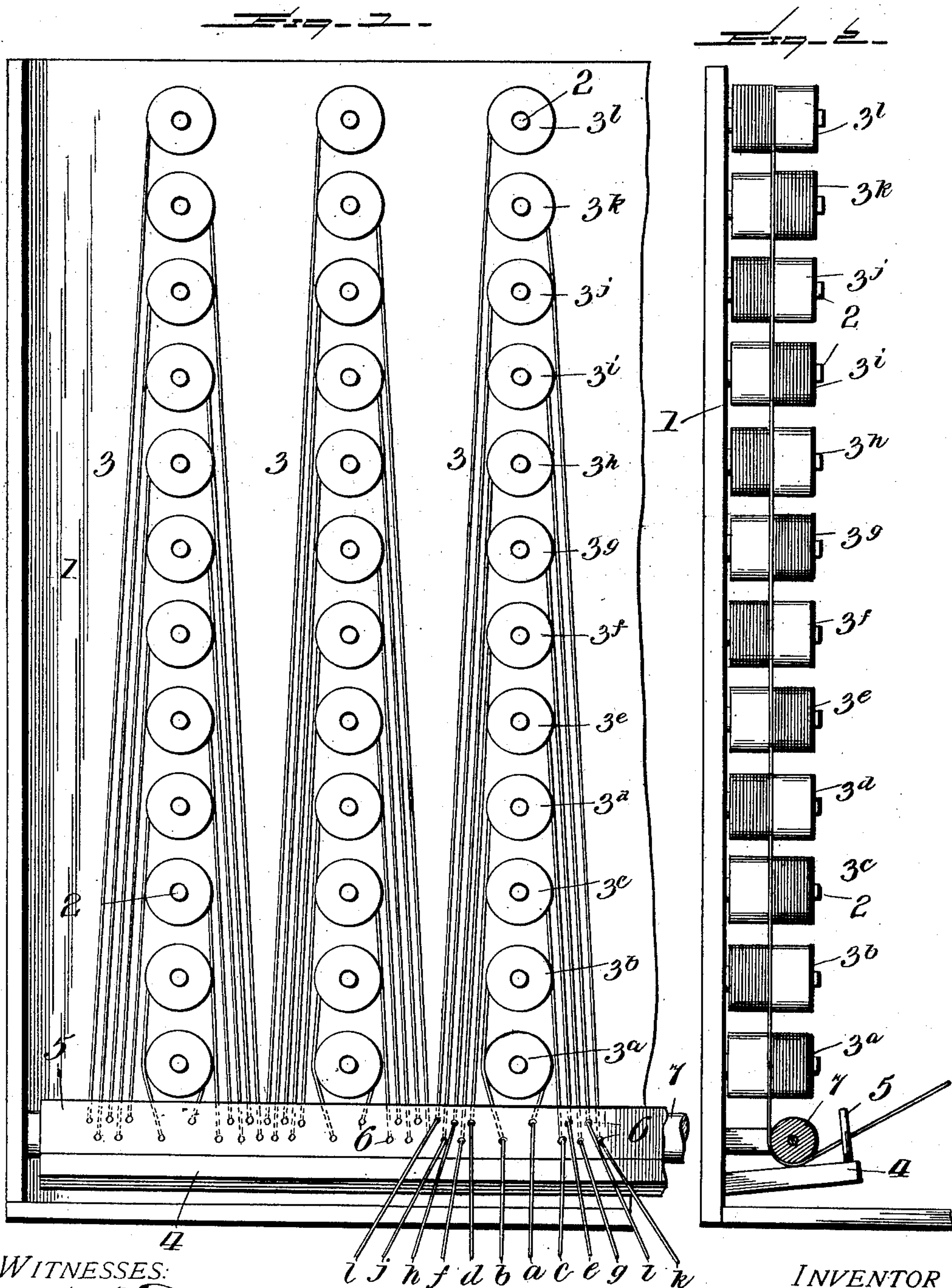
No. 756,790.

PATENTED APR. 5, 1904.

A. S. HORLACHER.
SPOOL RACK.

APPLICATION FILED SEPT. 22, 1902.

NO MODEL.



WITNESSES:

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ADAM S. HORLACHER, OF INDIANAPOLIS, INDIANA.

SPOOL-RACK.

SPECIFICATION forming part of Letters Patent No. 756,790, dated April 5, 1904.

Original application filed September 12, 1901, Serial No. 75,175. Divided and this application filed September 22, 1902. Serial No. 124,442. (No model.)

To all whom it may concern:

Be it known that I, ADAM S. HORLACHER, a citizen of the United States, residing at Indianapolis, in the county of Marion and State of Indiana, have invented new and useful Improvements in Spool-Racks, of which the following is a specification.

This invention relates to improvements in spool-racks for the warp-threads of looms, and is a division of the construction illustrated and described in Letters Patent No. 710,458, filed by me September 12, 1901, Serial No. 75,175.

The object of the present invention is the provision of a rack for the spools bearing the warp-threads of looms which is so constructed as to effect a systematic arrangement of the spools in such manner that in the event of rupture or breaking of the various warps at any point in their extended or unwound portions such ruptured or broken warps may be quickly and readily traced to their respective spools in order to connect or piece the warps without loss of time.

A further object of the present invention is to provide a rack of the character mentioned embodying in its construction an arrangement of the spools in such relation to each other that should any warps become ruptured the spools thereof will be caused to automatically rewind the broken threads thereon, thereby preventing further unwinding of the spools and simultaneously therewith obviating possibility of the broken threads becoming entangled with the other warps of the series.

With these general objects in view and others which will appear as the nature of the improvements is better understood the invention consists, substantially, in the novel construction, combination, and arrangement of parts, as will be hereinafter fully described, illustrated in the accompanying drawings, and pointed out in the appended claims.

In the drawings, Figure 1 is a front elevation of a portion of a spool-rack constructed in accordance with the present invention. Fig. 2 is a vertical transverse sectional view thereof.

Referring to the drawings, the numeral 1

designates the body of the herein-described rack, which body may be of any desired form, whether an integral piece or made up of a series and mounted upon said body 1, and arranged in vertical alinement is a series of supporting-pins 2. It is obvious that the pins 2 may be arranged in any desired number of series, and each series may contain any desired number of pins; but this is of course in accordance with the capacity which it is desired to impart to the rack. Mounted upon the supporting-pins 2 is a series of spools 3, and said spools have wound thereon the warp-threads which it is desired to lead to the loom to be woven into a fabric. As before premised, it is the object of this invention to so arrange the spools relatively to each other that should any of the warps become ruptured or broken the spools thereof will be caused to automatically rewind the broken threads thereon, and to this end the alternate spools of each series are caused to rotate in unwinding in the same direction, while the interposed spools of the series are caused to rotate in a reverse direction. This is clearly shown by reference to Fig. 1, and it will be there seen that the spools 3^a, 3^c, 3^e, 3^g, 3ⁱ, and 3^k in unwinding will rotate toward the right, while the spools 3^b, 3^d, 3^f, 3^h, 3^j, and 3^l will rotate in unwinding toward the left. As the thread of each spool will contact with the spool immediately therebeneath, it is obvious that should any of the warp-threads become broken or ruptured the spool from which the same extends will be immediately reversed in its rotation by reason of the thread from the spool immediately thereabove contacting therewith, and hence the broken thread in lieu of continuing being unwound will be rewound upon its spool, so that the same is effectually prevented becoming entangled with the other warps of the series.

It is also the object of the present invention to enable any ruptured or broken threads to be quickly and readily traced to their respective spools in order to connect or piece the broken warps without loss of time, and to the accomplishment of this result the body 1 is provided at a point below the spools carried thereby with a forwardly-projecting foot 4,

upon which is mounted at its forward edge an upwardly-extending thread guide or conductor 5. The thread guide or conductor 5 is provided with a multiplicity of thread passages or openings 6, one being provided for the thread of each spool, and in order that said openings may be compactly arranged, and thereby occupy but a minimum amount of space, the same are formed in rows, the openings of each row being opposite the spaces between the openings of the opposite row. The threads from the respective spools are led through the openings 6; but previous thereto said threads are passed under a roller or beam 7, arranged beneath the spools 3, the roller 7 being provided to facilitate the passage of the threads through the openings 6 with the least degree of frictional resistance. By providing a separate opening for each of the threads it will be seen that in the event of breaking of any of the threads the spool containing the ruptured thread may readily be located by observing through which opening in the guide or conductor no thread passes, and the spool corresponding therewith contains the defective thread. Through the medium of the openings 6 the threads from the respective spools are also conducted in parallel relation to each other to the loom.

From the foregoing description it will be seen that the herein-described rack provides effectual means for quickly and readily tracing ruptured threads in order that the same may be connected or pieced without loss of time, and in addition thereto the rack also provides means in which the rewinding of the broken threads upon their respective spools is automatically effected, and entanglement of the broken threads with the other warps of the series is thereby effectually overcome.

Having thus described the invention, what is claimed as new, and desired to be secured by Letters Patent, is—

1. A spool-rack adapted for use with looms, comprising a body, a series of spools mounted thereon, the alternate spools being adapted to unwind in one direction and the remaining spools being adapted to unwind in a re-

verse direction, the thread of each spool contacting with the spool immediately therebeneath, whereby said threads are adapted to effect a rewinding of the spools in the event of rupture of the threads, and a perforated conductor for guiding the threads of the respective spools in their passage to the loom.

2. A spool-rack adapted for use with looms, comprising a body, a plurality of spools rotatably mounted thereon, one alternate series of spools unwinding in one direction, and having the threads leading therefrom on the same side of the spools, and each thread thereof contacting with one of the adjacent spools of the other series, the alternate series of spools being adapted to unwind in a reverse direction and having the threads therefrom on the same sides of the spools, and contacting with one of the adjacent spools of the first-named series, and a guiding means for the threads of said spools.

3. A spool-rack adapted for use with looms comprising a body, spools rotatably mounted thereon, said spools being arranged in reversely-unwinding series, the spools of one series alternating with the spools of the other series, the thread from the spools of one series, each contacting with one spool of the other series, and a guiding means for the thread of said spools, substantially as and for the purpose set forth.

4. A spool-rack adapted for use with looms, comprising a body, spools rotatably mounted thereon in alinement with each other, said spools being arranged in a plurality of series, one alternate series having the threads thereof leading on opposite sides of the spools of the other alternate series, and a conductor formed with apertures to receive the threads from said spools, said apertures being arranged at points on both sides of said spools.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

ADAM S. HORLACHER.

Witnesses:

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