

No. 791,722.

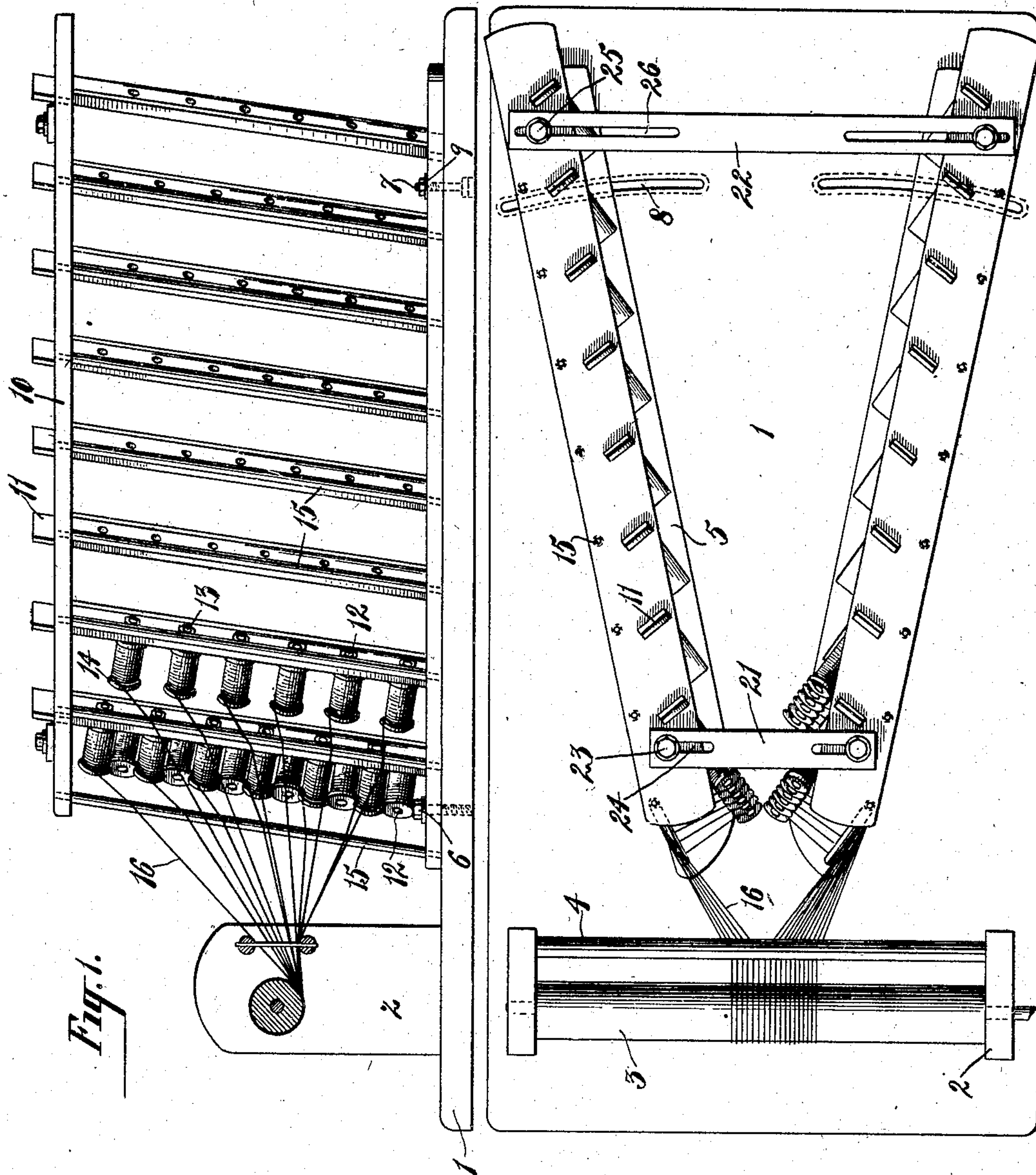
PATENTED JUNE 6, 1905.

I. E. PALMER.

WARP CREEL.

APPLICATION FILED JAN. 28, 1904.

2 SHEETS—SHEET 1.



Witnesses:

F. S. Hackenberg

Henry Thieme

Fig. 2.

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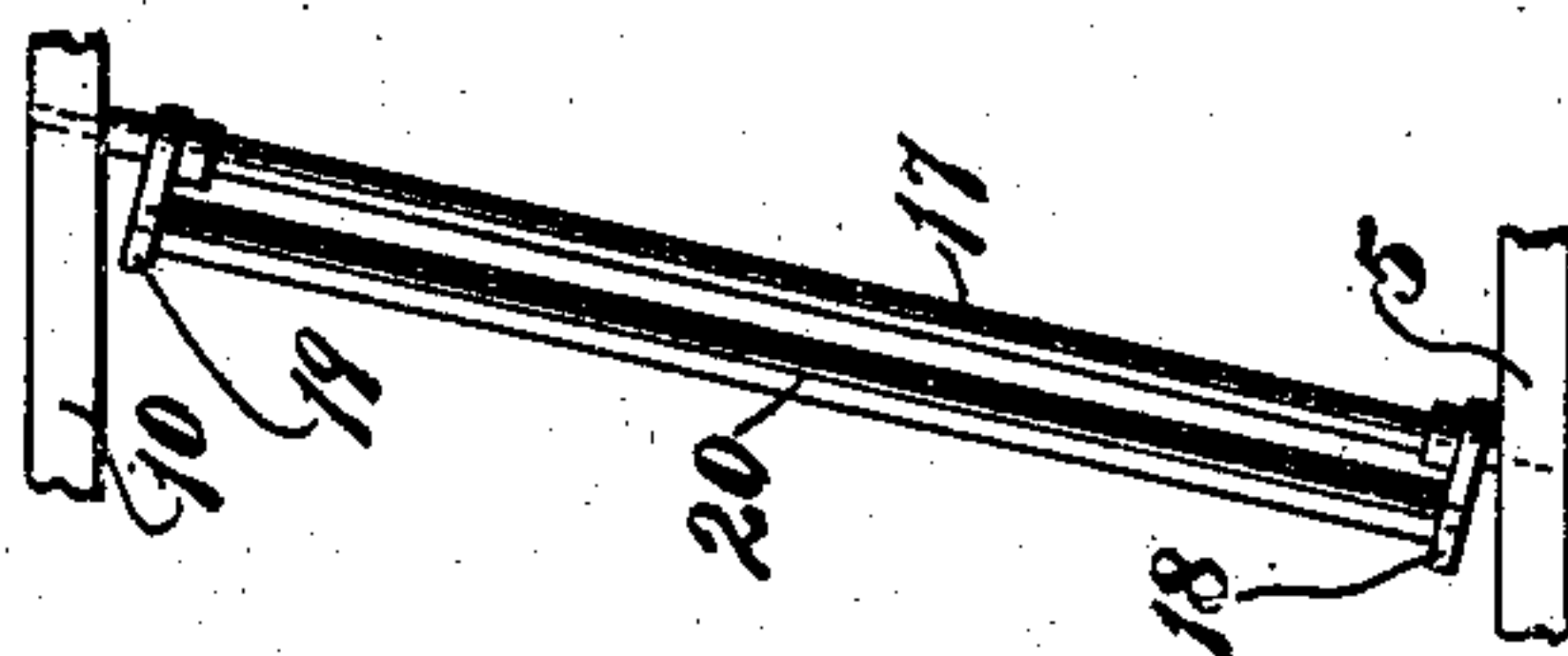
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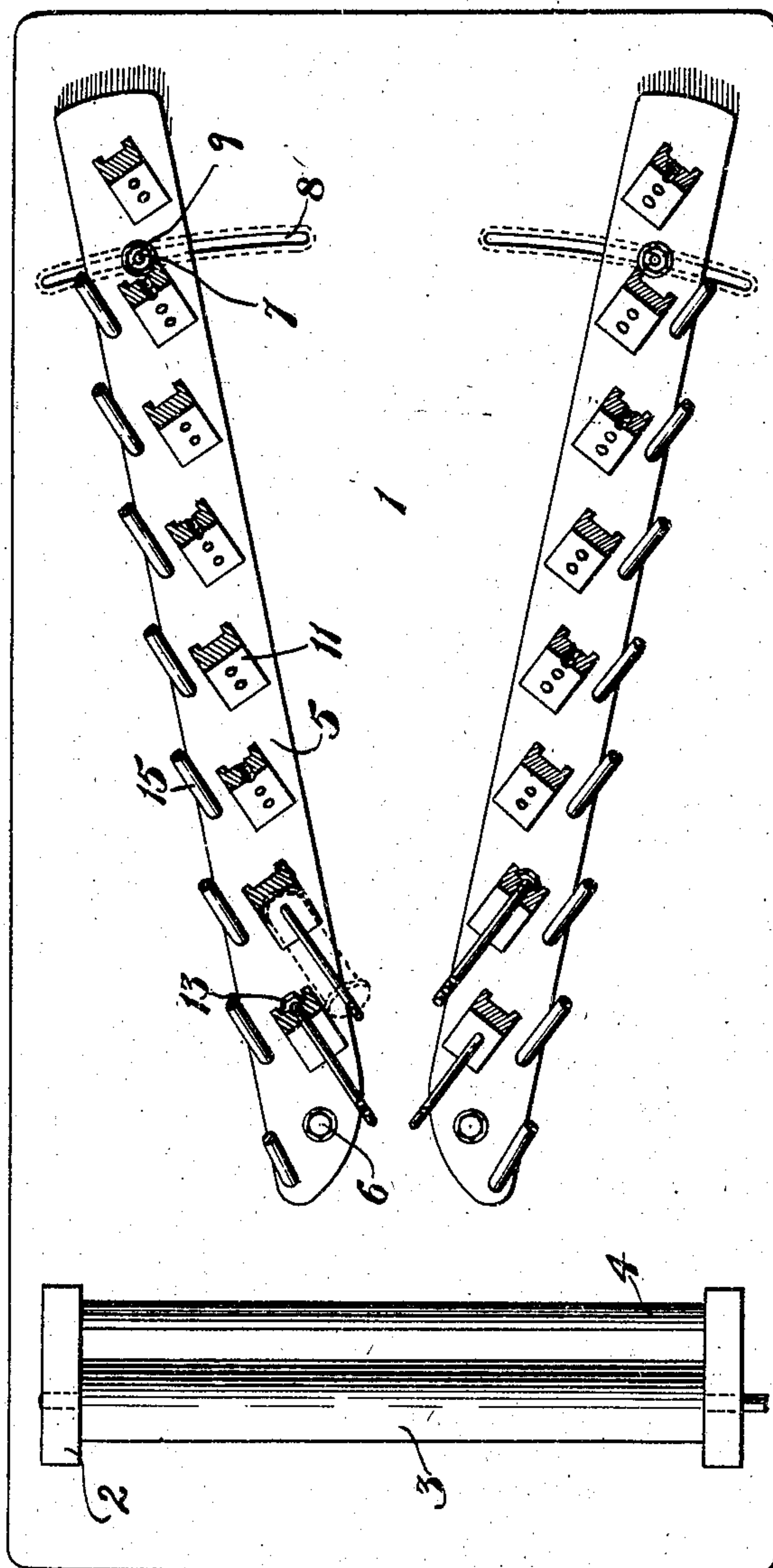
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2 SHEETS—SHEET 2.

*Fig. 4.*



*Fig. 3.*



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# UNITED STATES PATENT OFFICE.

ISAAC E. PALMER, OF MIDDLETOWN, CONNECTICUT.

## WARP-CREEL.

SPECIFICATION forming part of Letters Patent No. 791,722, dated June 6, 1905.

Application filed January 28, 1904. Serial No. 190,944.

*To all whom it may concern:*

Be it known that I, ISAAC E. PALMER, a citizen of the United States, and a resident of Middletown, in the county of Middlesex and State of Connecticut, have invented a new and useful Improvement in Warp-Creels, of which the following is a specification.

My invention relates to an improvement in warp-creels, and has for its object to provide certain improvements in the construction, form, and arrangement of the several parts of the creel whereby yarns may be wound onto the warp-beam with a minimum amount of friction, thus reducing the tendency of the yarns to stretch as they are being wound upon the beam.

A further object is to provide a structure in which the spools may be readily doffed from their supporting-pins when the yarns have been exhausted therefrom and full spools quickly replaced on the said pins.

A further object is to provide a structure of the above character in which a wide range of adjustability is given to the spool-racks whereby the angular position of the racks on their base and also the angular position of the pin-bars laterally may be adjusted with the greatest accuracy.

A practical embodiment of my invention is represented in the accompanying drawings, in which—

Figure 1 shows the creel in side elevation, the warp-beam and reed being shown in section. Fig. 2 is a top plan view of the creel. Fig. 3 is a horizontal section through the same, and Fig. 4 shows a modified form of roller around which the yarns are passed after leaving the spools.

A suitable base 1 is provided which forms a support for the creel-rack and also may form the support for the bearings 2, in which the warp-beam 3 is fitted to rotate, which bearings 2 also support the spacing-reed 4 of usual form.

Each of the two racks which support the spools is constructed as follows: A bottom strip 5 is pivoted to the support 1 at the forward end of the said strip, as shown at 6, by means of a bolt or other suitable device. The rear end of the strip 5 is adjustably secured

to the support 1, so as to bring the rack into different angular positions with respect to the warp-beam. In the present instance I have shown the rear end of the bottom strip 5 as having a pin-and-slot connection 7 8 with the support 1, the pin 7 having a clamping-nut 9 arranged to secure the bottom strip 5 of the rack rigidly in its desired angular position. The top strip 10 of the rack is loosely connected to the bottom strip 5 by means of pin-carrying bars 11, which bars slant rearwardly from the bottom strip 5 to the top strip 10 and have a slight yielding movement in said strips. Reduced portions of the bars 11 extend through the top strip 10 to permit this loose connection. These bars 11 are provided with spool-carrying pins 12, arranged in vertical series on each bar. In the present instance I have shown these pins as being secured to the bars by screw-threading their inner ends and providing nuts 13, engaging the ends at the back of the bars. However, it is to be understood that these pins may be secured to the bars in any desired manner. Because of the inclination of the bars the pins 12 project upwardly from the fronts of the bars sufficiently to retain the spools 14 thereon without additional retaining devices at the outer ends of the pins. These bars 11 not only slant rearwardly; but their fronts are arranged at an angle with respect to the longitudinal direction of the strips 5 and 10 of the rack, so that the spools 14 upon one vertical series of pins 12 may be removed from the pins by passing them by the inner side of the bar immediately in front of them. This permits the ready insertion and removal of the spools and at the same time increases the capacity of the rack. Cylindrical guide bars or rollers 15 extend from the bottom strip 5 to the top strip 10 of the rack adjacent to the outer sides of the bars 11, around which bars the yarns 16 pass as they leave the spools. These bars 15 are preferably roller-bars mounted in suitable bearings in the bottom and top strips, so as to reduce the friction on the yarns passing around them.

In Fig. 4 I have shown a modified form of roller-bar in which a stationary bar 17 is secured to the bottom and top strips 5 and 10,



which bar is provided with lower and upper arms 18 19, forming bearings for a guide-roller 20. These bars 15 also lead rearwardly from the bottom to the top strip substantially parallel with the pin-bars 11.

The top strips 10 of the two racks are connected by front and rear spacing-bars 21 22. The front bar 21 has pin-and-slot connections 23 24 with the front ends of the top strips 10 of the two racks, and the rear bar 22 has pin-and-slot connections 25 26 with the rear ends of the said top strips of the racks. These pins 23 25 are clamping-pins, so that the tops of the two racks may be forced apart or drawn toward each other after the bottoms of the racks have been secured in position, thus obtaining a wide range of adjustability for the two racks.

The creel constructed as hereinbefore described is one in which access to all of the spools may be readily obtained by permitting the operative to enter between the racks and in which the spools may be instantly removed or replaced, thus materially increasing the output of the creel. Furthermore, the friction upon the yarns is materially reduced, thus preventing the stretching of the yarns and also permitting a more rapid winding of the same onto the warp-beam.

What I claim is—

1. A creel comprising bars spaced one from another and spool-carrying pins secured to said bars, the said spool-carrying pins being projected from said bars at an upward inclination from a horizontal plane for retaining the spools thereon, the said spool-carrying pins at the same time being projected laterally at an angle oblique to the plane of the said bars.

2. A creel having a rack comprising bottom and top strips, bars connecting the said strips and spool-carrying pins secured to said bars, the said pins being projected upwardly from said bars at an angle to the rack to permit the spools to be readily inserted and removed and for retaining the spools thereon.

3. A creel having a rack comprising bot-

tom and top strips, bars extending rearwardly from the bottom strip to the top strip and spool-carrying pins projected permanently upwardly from the said bars at an angle to the rack to permit the spools to be readily inserted and removed and for retaining the spools thereon.

4. A creel having a rack comprising bottom and top strips, bars extending rearwardly from the bottom to the top strip having their front faces at an angle thereto and spool-carrying pins projecting upwardly from the front faces of the bars for retaining the spools thereon.

5. A creel comprising a base, a rack having spool-carrying bars thereon and means for adjusting the rack into different positions on its base and also in different angular positions with respect to the base.

6. A creel comprising a base, two racks having spool-carrying bars, means for adjusting the racks into different positions with respect to each other on the base and means for adjusting the racks into different angular positions with respect to the base.

7. A creel having a rack comprising bottom and top strips, bars connecting the same, spool-carrying pins projecting upwardly from the said bars at an angle to the rack and a guide-bar parallel with each pin-carrying bar for engaging the yarns as they leave the spools.

8. A creel having a rack comprising bottom and top strips, bars connecting the same, spool-carrying pins projecting upwardly from the said bars at an angle to the rack and a roller-bar parallel with each pin-carrying bar arranged to engage the yarns as they leave the spools.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 23d day of January, 1904.

ISAAC E. PALMER.

Witnesses:

CHAS. M. SAUER,  
PAUL S. CARRIER.