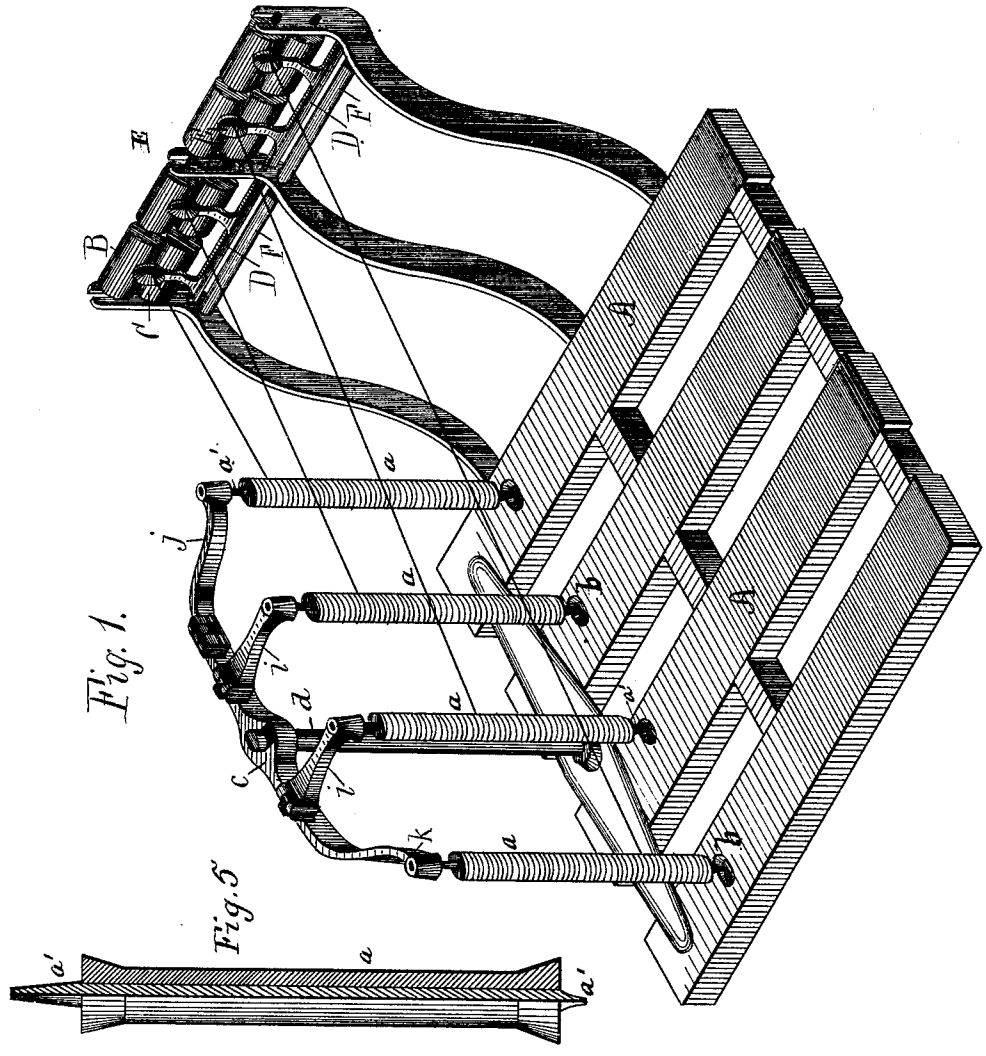
J. WATTS. 2 Sheets—Sheet 1.

Creel for Spinning Machinery.

No. 220,199. Patented Sept. 30, 1879.



Witnesses.
A. W. Johnston.
H. E. Lodge.

Inventor.
Jas. Watts.
H. Curtis Atty.

2 Sheets—Sheet 2.

J. WATTS.

Creel for Spinning Machinery.

No. 220,199. **Patented Sept. 30, 1879.**

Fig. 4.

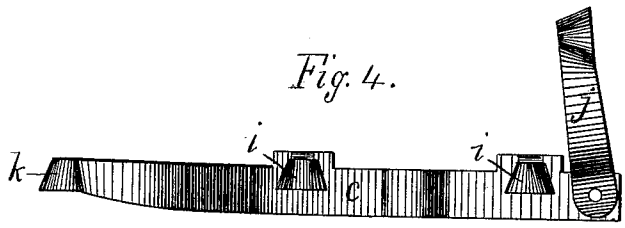


Fig. 4.a

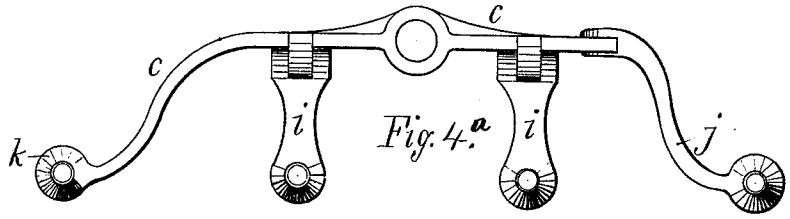


Fig. 3.

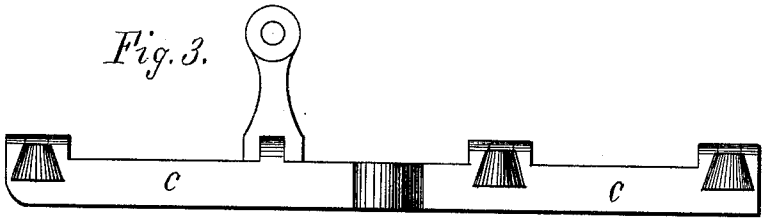


Fig. 3.a

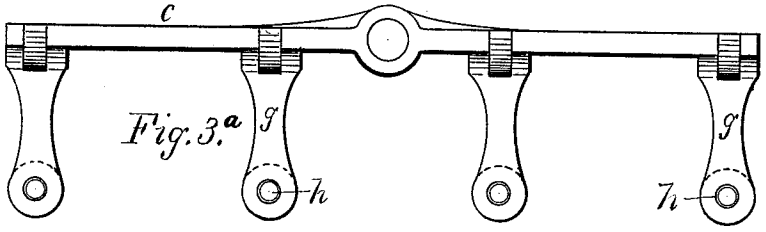


Fig. 2.

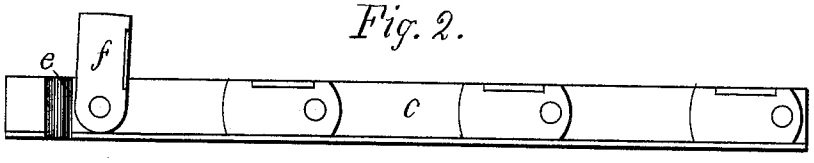
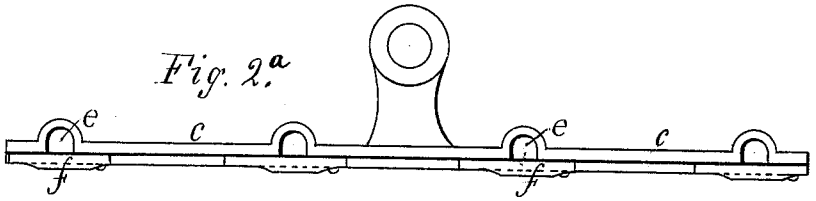


Fig. 2.a



Witnesses.
W. Johnston.
H. C. Lodge.

Inventor.
Jas. Watts.
F. Curtis. Atty.

UNITED STATES PATENT OFFICE.

JAMES WATTS, OF LAWRENCE, MASSACHUSETTS, ASSIGNOR TO LAWRENCE FLYER AND SPINDLE WORKS, OF SAME PLACE.

IMPROVEMENT IN CREELS FOR SPINNING-MACHINERY.

Specification forming part of Letters Patent No. **220,199**, dated September 30, 1879; application filed April 25, 1879.

To all whom it may concern:

Be it known that I, JAMES WATTS, of Lawrence, in the county of Essex and State of Massachusetts, have invented certain Improvements in Creels for Spinning Machinery, of which the following is a specification, reference being had to the accompanying drawings, which represent, in—

Figure 1, a perspective view of a creel containing my invention. Figs. 2, 2ª, 3, 3ª, 4, and 4ª represent, in plan and elevation, different means for supporting the upper ends of the bobbin-skewers. Fig. 5 is a view, partly in section, of a bobbin and its skewer enlarged.

In these drawings, A represents the base or lower part of my creel, the same being a barred frame composed of longitudinal bars with cross stay-pieces. In use this barred frame is disposed alongside of the roller-beam practically by the lower beam in creels heretofore in use. It carries the lower skewer-steps, *b*.

I employ but one barred frame, and the entire series of bobbins *a a* are supported upon it in a common horizontal plane, and the creel is so situated with respect to the roller-beam that the upper ends of the bobbins are level with or but slightly above such beam. This enables the spinner to work from the rear of the roller-beam while the mule is running, and to clean and oil the rolls, pick the top-clearers, and piece in the roving, and at the same time have the rest of his work under his eye. It also permits the rays of light to fall directly upon the mechanism supported by or connected with the roller-beam, as well as upon the mule-carriage and its adjuncts, thereby prolonging the daylight and economizing use of gas to a certain extent, and enabling the mule-tender to perform his labor to much better advantage. In addition to this, the entire spinning-room is lighted up and the inmates are at all times under the eye of the overseer—a point of no small importance—while in addition to this much better ventilation is secured.

To support or guide the upper ends of the skewers *a'* of the bobbins, I dispense with the horizontal beam or plank which has heretofore been employed as a support to the upper step, and in lieu of such beam I employ, with each two pairs of draft-rollers and four bobbins to supply the same, a horizontal attenuated bar or rail, *c*, supported by one or more posts, *d*, erected upon the base A; and I construct or provide this rail with hinged or movable bearings or guides for the upper ends of the skewers, in order that the bobbins, especially those at the rear of the creel and next the draw-rolls, may be lifted out vertically without necessity of removing or disturbing another bobbin.

The bearings or guides which support or steady the upper ends of the bobbin-skewers may be variously constructed. For instance, in Figs. 2 and 2ª of the drawings, the rail *c* is shown as straight throughout its length and disposed directly over the lower steps *b* of the skewers, a series of notches, *e e*, being formed in the side of the rail to receive the upper ends of the skewers, while to each notch a latch or button, *f*, is employed, pivoted to the rail and adapted to open or close the notch.

In Figs. 3 and 3ª of the drawings the rail is also represented straight, but is disposed to one side of the skewer-steps, and is provided with horizontal hinged arms *g g*, which extend laterally toward and over the skewer-steps *b*, and have each a hole or passage, *h*, in its outer end, which coincides with the step *b* below, and serves to receive and steady the upper end of the skewer.

In Figs. 4 and 4ª of the drawings the rail *c* is shown as also arranged to one side of the skewer-steps *b*, and having two central arms, *i i*, pivoted in manner similar to the arms *g* of Figs. 3 and 3ª; but the outermost or rear end, *j*, of the rail, or that nearest the roller-beam, as shown in Figs. 4 and 4ª, which is also hinged to the rail, is not disposed at right angles to the latter, but obliquely, in order to permit of easy and expeditious removal of the bobbin without interfering with the next adjacent bobbin.

The front or nearest end, *k*, of the rail *c*, under the arrangement shown in Figs. 4 and 4ª of the drawings, may be hinged to the rail as with the rear arm before alluded to; but it may also be rigid or integral with the rail, as represented.

In either of the instances shown in said Figs. 2, 2ª, 3, 3ª, 4, and 4ª, to remove or insert a bobbin it is only necessary to lift the latch or arm

which guides the upper end of its skewer, when the bobbin may be lifted vertically out of the creel without disturbing its neighbors and with ease and rapidity.

I have represented at B and C in the accompanying drawings one pair of drawing-rollers, the traverse-guide operating with such rollers being shown at D, and its trumpet guides or spouts at E E.

In front of the traverse-guides D, and common to all, I dispose a horizontal rail or rod, F, which serves to prevent the roving, when broken and slack, from falling upon and being entangled with the mechanism of the roller-beam, and enables the ends of such broken roving to be easily picked up and pieced.

In the use of the two or three tiered creel, as heretofore employed, the rovings from the upper bobbins are carried over a horizontal rod or guide, and thence downward to the drawing-rollers.

To prevent the unwinding of the roving from the bobbins by its overweight, and thus become caught in the above machinery of the roller-beam, a band of some tenacious material is secured to the rod or guide, and this band, in connection with the guide, exerts so much friction upon the roving that the latter is liable to be drawn out or attenuated to a certain extent, and to make a more uneven yarn than that from the lowermost bobbins, and the rovings are also frequently broken on account of the extra tension. For this reason the difficulty increases with the increased fineness of the roving used.

By my creel, in which the bobbins are all subjected to the same conditions and the roving is given off without obstruction and with equal tension, the above objections are avoided, and I am enabled to produce uniformly perfect yarn of any degree of fineness.

I claim—

1. In creels for spinning-machines, the combination, with steps or bearings for the bobbin-skewers, of upper skewer guides or bearings capable of being moved, in whole or in part, to engage or release the skewers, substantially as and for the purpose hereinbefore set forth.

2. The rail *c* and movable guides or bearings carried by the same, in combination with the base A and steps or bearings thereon, as and for the purposes described.

JAMES WATTS.

Witnesses:
F. CURTIS,
H. E. LODGE.