M. J. NEALON, T. HIGGINS & W. KNOTT.

BOLSTERS AND STEPS.

No. 186,749. Patented Jan. 30, 1877.

Fig. 1.

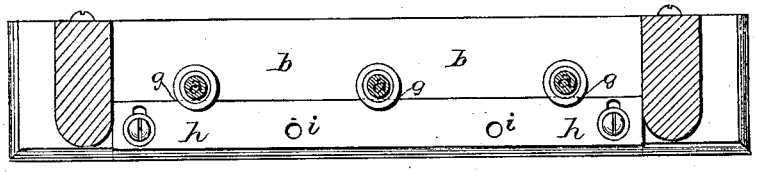
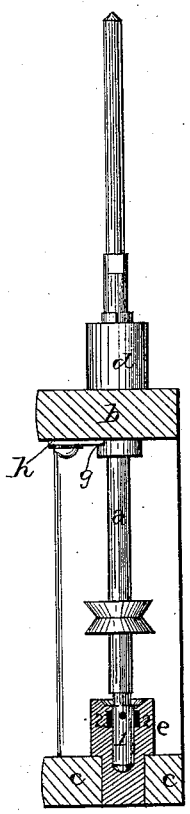


Fig. 2.



WITNESSES.

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UNITED STATES PATENT OFFICE.

MARTIN J. NEALON, TIMOTHY HIGGINS, AND WILLIAM KNOTT, OF CHESTER, PENNSYLVANIA.

IMPROVEMENT IN BOLSTERS AND STEPS.

Specification forming part of Letters Patent No. **186,749**, dated January 30, 1877; application filed September 22, 1876.

To all whom it may concern:

Be it known that we, M. J. NEALON, TIMOTHY HIGGINS, and WILLIAM KNOTT, of Chester, in the county of Delaware and State of Pennsylvania, have invented certain new and useful Improvements in Bolsters and Steps for Spindles; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it pertains to make and use it, reference being had to the accompanying drawings, which form part of this specification.

Our invention relates to an improvement in bolsters and steps for spindles; and it consists in holding the bolsters in position on the rail by means of an adjustable slotted plate, which can be moved forward against the bolsters to take up any wear in the same manner as the usual set-screw, but in a much cheaper and more reliable manner.

The accompanying drawing represents our invention.

a represents an ordinary spindle; *b*, the middle rail; *c*, the lower rail; *d*, the bolster, and *e* the step.

Heretofore the bolsters have been held in position on the rail by means of set-screws, which, passing through the side of the rail, have pressed against the side of the bolster, and by their pressure bound it in place. Owing to the constant revolution of the spindle these bolsters are constantly working loose, and wearing the hole in the rail larger and larger. When, then, the screws are tightened on the bolsters, they bear against and wear away the side of the hole on the opposite side from the screw, and thus the screws are constantly pressing them back out of line; and as they are pressed back out of line, then the lower end of the spindle binds on the step, and thus causes unnecessary wear and tear. Not only are these bolsters constantly working loose, and necessitating the constant employment of a boy to keep them tightened up, but the expense of the screw-work is very great. For every screw there must be a hole drilled in the rail, countersunk and tapped, and then the screw fitted to the hole.

We do away with the screw altogether, and substitute therefor a plate, *h*, of suitable length, which is slotted at each end, and adjustably secured to the under side of the rail. This plate can be moved back and forth, and is intended to have its edge catch in the notches *g*, that are made in the sides of the lower ends of the bolsters, so as to prevent them from turning around. By means of the slots in the ends of the plate it can be adjusted as tightly as may be desired against the bolsters, or moved out of contact with them entirely when it is desired to remove one or more of the bolsters from the rail. There will be about twelve of these plates to every two hundred and four spindles; and in order to keep the pressure uniform on the center and end spindles alike, holes *i* are made through the plates, through which pegs are passed into the rail.

The steps *e* have shoulders made around them to keep them from passing through the rail, and have a recess formed in their tops to receive the loose brass bushing 1. Around these bushings is formed an oil-chamber, 2, which holds a sufficient quantity of oil to keep the lower end of the spindle constantly lubricated. By means of this loose bushing, whenever it is worn out the bushing can be replaced, and thus the step last forever.

We are aware that the lower ends of the bolsters have been grooved circumferentially, and that a spring has been made to catch over and around the ends of these bolsters in the grooves, for the purpose of preventing the bolster from rising in the rail; but where a spring is used in this manner, a separate and distinct spring is needed for each bolster, and each bolster must be separately fastened, and there is nothing to prevent the bolster from turning around. Where a slotted plate is used any number of bolsters can be secured at the same time, and by the same movement, and every one instantly released by the same movement. Not only is the plate cheaper and more easily adjusted than so many different springs, but it is impossible for the bolsters to turn in the rail, or the plate to get lost, as is the case with the springs. Another advantage of the plate over the springs is, that the bolsters need only a slight groove on one

side alone, where there are two grooves, or one continuous one entirely around the end for the springs.

Having thus described our invention, we claim—

The adjustable slotted plate *h*, in combination with the rail and the notched bolsters *d*, as a means of holding the bolsters in position, substantially as shown.

In testimony that we claim the foregoing we have hereunto set our hands and seals this 18th day of September, 1876.

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Witnesses:
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