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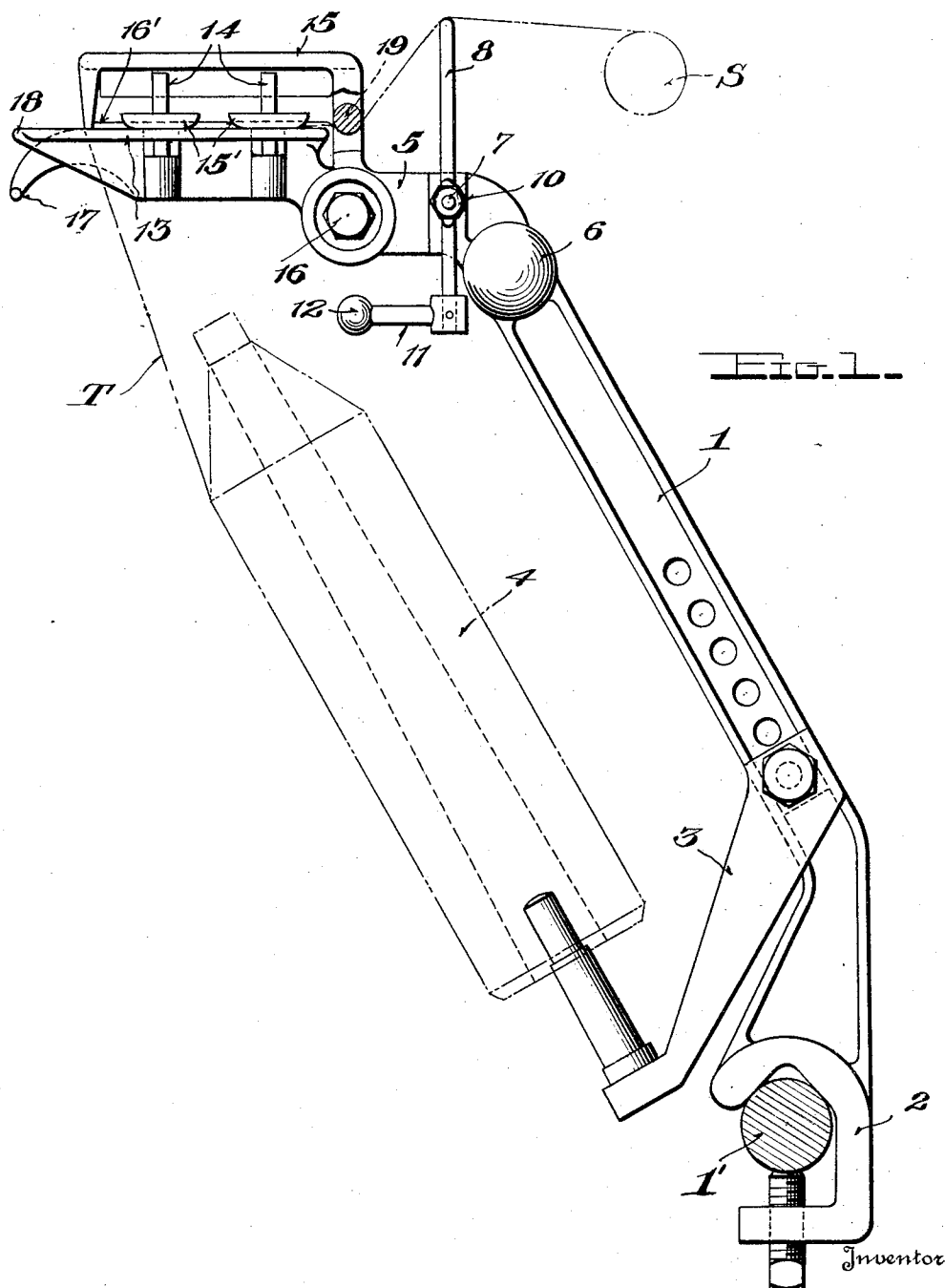
A. E. BEACHEN

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WINDING OR SPOOLING MACHINE

Filed Sept. 28, 1928

2 Sheets-Sheet 1



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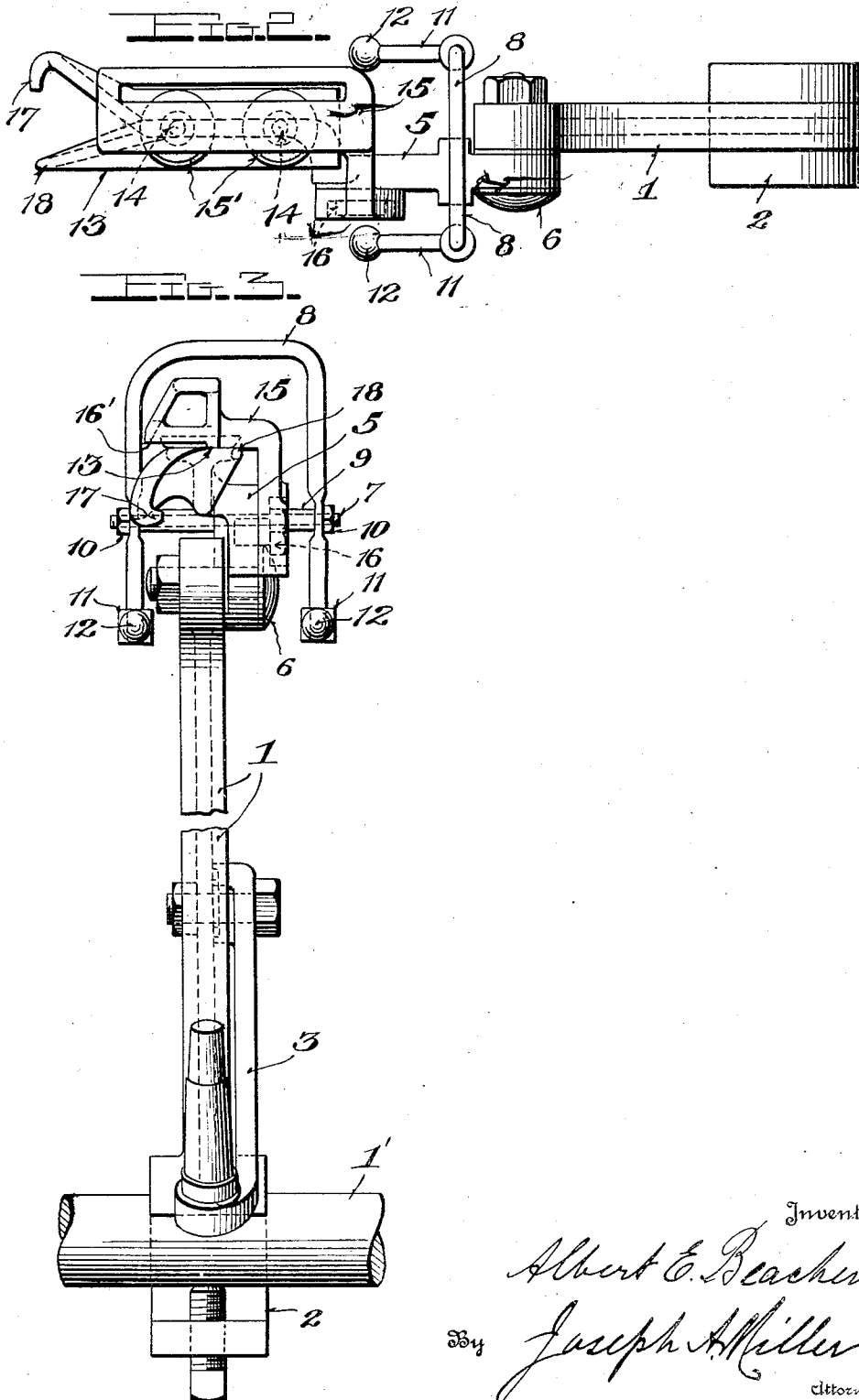
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WINDING OR SPOOLING MACHINE

Application filed September 28, 1928. Serial No. 308,911.

This invention relates to certain new and useful improvements in winding or spooling machines and pertains more particularly to means for tensioning the yarn.

The primary object of the invention is to provide novel means for effecting uniform tensioning of the yarn as same is laid on the spool.

A further object of the invention is to provide a tensioning means which enables the yarn to be easily and quickly threaded into engagement therewith, and to also provide tensioning means wherein the winding spool which takes up the yarn from the bobbin is horizontally disposed, as distinguished from the customary vertical disposition of such spool in the prior art.

The invention has still further and other objects which will be later set forth and manifested in the course of the following description.

In the drawings:—

Figure 1 is a side elevation of the invention, partly in section;

Figure 2 is a top plan view, and

Figure 3 is a front elevation.

In proceeding in accordance with the present invention, an inclined arm 1 is employed which may be secured to the cross bar 1' of the machine by means of a clamp 2, the arm having a bobbin support 3 adjustably secured thereto to accommodate bobbins 4 of varying lengths and to also support such bobbins at varying heights.

A head 5 is adjustably attached to the arm 1 by means of a nut and bolt 6 and is provided with a horizontal rod 7 upon which is pivotally mounted an inverted U-shaped thread engaging member 8. A sleeve 9 and nuts 10 are mounted on the rod 7 to hold the member 8 in position. The legs of the member 8 are pivotally mounted on the rod 7 at points intermediate the length of the legs. Horizontal arms 11 are secured at one end to the lower ends of the legs of the member 8 or may form part thereof and carry counterweights 12 at their opposite ends.

The head 5 is formed with a horizontal table or thread engaging face 13 through which projects a pair of vertical guide rods 14, the

latter slidably supporting a pair of weights 15' that are responsive to the action of gravity and function to hold the yarn under tension upon the table 13.

An arm 15 is secured by means of a nut 16 to the head 5, and the latter is formed with a thread engaging finger 17 that depends therefrom and with a thread guide 18 which latter is disposed at the front end of the table. A transverse thread engaging guide rod or roller 19 is carried by the arm 15 at its rear.

In operation, the yarn or thread T, from the bobbin 4 is positioned between the finger 17 and guide 18 and is then slid laterally on the table 13 and beneath the weights 15' under the guide 19, finally engaging over the member 8, and passes to the spool S.

The yarn is thus tensioned at two points occupying different planes and due to the counterweighted member 8, the yarn is uniformly tensioned as it passes to the spool, which tensioning occurs between the spool and the initial tensioning exerted by the weights, but in a plane higher than that of the weights. The arm 15 has a top which extends longitudinally of the table and is common to and lies close to the tops of each of the rods 14 so as to prevent the weights 15' from becoming disengaged from the rods.

The arm 15, preferably has a horizontal guide 16' to facilitate movement of the thread beneath the weights.

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

1. In a tension mechanism, a bobbin support a head secured to the support and having a horizontal table at its front, a horizontal rod secured to the head, an inverted U-shaped yarn engaging member having its legs pivoted intermediate their ends to the rod, horizontal arms secured to the lower ends of the legs of said member and having counterweights thereon, guide rods projecting upwardly from the table, gravity-responsive weights slidable on the rods, said table having a depending yarn engaging finger and an upper yarn guide at its front, an arm secured to the head and having a transverse yarn guide at its rear and a horizontal thread-

ing guide overlying the table, and a horizontal spool rearwardly of said member, the latter having its thread engaging part located above the slidable weights.

2. In a tension mechanism, a bobbin carrier, a pivoted counterweighted yarn engaging member carried by the carrier, a horizontal table, slidable gravity responsive weights carried by the table to hold the yarn against the table, a yarn engaging finger at the front of the table, an arm having a transverse yarn guide below the yarn engaging part of said member and having a horizontal threading guide overlying the table; and a horizontal spool rearwardly of said member.

3. In a tension mechanism, a bobbin support, a head secured to the support and having a horizontal table at its front, a horizontal rod secured to the head, an inverted U-shaped yarn engaging member having its legs pivoted intermediate their ends to the rod, counterweights carried by the said member, gravity responsive weights carried by the table to hold the yarn thereagainst, a yarn engaging finger at the front of the table, an arm carried by the table and having a horizontal threading guide overlying the same, and a transverse yarn guide between the weights and said member, and a horizontal spool rearwardly of the member.

4. In a tension mechanism, a bobbin support, a head secured to the support and having a table; a yarn engaging member at the rear of the head, vertical rods on the table, weights slidable on the rods, an arm secured to the head and having a top part extending longitudinally of the table and disposed in close proximity to the upper ends of each of the rods, and a horizontal guide on one of the sides of the arm overlying and cooperating with the table to guide the yarn in movement of the latter to a position beneath each of the slidable weights.

5. In a tension mechanism, a bobbin support, a head secured to the support and having a table, an arm secured to the head, gravity responsive weights on the table to hold the yarn thereagainst, a horizontal guide on one of the sides of the arm overlying and cooperating with the table to guide the yarn in movement of the latter to a position beneath each of the weights, and a yarn engaging member rearwardly of the weights.

In testimony whereof I have signed my name to this specification.

ALBERT E. BEACHEN.