

N. I. ALLEN.

TRAVELER FOR SPINNING-RINGS.

No. 175,001.

Patented March 21, 1876

Fig. 3.



Fig. 1.

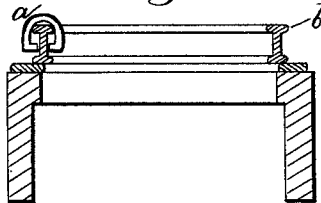
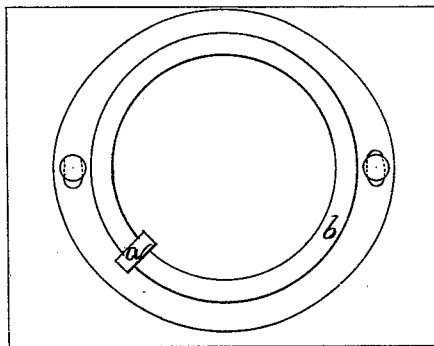


Fig. 2.



Witnesses.

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NICHOLAS I. ALLEN, OF MILFORD, MASSACHUSETTS.

IMPROVEMENT IN TRAVELERS FOR SPINNING-RINGS.

Specification forming part of Letters Patent No. **175,001**, dated March 21, 1876; application filed January 3, 1876.

To all whom it may concern:

Be it known that I, NICHOLAS I. ALLEN, of Milford, in the county of Worcester and State of Massachusetts, have invented an Improved Traveler for Spinning-Machines, of which the following is a specification:

In ring spinning-machines the material to be spun extends from the rollers under the traveler to the spindle, the latter revolves very rapidly and puts in the twist between the end of the spindle and the bite of the rolls, and the twisted thread is wound on the bobbin, carried by the spindle through the action of the traveler, that acts to retard the circular motion of the thread, holding it back by reason of the weight of the traveler and its friction on the race, so that the spindle revolving oftener than the thread and traveler enables the spindle to take up thread. The traveler, besides operating as a retarder for the thread, also acts to retain the thread at such a distance from the spindle and bobbin that the thread extending from the usual guiding-eye to the traveler will not touch the spindle or bobbin when the ring-rail is in its lowest position, and as the ring-rail is raised and lowered, the traveler acts as a guide to direct the thread in regular coils onto the bobbin, and to hold it sufficiently taut to lay the thread on the bobbin under the proper degree of tension.

Travelers are commonly made wide enough to produce the necessary amount of friction on the yarn, and for yarns of different grades or sizes travelers of different widths and thicknesses are employed, they being changed from time to time; and for fine yarns it is difficult to make a metallic traveler of sufficient width and thickness to operate without breaking the yarn.

For fine yarn the traveler must necessarily be made very light, and consequently so narrow and thin as to act on but a small portion of the yarn, forming too sharp an angle in, and consequently often breaking, the yarn; but this would not be the case if a traveler of the same weight had a greater surface for contact with the yarn.

This invention has for its object the production of a very light traveler, (and not necessarily a very narrow traveler,) and one of

such weight as not to be liable to break the finest yarns spun on ring spinning-machines; and the invention consists in a non-metallic traveler, made of horn, hard india-rubber, rawhide, or equivalent flexible material capable of being bent or sprung onto the ring-race.

Figure 1 represents in section a ring provided with one of the improved travelers. Fig. 2 is a top view thereof, and Fig. 3 a piece of material from which the travelers may be made.

The traveler *a* is composed of horn, and is applied to the race of the ring *b*, being sprung over the race-flange, the lower ends of the traveler coming together, so as nearly to touch the vertical portion of the ring, or that part just below the race. These travelers may be made of hard india-rubber, or of rawhide or other equivalent non-metallic substances having sufficient elasticity and strength to be sprung open and over and onto the ring-race, and it will be evident to those conversant with the action of these substances in connection with metallic surfaces that the race will not require oiling to allow the traveler to move freely, which is a great desideratum in spinning. These travelers may be made in various ways, one of which is illustrated in Fig. 3, where is shown a traveler, blank of horn or rubber, bent, molded, or fashioned in the shape of a trough, from which the travelers are cut transversely. The travelers may be made from narrow strips bent into the form shown in Fig. 1, or other well-known traveler forms, as now commonly practiced in the manufacture of steel travelers. The yarn draws the usual steel traveler, so as to cause its end to wear into or abrade the ring under the race; metal running against metal wears rapidly, and soon the race and traveler are worn from their original shape, and the drag on the yarn is made variable, which tends to break the yarn or make it of uneven diameter.

It is evident that this horn or equivalent traveler, of little weight as compared with metal of corresponding size, may be made larger or thicker than a metallic traveler, and yet not be too heavy for the yarn to move it, and this is advantageous, because I am thereby enabled to avail myself of the resistance

of the air to a greater degree than heretofore to assist in holding back or retarding the movement of the traveler and yarn, and the resistance offered by the air, as far as it applies, is very uniform and steady, much more even than the resistance due to the friction and action of the traveler on the race. It will also be evident that the race and the traveler of the material described will not abrade each the other, as will the metal, and the resistance due to frictional action of this improved traveler on the ring will be more uniform, and this uniform resistance is of great importance, for by it the yarn can be spun more evenly as to diameter, and without liability of being broken in its rapid movement; and, further, as the resistance is more uniform, it is possible to regulate the resistance, ac-

cording to the size and quality of yarn being spun or twisted, to a greater degree of certainty than with a metallic traveler. By the term "traveler" is meant that device that embraces or clasps and moves on the ring-race projecting above the surface of the ring-rail.

I claim—

A non-metallic traveler, substantially as herein described, and adapted to embrace and move on a ring-race, substantially as set forth.

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

NICHOLAS I. ALLEN.

Witnesses:

E. D. BANCROFT,
F. J. DUTCHER.