

No. 882,019.

PATENTED MAR. 17, 1908.

G. L. REED.

WARPIING MACHINE.

APPLICATION FILED SEPT. 20, 1904.

3 SHEETS—SHEET 1.

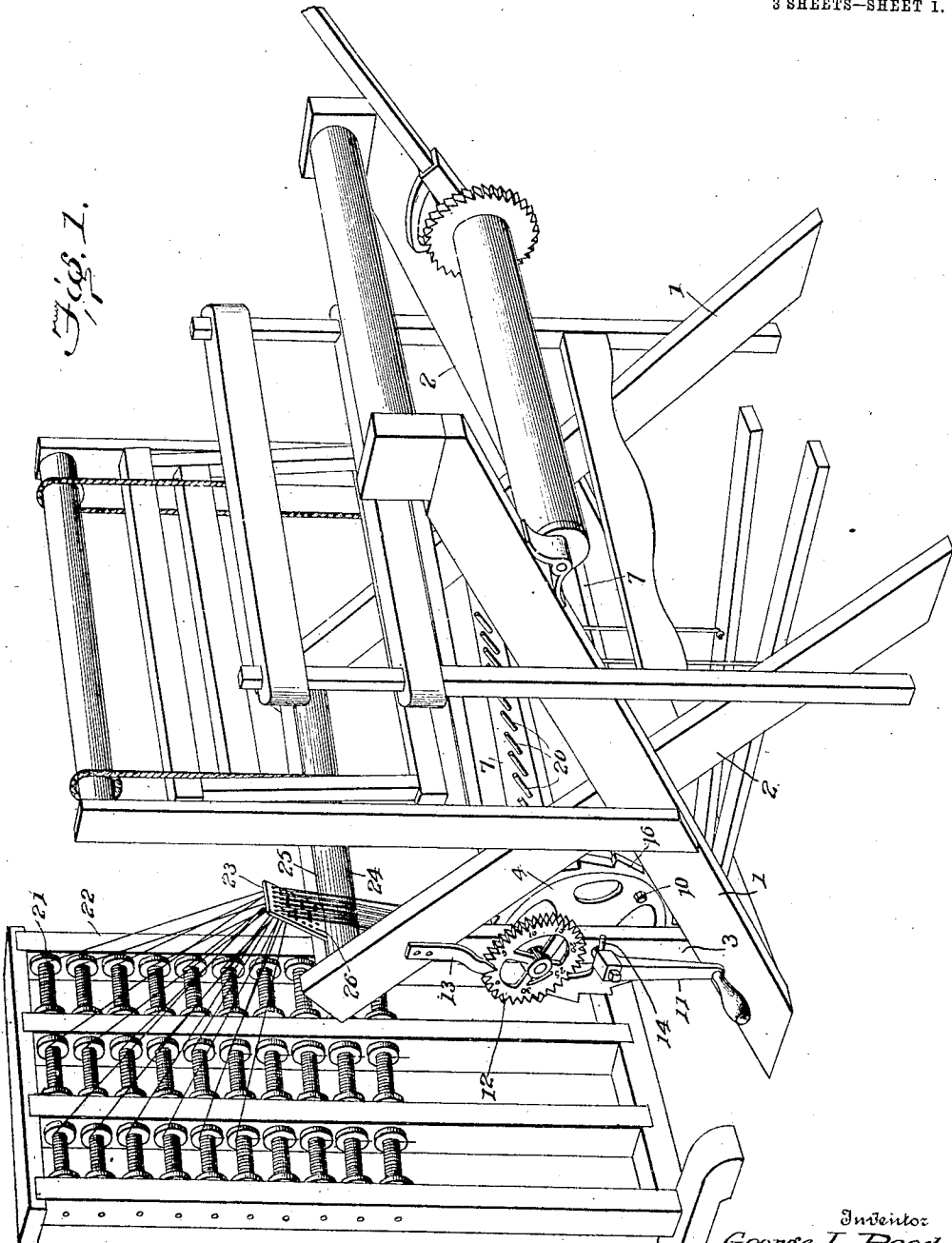


Fig. 1.

Witnesses

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3 SHEETS—SHEET 2.

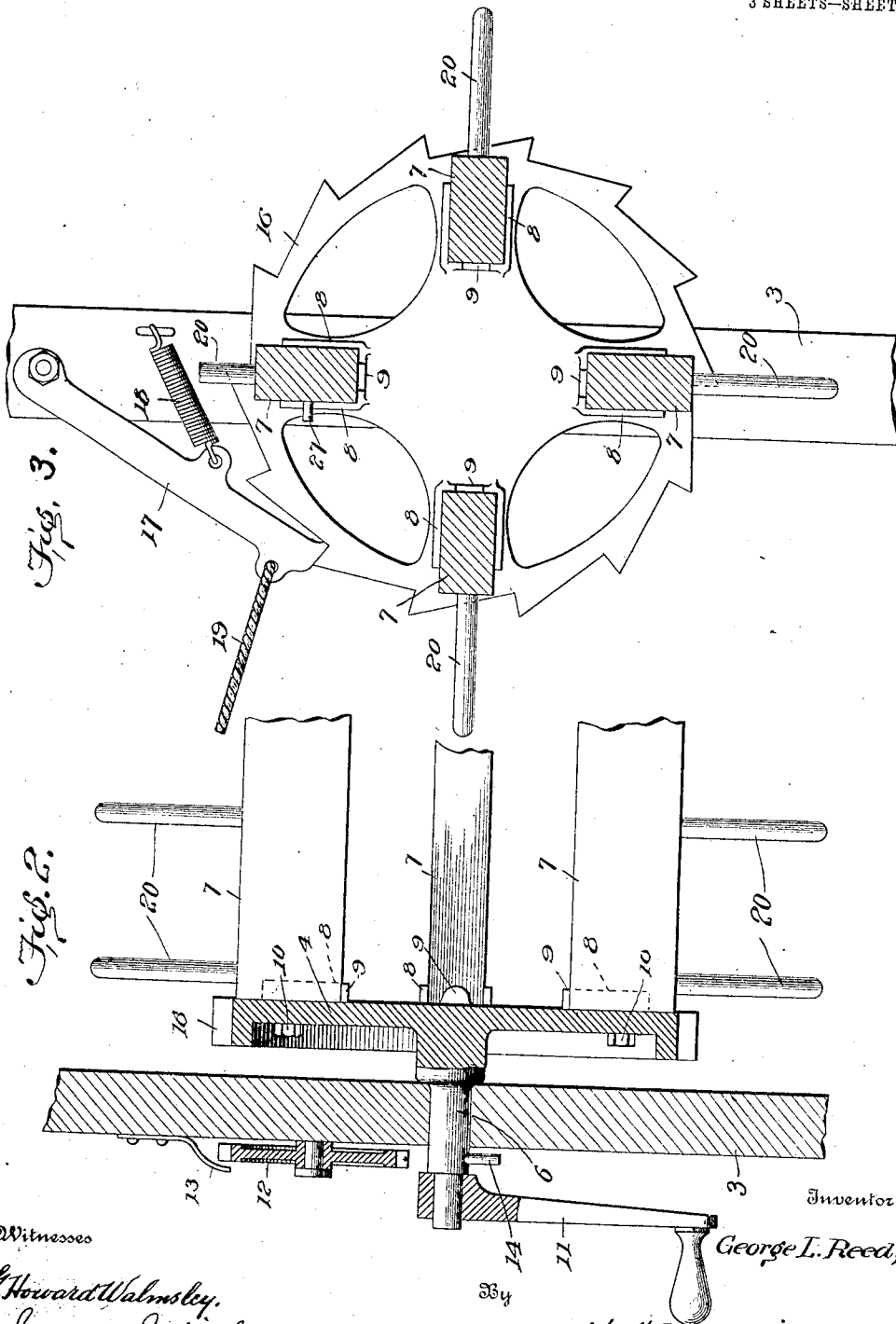


Fig. 3.

Fig. 2.

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3 SHEETS—SHEET 3.

Fig. 4.

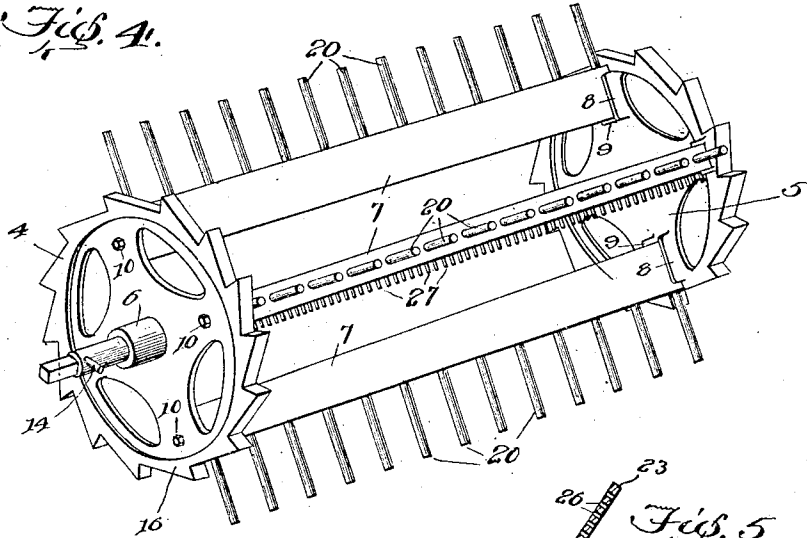


Fig. 5.

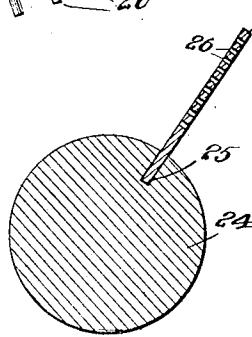


Fig. 6.

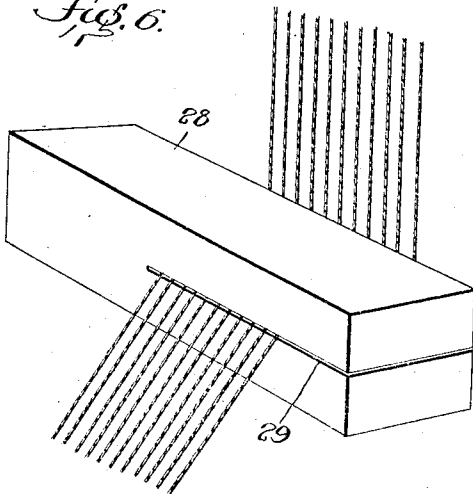
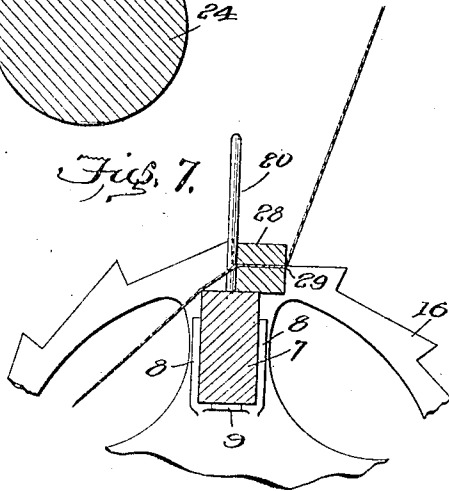


Fig. 7.



Witnesses

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UNITED STATES PATENT OFFICE.

GEORGE L. REED, OF SPRINGFIELD, OHIO, ASSIGNOR TO THE REED MANUFACTURING COMPANY, OF SPRINGFIELD, OHIO, A CORPORATION OF OHIO.

WARPING-MACHINE.

No. 882,019.

Specification of Letters Patent.

Patented March 17, 1908.

Application filed September 20, 1904. Serial No. 225,268.

To all whom it may concern:

Be it known that I, GEORGE L. REED, a citizen of the United States, residing at Springfield, in the county of Clark and State of Ohio, have invented certain new and useful Improvements in Warping-Machines, of which the following is a specification, reference being had therein to the accompanying drawings.

This invention relates to looms, and more particularly to that class known as hand looms, and has for its object to provide a construction whereby the operation of warping may be more readily and rapidly accomplished, the warp threads being drawn directly from the spools to the warp beam, and means being provided to indicate the amount of warp upon the beam.

To these and other ends my invention consists in certain novel features which I will now proceed to describe, and will then particularly point out in the claims.

In the accompanying drawings, Figure 1 is a perspective view of a loom embodying my invention, the spool frame being also illustrated in connection therewith; Fig. 2 is a central vertical sectional view of one of the warp beams and its associated parts; Fig. 3 is a transverse sectional view of the same; Fig. 4 is a perspective view of the warp beam, detached; Fig. 5 is a detail sectional view of the warp rail or rear frame beam and the heck or guide plate mounted therein; Fig. 6 is a detail perspective view of the clip or lease; and Fig. 7 is a detail sectional view of the same in place upon the warp beam.

In the said drawings, the main frame is shown as composed on each side of two cross timbers, 1 and 2, united at the back by uprights 3, and in these uprights the warp beam has its bearings. These beams, as heretofore constructed, have had the form of rollers of comparatively small diameter, so that it has been necessary, in winding the warp threads upon the beam in the desired lengths, to give the beam a comparatively large number of turns. To obviate this objection, I construct the warp beam in the form of a reel; the rails or bars of which are located at such a distance from the axis of the beam as to give the same a relatively large diameter and thus facilitate the winding of the warp.

In the accompanying drawings, the reel is shown as comprising two heads, 4 and 5,

located one at each end of the beam, and each provided with a journal or shaft 6, having a bearing in the upright 3. Each of the heads is provided on its inner face with a plurality of seats or sockets to receive the ends of the reel bars 7, and I prefer for this purpose to provide parallel lugs 8, fitting on opposite sides of the bar, and a lug 9 against which the inner face of the bar rests. The bars are secured to the heads by means of bolts or screws 10, passing through the heads and into the ends of the bars.

Any desired number of bars may be employed to constitute the reel, but I prefer four, which is the number shown in the present instance.

One of the heads has its shaft 6 extended through and beyond the frame member 3, and is provided with a crank handle 11, by means of which the beam can be rotated. Adjacent to this extended shaft there is mounted on the frame an indicator wheel 12, with which coöperates an index or pointer 13, also secured to the frame. The shaft 6 has a single tooth or projection 14, which is so arranged as to engage the indicator wheel 12 when the shaft rotates and thereby move said indicator wheel one step or tooth for each rotation of the shaft. The reel or beam is of such a diameter that each rotation thereof will wind thereon a definite length of thread or warp material, and the indicator wheel has a scale upon its face of a character such as to cause the index or pointer 13 to indicate at any time the precise amount of warp which has been wound upon the beam. Conversely, when the loom is in use, said indicator shows the amount of warp remaining upon the beam at any time. To hold the beam stationary during the weaving operation, and permit it to be released during the drawing out of the warp, one of the heads is provided on its periphery with ratchet teeth 16, and there is mounted upon the frame a pawl 17, which engages said ratchet teeth, being held normally in engagement therewith by a spring 18, and being provided with a suitable connection, such as a rope 19, extending to the front of the loom, by means of which said pawl may be disengaged and the beam released.

The operation of warping is usually performed in such a way that different sections of the beam are separately wound, and in order to divide the beam into sections and to

effectually separate the warp sections wound thereon, I provide each beam with a plurality of outwardly extending pins 20, spaced a suitable distance apart. In the operation of warping, the warp material is mounted upon spools 21, which are placed so as to rotate freely in a spool frame 22. The threads to be used for winding a given warp section are drawn from these spools through a heck or guide plate 23, and this guide plate or heck is supported by the warp rail or rear frame beam 24. To this end, and to permit the guide plate to be adjusted opposite any given beam section, the rail or beam 24 is provided with a longitudinal slot 25, in which the plate may be inserted and frictionally held, said guide plate is provided with a number of apertures 26, through each of which one of the warp threads is passed, and said threads are then carried forward in proper order between two of the pins 20 and are fastened to one of the rail bars 7, which is provided with pins or projections 27 on one of its lateral faces for that purpose. The operation of winding the warp upon this particular section of the beam may then be rapidly and conveniently performed, the amount being shown by the indicator, and when a sufficient supply is wound upon one section of the beam, the guide plate may be moved to the next section to be wound, and the operation will proceed as before.

In order to secure the ends of the warp threads and hold them in correct position, ready for threading through the heddles, I

employ a clip or lease 28, in the form of a block or bar of wood or other elastic material, having a slit 29 formed therethrough and extending from one end nearly, but not quite, to the other end. The warp threads are passed through this slit in their proper order, as shown in Fig. 6, which will firmly hold the ends of the threads in proper relative position, ready to be threaded through the loom when necessary.

I do not wish to be understood as limiting myself to the precise details of construction hereinbefore described and shown in the accompanying drawings, as it is obvious that these details may be modified without departing from the principle of my invention.

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

In a device of the character described, the combination, with the frame, of a warp beam mounted therein, a guide plate adjustably mounted near said warp beam, and a clip or lease adapted to be interposed between said guide plate and said beam and having a slit in one end thereof adapted to receive the threads as they come from the guide plate and retain the same in their relative positions.

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

GEORGE L. REED.

Witnesses:

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IRVINE MILLER.