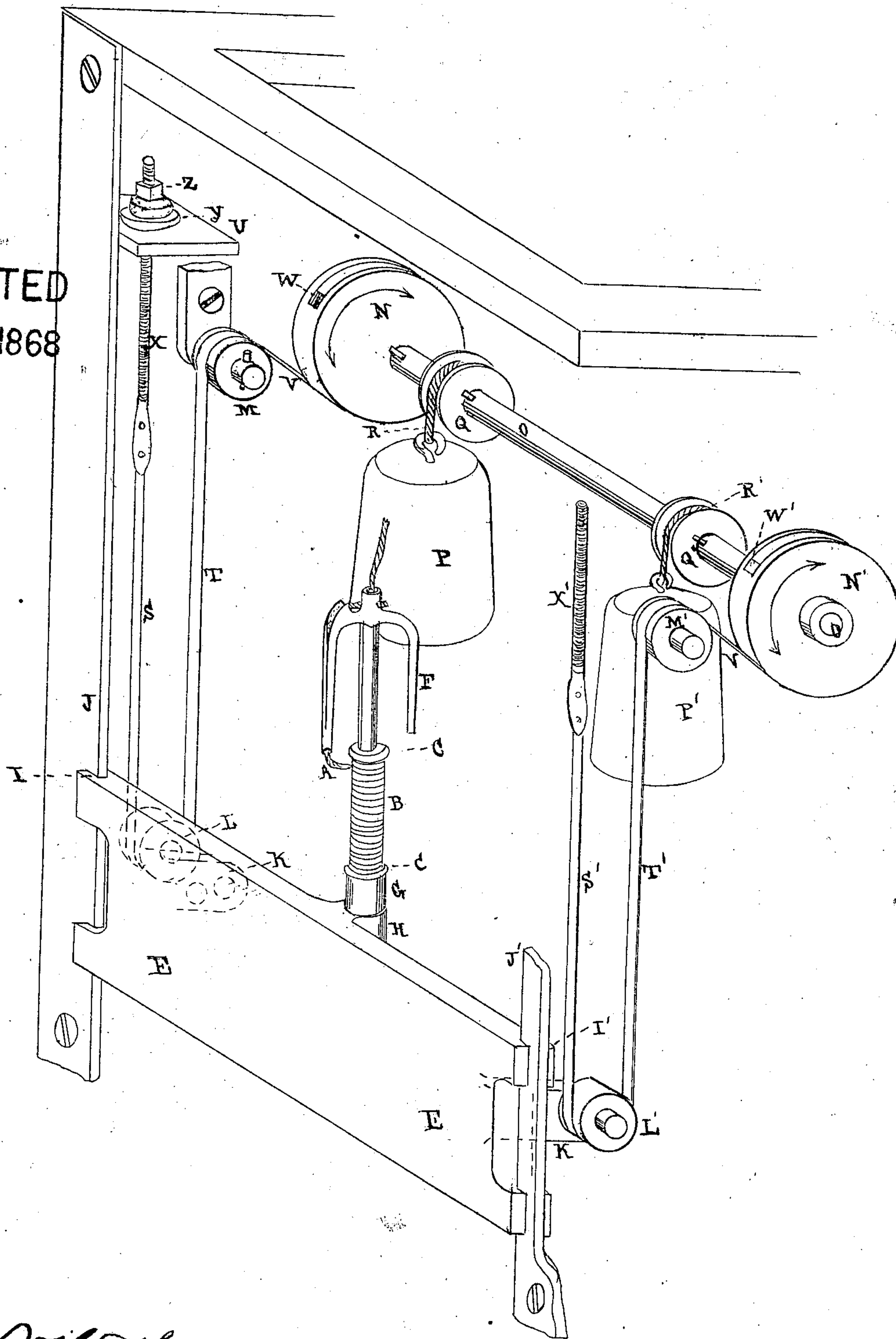


William H. Thompson's
 73267 Improvement in Roving-frames.

PATENTED
 JAN 14 1868



W. H. Thompson.

In presence of

{ J. D. Brooker
 John M. Batchelder. }

United States Patent Office.

WILLIAM H. THOMPSON, OF BIDDEFORD, MAINE.

Letters Patent No. 73,267, dated January 14, 1868.

IMPROVEMENT IN ROVING-FRAME.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, WILLIAM H. THOMPSON, of Biddeford, in the county of York, and State of Maine, have invented a new and useful Improvement in Roving-Frames; and I do hereby declare that the following is a full and exact description of the same, reference being had to the accompanying drawings, making a part of this specification.

My improvement is applicable to all kinds of machines that are used for making roving of fibrous substance preliminary to spinning the same into thread, usually known as speeders, extensors, slubbers, intermediates, jacks or fly-frames.

The main object and design of my improvement is the reduction in the cost of the machine, dispensing with several parts that are liable to get out of order, reducing the height of the machine, and facilitating the adjustment of the distance traversed by the rail, which governs the position on the bobbin of the several layers of roving. This is effected mainly by the use of a series of flexible steel bands, rigid and non-extensible in the direction of their length, but strong enough to support heavy weights, and capable of flexure upon fixed or movable pulleys.

The traverse-rail in the above-named machines is mainly supported by weights so applied as to act as a counterbalance. The lifting of the rail has heretofore been effected by means of chains, racks, and pinions. The chains become worn at every link or joint, and thus change in length, and the racks and pinions consume a great deal of power, and also cause a jerk when the motion of the rail is reversed.

By the use of the metallic bands for governing the motion of the rail, a uniform length of traverse of the rail is effected at each successive layer of the roving upon the bobbin, and it can be dropped lower or nearly into contact with the bottom rail, while at the same time its motion is steady and regular.

The supports or vertical framework, usually termed "Samsons," are placed at intervals in the length of the frame, and afford the means of attachment for the operating mechanism. At each of these Samsons, the pulleys and bands are attached, which give motion to the traverse-rail, their construction being as described below.

In the drawing, that part of a roving-frame only is represented that relates to this invention, viz, the vertical motion of the traverse-rail, by which the roving A is laid by the flier F, in regular coils, B, of definite length, upon the bobbin C. The flier has a rotary motion about the bobbin C, and the distance that the bobbin traverses is precisely the same as the rise and fall of the traverse-rail E. The bobbin rests upon the parts G H, which are raised and lowered by the rail E. In the ends of the rail there is a recess or groove, I, to receive the fixed vertical guides J J', upon which the rail traverses. Attached to the rail, upon the back side, there are projecting studs or arms, K K', which carry the friction-rollers L L', and above them, in the same plane, there are friction-rollers, M M'. In the rear of these, and at about the same level, there are pulleys, N N', attached to the traverse-shaft O, which move alternately in either direction, as indicated by the arrows.

The movements of the shaft O are caused and controlled by the same mechanism that is used in the common roving-frame, and my improvement relates to no other parts than those herein represented and set forth, all of which depend upon the motion of the shaft O.

In the drawing, the rail E is represented at its lowest point, and the counterbalance-weights P P' at their highest elevation. The cords or chains R R' of the balance-weights are wound partly around the pulleys Q Q', which are affixed to the traverse-shaft O.

The single metallic bands S T V, which impart vertical motion to the rail E, are thin, strong, and flexible. They are about an inch in width, and can be bent without injury around the pulleys L M N. The band is affixed at W to the pulley N, and nearly encircles it. Thence the part V passes over the friction-pulley M, which changes the direction of the band, and the part T passes downward and around the pulley L, thence upward at S, and is attached near the top of the frame to the suspension-screw X. This screw passes through a stud, U, near the top of the frame, and is raised or lowered by turning the adjusting-nut Z. This nut rests upon a metallic washer, having below it an India-rubber washer, Y, which has sufficient elasticity to prevent any sudden jar or concussion when the direction of the motion of the rail changes. The flexible metallic bands sustain the weight of the rail, and transmit such variable motions to the rail as are required for laying the roving

upon the bobbin, the shortening or elongation of the flexible band depending upon the rotation of the pulleys NN' upon which the band is wound.

By the use of the metallic bands, as herein applied and connected with the traverse-rail, I dispense with lifting-racks, pinion-gears, and studs, reducing the cost of the machine, saving power, and imparting a uniform and steady motion to the rail. If deemed desirable, the band may have a direct lift upon the rail without the intervention of the friction-pulley M.

What I claim, and desire to secure by Letters Patent, is—

The combination of a series of flexible metallic bands with the traverse-rail E, substantially as herein described and for the purpose specified.

WILLIAM H. THOMPSON. [L. s.]

Witnesses:

JOHN M. BATCHELDER,

S. A. BOOTHBY.