

W. C. PEIRCE.  
 ROVING MACHINE.  
 APPLICATION FILED MAR. 30, 1910.

1,021,626.

Patented Mar. 26, 1912.  
 2 SHEETS—SHEET 1.

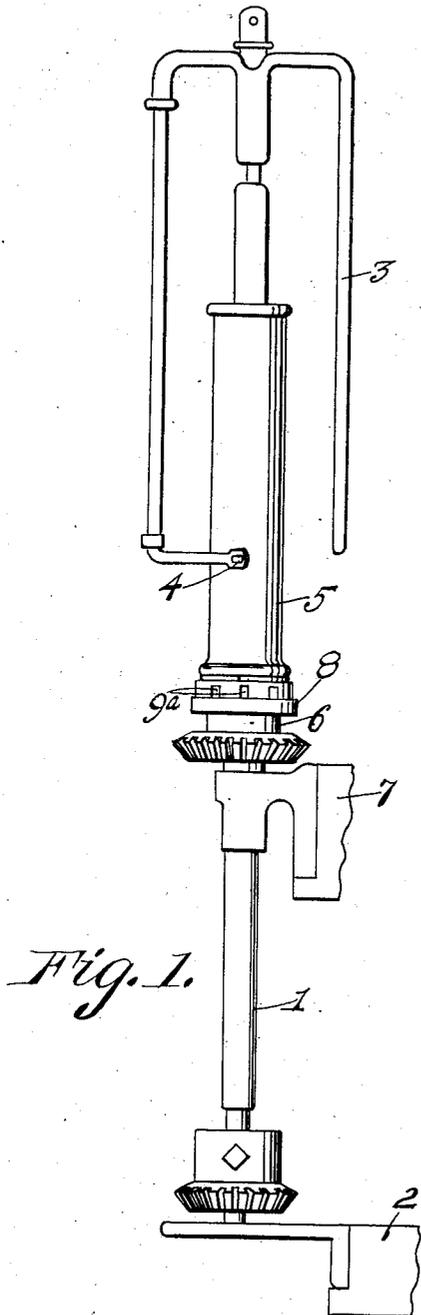


Fig. 1.

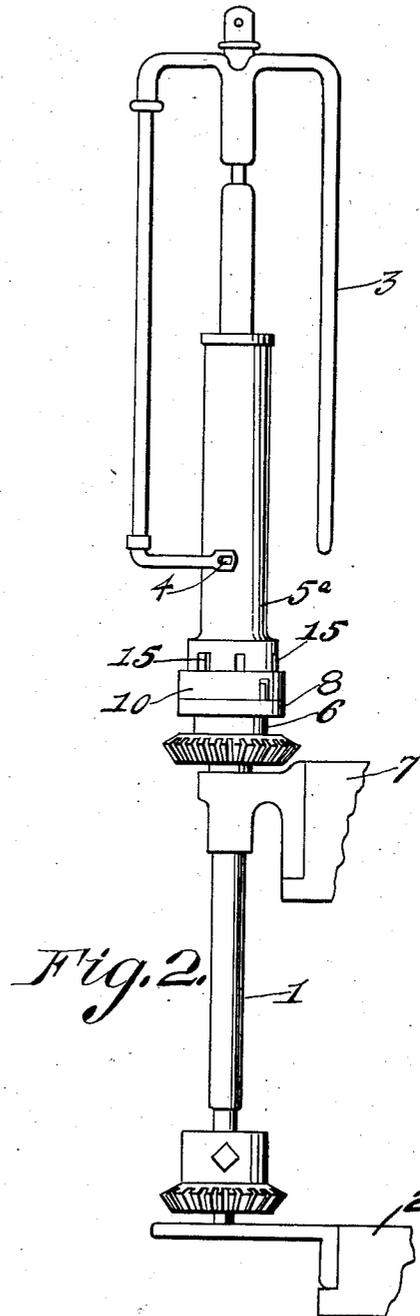


Fig. 2.

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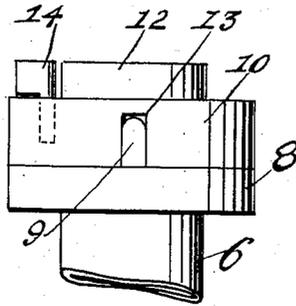


Fig. 3.

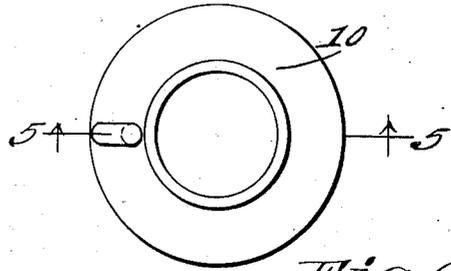


Fig. 4.

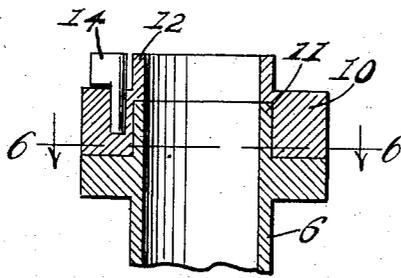


Fig. 5.

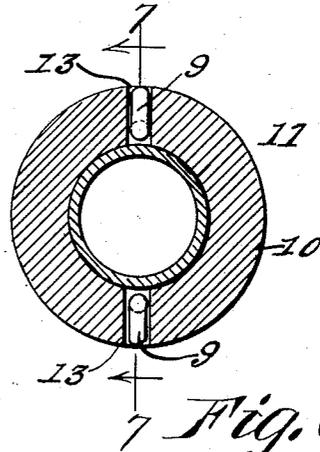


Fig. 6.

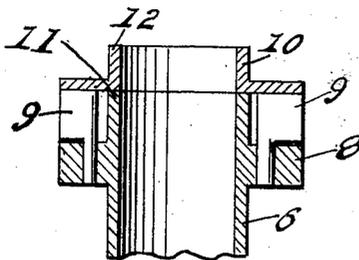


Fig. 7.

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# UNITED STATES PATENT OFFICE.

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## ROVING-MACHINE.

1,021,626.

Specification of Letters Patent.

Patented Mar. 26, 1912.

Application filed March 30, 1910. Serial No. 552,435.

*To all whom it may concern:*

Be it known that I, WILLIAM C. PEIRCE, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented a new and useful Improvement in Roving-Machines, of which the following is a specification.

This invention relates to an improvement in roving machines, and pertains particularly to the mounting for the bobbins.

In roving machines the spindles on which the fliers are supported are mounted vertically in groups, and are driven by means of shafts connected thereto by bevel gears. The bobbins are mounted to reciprocate on the spindles to cause the fliers to present their delivery eyes alternately at the bottoms and the tops of the bobbins. It is common practice in spinning mills to spin in succession a fine or coarse roving on the frames, and if a frame has been set to spin a coarse roving on, for instance, an eight inch bobbin, and it is desired to spin a fine roving on the same frame, it is necessary to use a seven inch bobbin. This circumstance necessitates setting up the builder motion and the rail carrying driving mechanism for the bobbin, since, as above stated, the delivery eye of the flier must occur along the middle of the bobbin successively at the bottom and the top thereof.

It is the intention of the present invention to provide an improved means, whereby bobbins of varying sizes may be used without the necessity of changing the mechanisms of the machine or frame except as to adjusting the traverse motion for the desired movement of the bobbin, as is commonly done in the starting up of all frames.

With this object of simplifying the operation or the interchangeability of the bobbins in roving frames in view, my invention will hereinafter be more fully set forth and described, reference being had to the accompanying drawings, in which—

Figure 1 is an elevation of a roving frame spindle showing the flier mounted thereon, and also what I will term an eight inch bobbin in position. Fig. 2 is a similar view showing the application of my invention with what I will term a seven inch bobbin.

Fig. 3 is an elevation of the upper end of a roving machine or frame bobbin support showing my improvement mounted thereon. 55  
Fig. 4 is a plan view of the invention. Fig. 5 shows a sectional elevation of the device as applied in Fig. 3 and taken on line 5 5 of Fig. 4. Fig. 6 is a horizontal sectional view taken on line 6 6 of Fig. 5, and Fig. 7 60 is a vertical section taken on line 7 7 of Fig. 6.

Referring more particularly to said drawings, in which like numerals indicate like parts throughout, 1 indicates one of the 65 spindles of a roving frame supported in a step bearing formed on or secured to the step rail 2 of the frame.

3 indicates the flier secured to the top of the spindle and having the delivery eye 4 70 located to traverse the middle line of the bobbin as the latter is vertically reciprocated. Said bobbins, indicated by numerals 5 and 5<sup>a</sup> in Figs. 1 and 2 respectively, are mounted upon collars 6, revolvably 75 carried by the bolster rails 7, which may be reciprocated by the usual mechanism (not shown). Said collars 6 consist, after the manner of the usual construction, of a tubular member whose lower end is stepped in 80 said bolster rail 7 in any suitable manner, and is provided near said lower end with a bevel gear which is or may be formed integral with said collar and has provided at its upper end an outstanding ledge or flange 85 8 upon which the bobbin is adapted to rest. The upper face of said flange or ledge 8 is provided at preferably diametrically opposite points with the radially elongated up- 90 standing lugs 9, which are adapted to engage in the longitudinally formed recesses 9<sup>a</sup> provided in the base or foot of the bobbin 5, so that, when the latter is slipped over the spindle 1 and seated upon the ledge 8, with the lugs 9 in engagement with either 95 of the said recesses 9<sup>a</sup>, the bobbin will be rotated with the collar 6, as the latter is moved by reason of its engagement through the bevel gear with the driving mechanism (not shown). 100

The above describes what is old in the art, and it will be readily recognized by those familiar therewith, that, with the frame set to spin a coarse rove, the eye 4 of the flier 3

practically traverses the middle line of bobbin 5 from end to end, as said bobbin is moved vertically of the spindle 1 in the operation of the machine. If it is now desired to spin a fine rove with the same setting of the frame, the machine is provided with a seven inch bobbin 5<sup>a</sup> in connection with the collar or secondary mounting 10. Said collar or mounting 10 consists of a cylindrical block having a longitudinal bore adapted to snugly fit the upper extension 11 of the collar 6, and also having an upper extension 12 whose internal bore coincides or substantially continues the bore of the tubular member or collar 6, thereby forming an elevated shoulder or ledge corresponding to the ledge 8 of the collar 6. The mounting 10 is provided with radial recesses 13, located to engage the lugs 9 formed on the ledge 8, so that when said mounting 10 is seated on the said ledge 8 it is locked thereto to rotate with the collar 6. The upper face of the mounting 10 is provided with one or more radially extended lugs 14 which are adapted to engage the recesses 15 formed in the bases of the bobbins 5<sup>a</sup> after the manner of the inter-engaging lugs 9 and recesses 9<sup>a</sup> above described. Thus, as is apparent, when the bobbins 5, shown as the eight inch bobbins in Fig. 1, are to be substituted for the seven inch bobbins 5<sup>a</sup> of Fig. 2, in order to permit the spinning of a finer rove it is not necessary to change the whole setting of the builder motion, but it is merely required to slip the secondary element 10 over the spindle and seat it upon the collar 6 before placing the bobbin 5<sup>a</sup> in position, this so elevating the bobbin 5<sup>a</sup> with relation to its progressive position behind the delivery eyes 4 that no further adjustment of the roving frame setting is required to properly and proportionately locate the varying position of the bobbin 5<sup>a</sup> behind said eye 4 to permit the spinning of the fine rove.

In frames as at present constructed the builder motion connecting and operating the lifters and other transverse parts is so attached and placed in the frame that the traverse is from the center of the bobbin in either direction. This traverse is adjusted by the dogs and reverse cams so that if a frame built for a seven inch bobbin is used the traverse after the setting of the dogs and cams will be three and one-half inches up and down from the center of the bobbin. If now six inch bobbins were placed on the spindles of the frame, no adjustment of the dogs and cams could be made to properly fill the bobbins, as there would be but two and a half inches above the center and three and a half inches below the center, therefore to alter a seven inch frame of the usual construction for the pur-

pose of using six inch bobbins, it would be necessary to re-locate the entire builder motion, and its connections to bring the traverse to uniform movement from the center of the six inch bobbins, whereas in the present invention by use of the half inch driving collars and the six inch bobbin is lifted, so that the center of the bobbin is in the predetermined center of the seven inch bobbin, then by simply setting the dogs of the traverse to regulate the up and down movement of the bobbins for the six inch bobbins the reversing cams will be properly acted upon to reverse the traverse as each layer of yarn is laid on the bobbin, the first layer representing a traverse of three inches up and three inches down from the center of the bobbin.

It is evident from the above exposition of my improved device, that a simple, effective and adequate means for changing the adjustment of a roving frame or machine is provided, when it is desired to change the machine from spinning a fine to a coarse rove and vice versa, and that it is not necessary to pursue the old course of taking down the whole structure of the builder motion.

Having thus described my invention, I claim as new and desire to secure by Letters Patent;—

1. In combination with bobbin rotating means having a ledge, bobbin locking means on said ledge, a secondary mounting adapted to seat on said ledge, said secondary mounting having a ledge which corresponds to said first named ledge, and having bobbin locking means thereon, said first named ledge serving both as a seat for the bobbin and as a seat for said secondary mounting, and said ledge of the secondary mounting serving as a seat for the bobbin, the bobbin being formed to co-act with the locking means of the first named support when the secondary mounting is removed and to co-act with the locking means of the secondary mounting when the latter is used, and the secondary mounting being formed to co-act with the bobbin locking means of the first named ledge when said secondary mounting is used.

2. In a roving machine, in combination with a support having a ledge, upstanding lugs carried by said ledge, an annular extension projecting upwardly from said ledge, a secondary mounting formed with a ledge and having its lower portion formed with an opening shaped to receive said extension and also provided with recesses to receive said lugs, an annular extension formed on the ledge of said secondary mounting and forming a continuation of said extension of the support, and upstanding lugs carried by the ledge of the secondary

mounting, the bobbin being formed with recesses to receive either the lugs of the support or mounting and being also adapted to receive either the extension of the support  
5 when the secondary mounting is out of use, or the extension of said mounting when the latter is in use.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

WILLIAM C. PEIRCE.

Witnesses:

ADA E. HAGERTY,  
J. A. MILLER.

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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."

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