Oct. 4, 1938. C. STANSFIELD 2,132,055

SPINNING MACHINE

Filed May 1, 1937 2 Sheets-Sheet 1

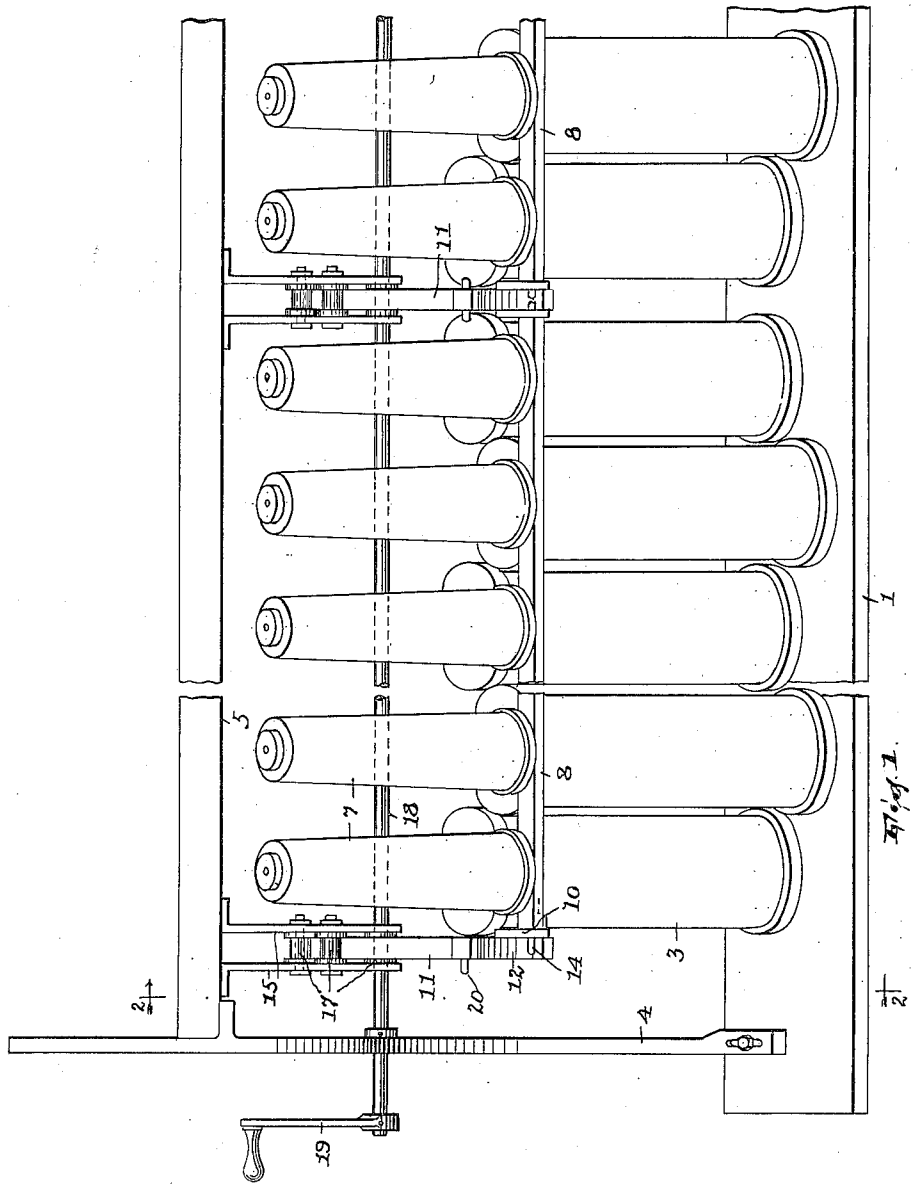


Fig. 1.

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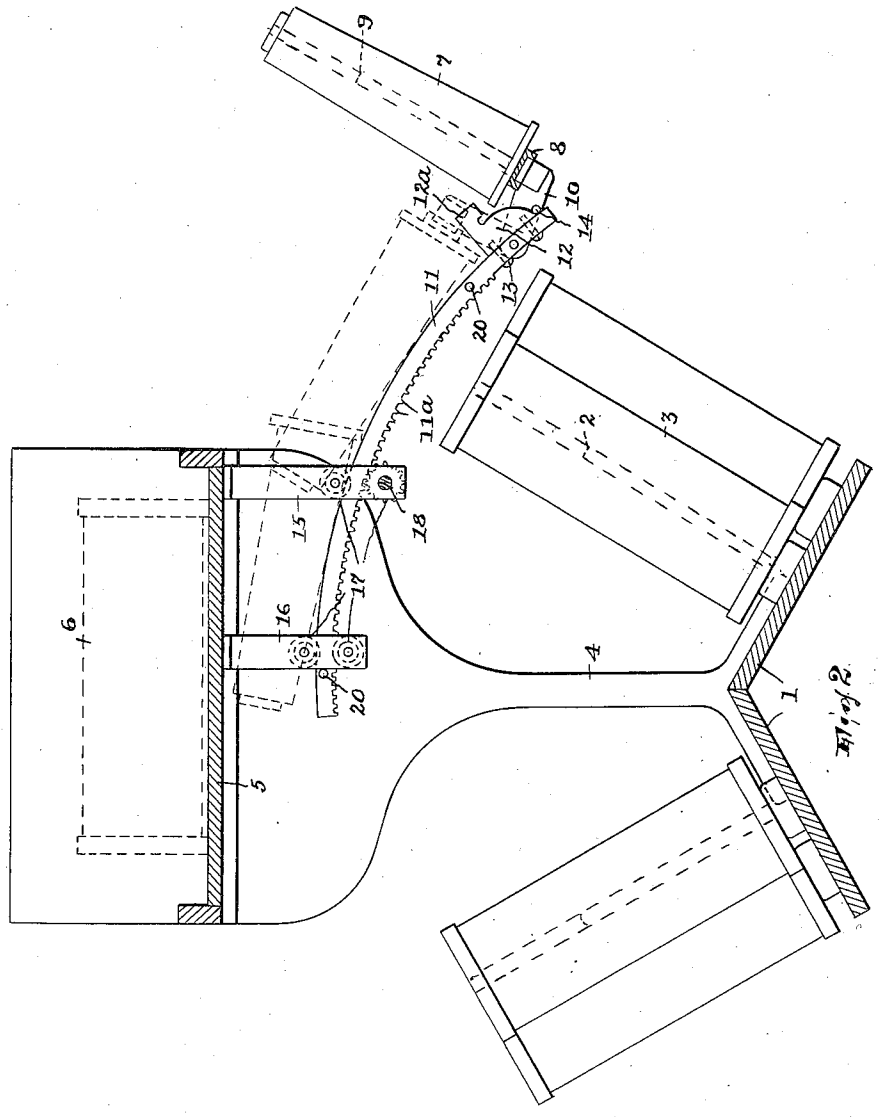


Fig. 2.

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UNITED STATES PATENT OFFICE

2,132,055

SPINNING MACHINE

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Application May 1, 1937, Serial No. 140,094

6 Claims. (Cl. 242—139)

In the ordinary worsted spinning machine, given the active roving or supply spools, the spinning units below and forward of such spools and the drawing and retaining rolls between the roving spools and the spinning units (the retaining rolls being usually adjustable toward and from the drawing rolls), the reserve or empty spools which are to replace those on the spindles of the spinning units when the latter spools are filled and doffed are usually supported on pegs or skewers pivoted on the respective retaining roll assemblies so that they can be shifted to a more or less forwardly projecting position for removing the spools therefrom and placing fresh empties thereon or to a position in which they project rearwardly and toward the active roving spools, out of the way. Latterly, the receiving spools are being formed longer than heretofore so as to have greater capacity, the consequence of which is that when these spools are in their retracted or back positions they extend too closely to the active roving spools.

The object of this invention is to provide for supporting these reserve receiving spools, whatever their length, so that they will be in convenient reach of the attendant and need not in any way interfere with the spinning operation or be in the way of the attendant in such duties as may be necessary to that operation. To this end I have provided a rack to support the row of such spools and which overhangs the row of roving spools but may be pushed back transversely of such row and out of overhanging relation thereto when the roving spools require to be doffed and replaced by freshly filled ones. This rack desirably is movable from its overhanging relation to the roving spools back and upwardly, preferably having arcuately arched portions and being suitably guided in the fixed structure of the machine; thereby the row of reserve receiving spools thereon may be in convenient reach of the attendant when the rack is in its forward position, overhanging the active roving spools. In view of the presence usually in these machines of a rack or stand at the top of the machine for a reserve of filled roving spools the forward portion of my mentioned movable rack, being the portion which supports the row of reserve receiving spools, may be desirably pivoted in the remaining portion of such rack on a horizontal axis extending lengthwise of the machine, whereby, when the rack is moved back, the first-named portion may be swung back to bring such spools into a recumbent position, thus to clear and underlie the rack for the reserve roving spools.

In the drawings,

Fig. 1 is an elevation of so much of one side of a worsted spinning machine as includes and is pertinent to this invention; and

Fig. 2 is a sectional view on line 2—2, Fig. 1.

The fixed structure of the machine includes the usual stand or rack 1 to support on pegs 2 and thereby hold in upstanding positions the row of active roving spools or equivalent yarn supplies 3 and extending above such rack the uprights, such as 4, which carry the rack 5 for the reserve of filled roving spools or equivalent yarn supplies 6. The active receiving spools, the spindles-including spinning units on whose spindles such spools are mounted, such spinning units being arranged at a lower level than the rack 1, and the pairs of drawing and retaining rolls between each roving spool and the corresponding spinning unit, are not shown as not material but may be according to the usual construction. The empty receiving spools or equivalent yarn supplies in a row paralleling that of the reserve roving spools are shown at 7.

Describing my invention with reference to the single example thereof herein shown:

One part of my mentioned movable rack consists of alined rails 8 extending lengthwise of the machine, or parallel with said rows of spools, and having pegs or skewers 9 to hold in upstanding positions the spools 7. This rail has two arms 10. Other parts of said rack are elongated members 11 which extend transversely of said rows and rearwardly from and in alternation with the rails 8 and to what I term the forward ends of which (or their right hand ends in Fig. 2) the arms 10 of each such rail are pivoted on a common horizontal axis parallel with the latter. To limit the movement of each rail around its pivoting axis there may be blocks 12 secured on the forward end portions of members 11 by screws 13, the terminals of said members and projections 12a on the blocks affording stops engageable by studs 14 of the arms. In the example each member 11 is common to two rails.

This movable rack is shown in its forward position, overhanging the active roving spools and it is supported so as to be movable rearwardly out of overhanging relation to such spools so as to permit them to be doffed and replaced by others, as follows: Each member 11 extends between the brackets 15 and 16 arranged in pairs one forward of the other and depending from the rack 5 and hence forming parts of the fixed structure and such member also extends between the upper and lower grooved rollers 17 journaled

in and between the brackets of each pair, the forward two rollers being at a lower elevation than the rearward pair so that at least when the movable rack is forward its rail 8 is desirably depressed and also maintains the spools 7 in forwardly tilted positions to afford easy access in doffing the spools 7 thereon and replacing them with others.

For moving the rack back and forth the members 11 may have rack teeth 11a at their under sides and certain of the rollers 17 (as the lower forward roller in each set) may be formed as pinions affixed to a shaft 18 which extends lengthwise of the machine and is journaled in the fixed structure and has a crank 19 at one end.

Studs 20 on the members 11 may engage the brackets to limit the movement of the movable rack in each direction.

It is desirable that the movement of the rack should be in an arcuate arched path, for which purpose according to the present example the members 11 thereof are arcuately arched, as shown, to a common radius. Since the brackets 15 and 16, with their rollers, are spaced as indicated the rack will be confined in any position in its movement in such path against angular displacement around an axis parallel with that of the arc to which said members are formed. However, so long as the fixed structure and rack have interengaging guiding portions (here formed by the brackets and their rollers on the one hand and the members 11 on the other) one of which is arcuately arched as viewed lengthwise of the rows of spools and confines the rack when in any position in its movement against angular displacement around an axis parallel with that of the axis of the arcuately arched portion my invention will be accomplished.

I do not wish to be limited to the movable rack having the forward portion (formed by rails 8) pivoted to the remainder thereof. This construction is designed to be availed of where the rack 5 would, by being engaged by the spools 7, prevent the movable rack from being moved back far enough to permit the spools 3 to be removed and replaced by others. That is to say, in such a case before moving the rack back the attendant may tilt back each structure comprising a rail 8 and its spool-load to the dotted position shown so that in the retracted position of the movable rack the spools 7 will lie under rack 5.

Having thus fully described my invention what I claim is:

1. A machine of the class described including in combination, with an upright supporting structure having means to support a horizontal row of yarn supplies, a rack arranged to overhang said row when the latter is supported by said means and including, with parallel elongated members extending laterally from said structure and substantially perpendicular to said row on viewing the machine in plan, means carried by said members and arranged to support another row of yarn supplies paralleling the first row, said rack being movable in a path extending lengthwise of said members and toward said structure out of overhanging relation to the first row and said structure and members having interengaging guiding portions confining the rack against angular displacement out of said path.

2. The machine set forth in claim 1 characterized by said members being curved, as viewed lengthwise of said rows, around an axis below the members.

3. A machine of the class described including in combination, with an upright supporting structure having means to support a horizontal row of yarn supplies, a rack arranged to overhang said row when the latter is supported by said means and including, with parallel elongated members extending laterally from said structure and substantially perpendicular to said row on viewing the machine in plan, means carried by said members and arranged to support another row of yarn supplies paralleling the first row, said rack being movable in a path extending lengthwise of said members and toward said structure out of overhanging relation to the first row and said structure and members having interengaging guiding portions confining the rack against angular displacement out of said path, and means to move the rack in said structure including a rotary element journaled in one and geared with the other of them.

4. A machine of the class described including in combination with an upright supporting structure having means to support a horizontal row of yarn supplies, a rack projecting laterally from said structure and arranged to overhang said row when the latter is supported by said means and having the portion thereof remote from said structure affording means to support another row of yarn supplies paralleling the first row, said rack being movable in said structure and confined thereby to move therein around an axis below said rows and in a path which, viewing the machine in plan, is substantially perpendicular to said rows and said rack being so movable substantially out of overhanging relation to the first row.

5. The machine set forth in claim 4 characterized by said rack being curved, as viewed lengthwise of said rows, around an axis below said rack.

6. A machine of the class described including in combination, with an upright supporting structure having means to support a horizontal row of yarn supplies, a rack projecting laterally from said structure and arranged to overhang said row when the latter is supported by said means and having the portion thereof remote from said structure affording means to support another row of yarn supplies paralleling the first row, said rack being movable in said structure and confined thereby to move therein around an axis below said rows and in a path which, viewing the machine in plan, is substantially perpendicular to said rows and said rack being so movable substantially out of overhanging relation to the first row, and means to move the rack in said structure including a rotary element journaled in one and geared with the other of them.

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