No. 770,986. PATENTED SEPT. 27, 1904.

C. SELLA.

BALL BEARING FOR SPINDLES.

APPLICATION FILED DEC. 29, 1903.

NO MODEL.

Fig. 1

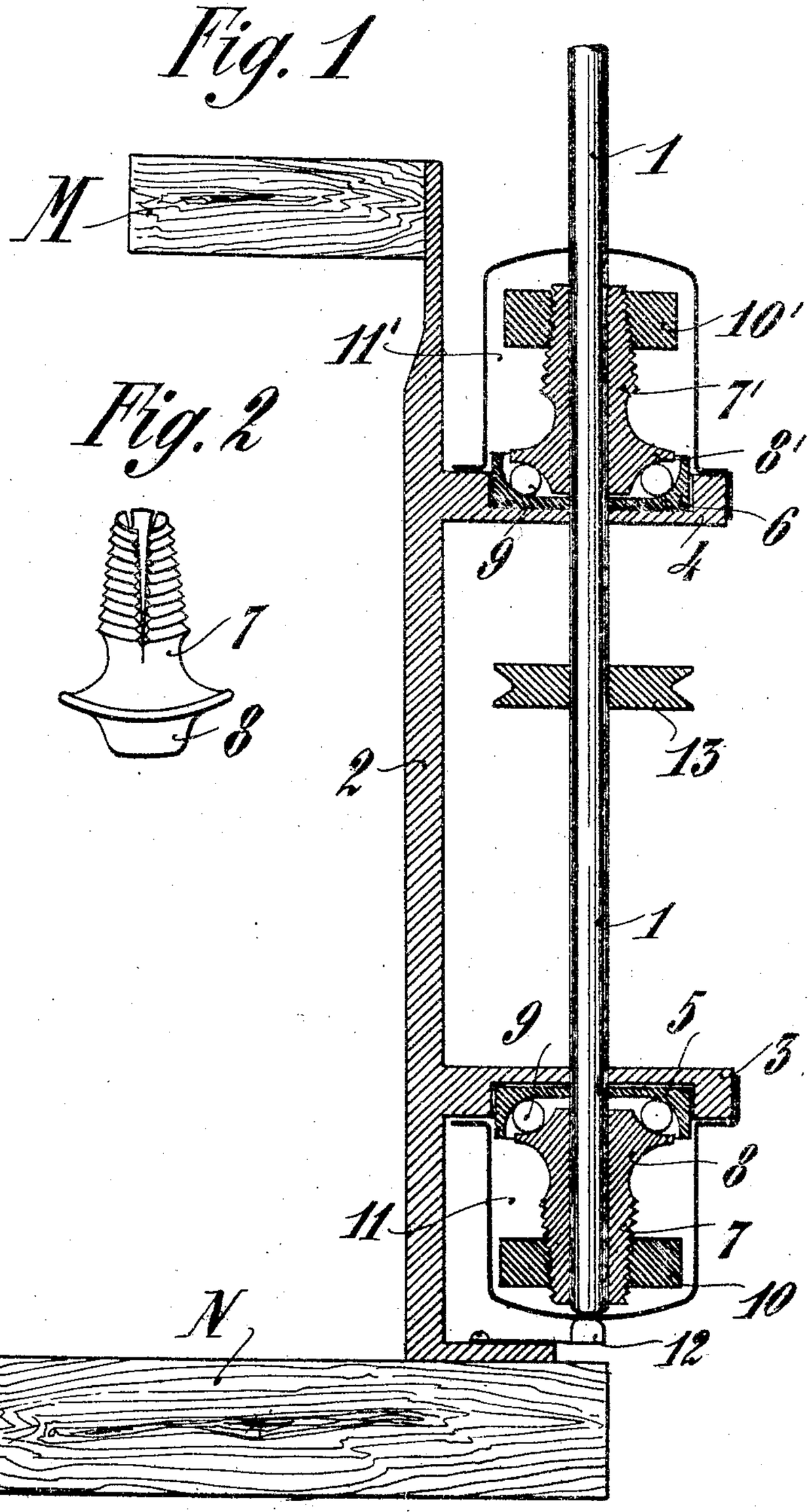

Fig. 2

WITNESSES

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ATTORNEYS

No. 770,986. Patented September 27, 1904.

UNITED STATES PATENT OFFICE.

CARLO SELLA, OF BIELLA, ITALY, ASSIGNOR OF ONE-HALF TO THE FIRM OF UMBERTO FROVA & CO., OF VERCELLI, ITALY.

BALL-BEARING FOR SPINDLES.

SPECIFICATION forming part of Letters Patent No. 770,986, dated September 27, 1904.

Application filed December 29, 1903. Serial No. 187,052. (No model.)

To all whom it may concern:

Be it known that I, CARLO SELLA, a subject of the King of Italy, residing at Biella, Italy, have invented an Improved Mounting for Spindles in Spinning and Twisting Frames, of which the following is a specification.

This invention has for its object to provide an improved mounting for the spindles in spinning and twisting frames, whereby the running of the machines is made more regular and rapid than hitherto, while they can be worked with less driving power, thereby effecting considerable economy.

The arrangement according to this invention can be applied to existing machines without costly alterations, and the spindles hitherto in use can be utilized.

In the accompanying drawings, Figure 1 shows in vertical section a part of a spinning and twisting frame illustrating the application of this invention thereto. Fig. 2 is a perspective view of a detail.

In the machines hitherto in use the spindles have been held at their upper part in circular bearings on the upper cross-beam M of the machine, while the lower ends of the spindles have been seated in footstep-bearings attached to the lower cross-beam N. As the beams M and N are not rigidly connected to each other the spindles so mounted have a tendency to shift, and this shifting is increased by rapid wear of the supports. When, therefore, the machine exceeds a certain speed, the spindles vibrate considerably, and this necessitates the machine being run at a low speed, from which obviously arises inefficiencies as regards both time and cost.

The improvement according to this invention consists in providing a support 2, preferably of metal, fixed in any suitable manner to the cross-beams M and N of the machine. This support is provided with brackets 3 and 4, each carrying for the respective spindle a ball-bearing 5 and 6, made preferably of steel and let into recesses in the brackets 3 and 4.

One of the spindles proper is shown at 1. They may be like the spindles hitherto in use; but in adapting the present improvements to an existing machine the spindles hitherto used therewith must be cut at their lower parts, so that their lower ends are above the cross-beam N, Fig. 1, and the spindles will be in the same positions as that which they before occupied. The recesses for the cups containing the balls consist of collars 7 and 7′, provided at one end with rims 8 and 8′, which are shaped so as to form conical races opposite the interiors of the ball-cups 5 and 6, the balls 9 beings placed between the said cups 5 and 6 and the conical rims 8 and 8′. The collars 7 and 7′ are provided with an axial hole for the spindle 1 to pass through with but little friction. Below the conical rims 8 and 8′ the collars 7 and 7′ are conically shaped, and each is provided with a screw-thread. The collars 7 and 7′ are also split along a part of their length, as shown in Fig. 2. On each of the screw-threads on the collars 7 and 7′ is screwed a nut 10 and 10′, which forces the split parts nearer together and clamps the collars tightly onto the spindle 1. By this arrangement the height of the spindles can be easily and rapidly adjusted. Casings 11 11′ protect the working parts from dust, the lower casing 11 may contain oil, so that the lower ball-bearing is immersed in the oil. This casing is supported by a piece 12, pivotally attached to the support 2, which piece 12 can be turned aside clear of the lower casing when the said casing is to be put in place or removed; but the casing can be supported in any other convenient manner. The upper casing is provided with a hole for the passage of the spindle 1 and rests on the bracket 4. Between the two brackets the spindle carries, as usual, a whirl 13 for receiving the band or cord by which rotary motion is imparted to the spindle.

Having now particularly described and ascertained the nature of my said invention and

in what manner the same is to be performed, I declare that what I claim is—

In spinning and twisting machines, the combination of the spindle, a support therefor having projections therefrom parts of ball-bearing races carried by said projections, split collars carried by the spindle, parts of ball-bearing races secured to the end thereof and means at the other end for clamping them to the spindle, substantially as described.

In witness whereof I have hereunto set my hand in presence of two witnesses.

CARLO SELLA.

Witnesses:

HUGO PIGGRINI,

MARIO CAPUCCIO.