(No Model.)

J. C. JUDGE.

SPINNING FRAME.

No. 589,176. Patented Aug. 31, 1897.

Fig. 1.

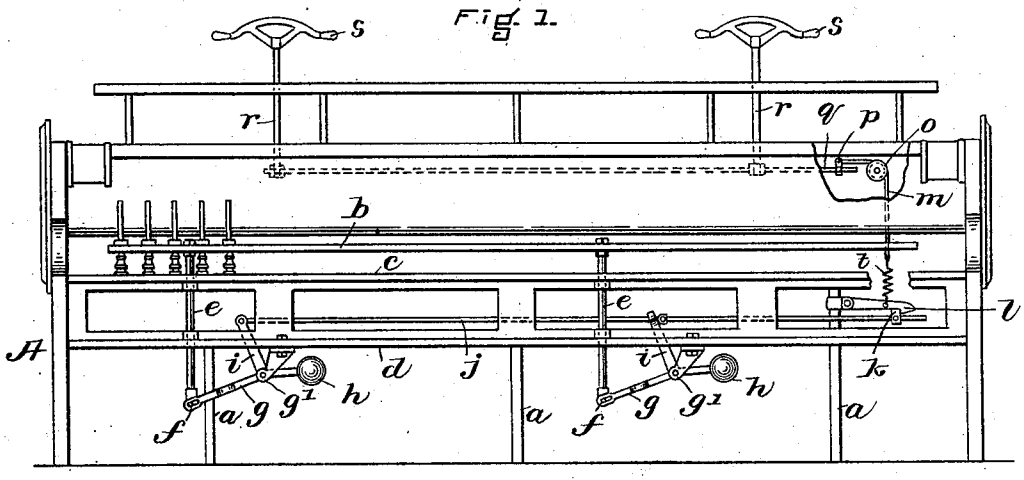


Fig. 2.

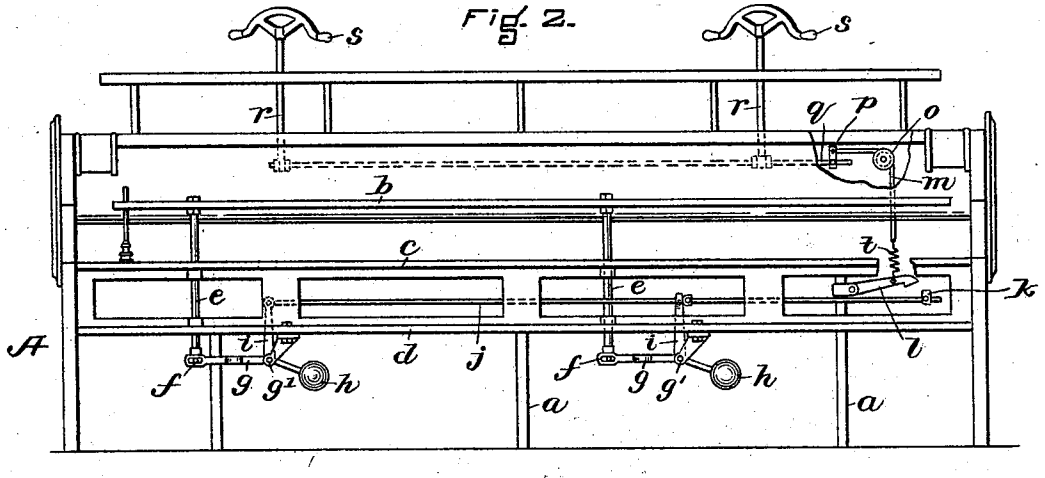
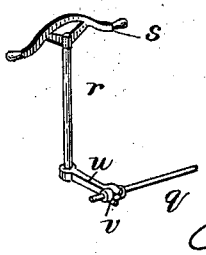


Fig. 3.



WITNESSES.

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JOHN C. JUDGE, OF FALL RIVER, MASSACHUSETTS.

SPINNING-FRAME.

SPECIFICATION forming part of Letters Patent No. 589,176, dated August 31, 1897.

Application filed April 12, 1897. Serial No. 631,672. (No model.)

To all whom it may concern:

Be it known that I, JOHN C. JUDGE, of Fall River, in the county of Bristol and State of Massachusetts, have invented certain new and useful Improvements in Spinning-Frames, of which the following is a description sufficiently full, clear, and exact to enable those skilled in the art to which it appertains or with which it is most nearly connected to make and use the same.

My invention has relation to spinning-frames, and has for its object to provide improved means for automatically holding the rail in its depressed position during the operation of doffing and for automatically releasing the same when the frame is again set in motion.

Of the drawings, Figure 1 is a side elevation showing the parts of a spinning-frame that coöperate with my device, a portion being broken away to show the connection between the retaining-latch and the shipping-rod, the latch being shown in its locking position. Fig. 2 is a similar view showing the latch raised and the ring-rail in the uppermost position, which position it occupies while the frame is in operation.

My invention consists, essentially, in a locking device or detent which serves to hold the ring-rail depressed and which is operated directly from the shipping-rod, so that as the frame is stopped or started the ring-rail is respectively locked or released. I need employ but a single detent, and by my arrangement of parts this can be operated from either side or end of the frame.

As shown in the drawings, A represents the framework of the machine, provided with the usual legs or samsons *a*. The ring-rail *b* is supported by the usual lifting-rods *e*, which move in bearings in the fixed rails *c* and *d*. These lifting-rods have a suitable connection at *f* with arms *g*, which are rigidly fastened to the rock-shaft *g'*. The usual counterbalance-weights *h* are also secured to these shafts by means of an arm and serve normally to raise the lifting-rods *e* and the ring-rail *b*. Rigidly fastened to the said rock-shafts *g'* are the arms *i*. These arms *i* have a suitable pivotal connection with the connecting or weight rod *j*, which serves to operate all the rock-shafts and their respective lifting-rods in unison. I rigidly secure to this connecting-rod *j* in any suitable manner a block or projection *k* at a suitable distance from one of the samsons *a*. To the adjacent samson I pivot in any desired manner a latch or detent *l*. Upon a corresponding part of the shipping-rod *q* I secure a block or lug *p*. This block or lug I connect with the latch or detent *l* by a cord *m* or similar connection, which passes over the pulley *o*.

The shipping-rod is provided with the usual rod *r*, handle *s*, the lever-arm *u*, the latter being suitably connected with the shipping-rod at *v*, or any desired means may be employed for moving the shipping-rod. Instead of connecting the cord *m* directly with the latch *l* I prefer to introduce at the lower end a spiral spring *t*, for a purpose to be described hereinafter.

The operation of my device is as follows: Fig. 2 represents the position of the respective parts of the device when the spinning-frame is in operation, the shipping-rod being in a position to keep the driving-pulley in motion and the latch *l* being in its raised position. The weights *h* are free to keep the ring-rail raised, while, of course, allowing the ring-rail to be reciprocated during the operation of the machine. The mechanism for causing this reciprocation, as well as for driving the spindles, I have not attempted to show, as it forms no part of my invention.

When it is desired to remove the bobbins, the lever *g* is depressed by the foot of the attendant and at the same time the shipping-rod *q* is shifted by hand to the right until it occupies the position shown in Fig. 1. This causes the connecting-rod *j* to move toward the left and at the same time allows the latch *l* to fall and engage the block *k*, which should be adjusted to a proper position on the weight-rod. The parts will then be in the position shown in Fig. 1, the ring-rail being depressed and being held in position by the detent *l*, the block *k*, and the connecting parts.

After the ring-rail has been depressed it is still necessary that the frame should continue its operation a little to secure the needed slack of the yarn before doffing. By introducing the spring *t* between the latch *l* and the cord *m* I am enabled to move the shipping-rod a slight distance to the left without

disengaging the latch *l*, thereby securing a few extra turns needed to produce this slack. The spring *t* should be sufficiently yielding to permit this movement of the shipping-rod *q* and the cord *m* without disengaging the detent *l*, which is held in position by the friction due to the pressure of the block *k* against the shoulder of the detent, which pressure is caused by the weights *h*.

After the doffing operation has been performed the operator depresses the lever *g* sufficiently to move the block *k* out of engagement with the shoulder of the detent, thus relieving the shoulder of the binding-pressure. The shipping-rod is now turned to start the machine. At the same time the latch *l* is raised and the ring-rail is left free to rise under the action of the weights *h*.

It will be noticed that the operation of my device is entirely automatic, as it has connection with the shipping-rod, that it can be operated from any part of the frame, and that it serves its purpose, while at the same time permitting the frame to be started sufficiently to secure the requisite slack of the yarn.

While I prefer to have the latch or detent engage a projection upon the shipping-rod, it is obvious that if it were made to engage any portion of the mechanism that raises and depresses the ring-rail such a variation would be within the scope of my invention.

Having thus explained the nature of the invention and described a way of constructing and using the same, though without attempting to set forth all of the forms in which it may be made or all of the modes of its use, it is declared that what is claimed is—

1. In a spinning-frame the combination of the shipping-rod, of the weight-rod and of means operated by the shipping-rod for locking the weight-rod against movement.

2. In a spinning-frame, the combination of the shipping-rod, of the weight-rod provided with a suitable projection, of a latch located to engage the said projection when the ring-rail is depressed, and a suitable connection between the shipping-rod and the latch.

3. In a spinning-frame the combination of the shipping-rod, of the weight-rod, of a detent for locking the weight-rod and of a yielding connection between the shipping-rod and the detent.

4. In a spinning-frame the combination of a shipping-rod, of a detent for preventing the movement of the ring-rail, of the cord and of the spring, said cord and spring forming a yielding connection between the shipping-rod and the detent.

5. In a spinning-frame the combination with a ring-rail of mechanism for raising and lowering said rail, a detent for preventing the movement of said rail, and a rod extending longitudinally of the frame and having connection with said detent, whereby the detent may be operated from any part of the frame.

In testimony whereof I have signed my name to this specification, in the presence of two subscribing witnesses, this 10th day of April, A. D. 1897.

JOHN C. JUDGE.

Witnesses:
GEO. N. GODDARD,
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