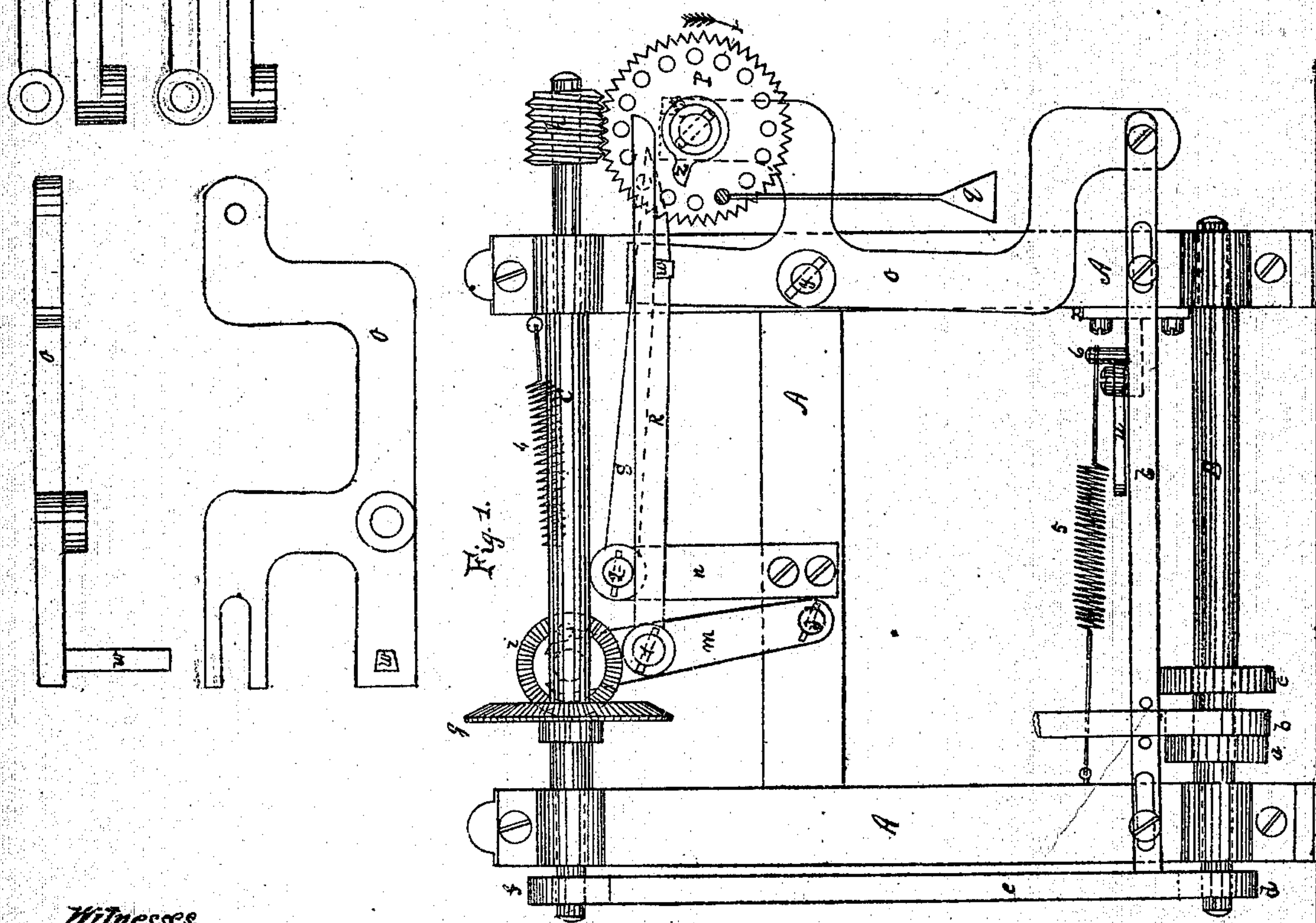
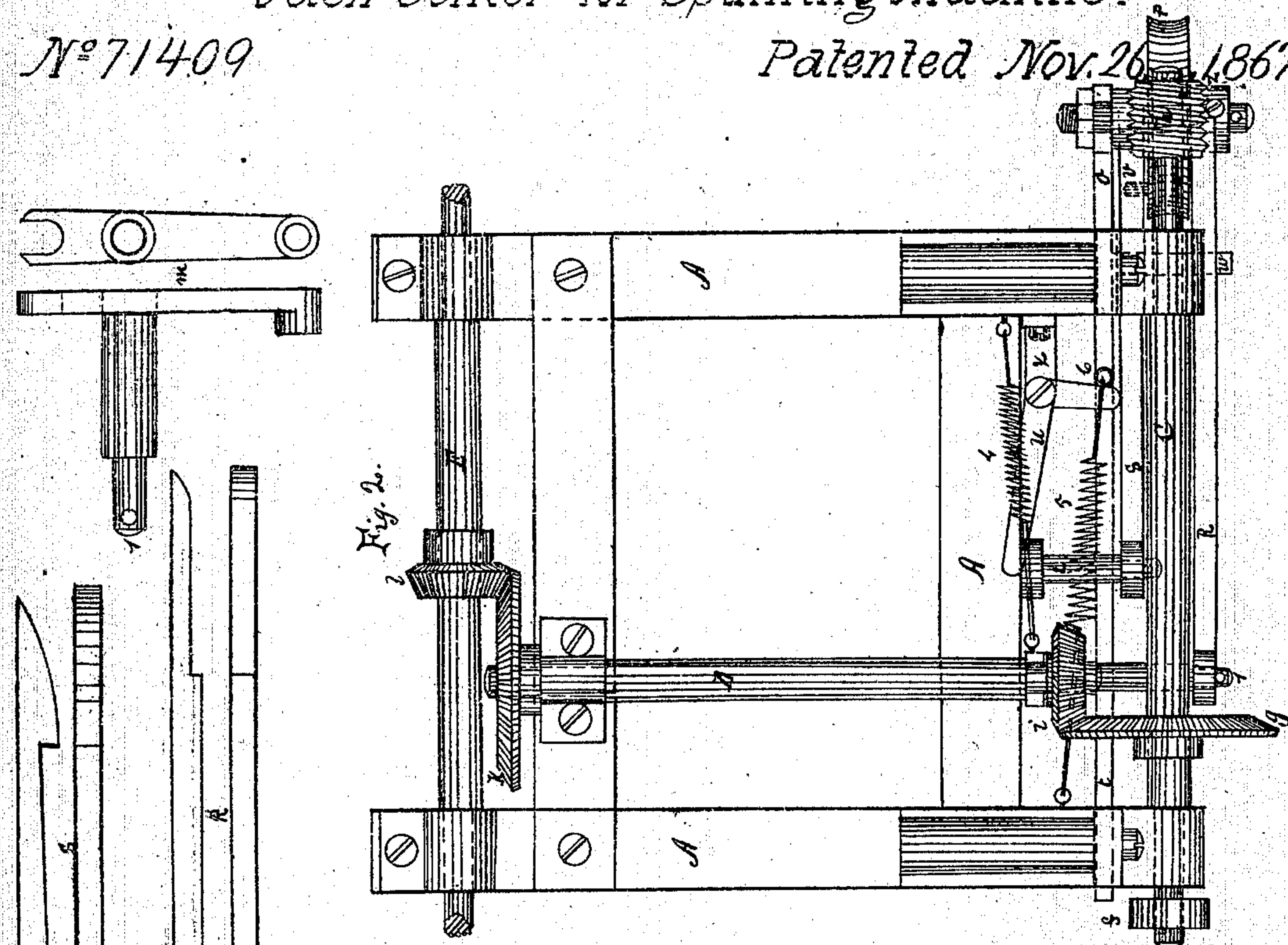


F. R. Pearson.

Jack Center for Spinning Machine.

Nº 71409

Patented Nov. 26  1867.



Witnesses.
E. H. Carstich

Inventor

United States Patent Office.

FRANCIS R. PEARSON, OF GERMANTOWN, PENNSYLVANIA.

Letters Patent No. 71,409, dated November 26, 1867.

IMPROVEMENT IN JACK-CENTRE FOR SPINNING-MACHINES.

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, FRANCIS R. PEARSON, of Germantown, county of Philadelphia, and State of Pennsylvania, have invented certain new and useful Improvements in Jack-Centres for Spinning Woollen and other Yarns; and I do hereby declare that the following is a full and exact description of the construction and operation of the same, reference being had to the annexed drawings, which make a part of this specification, in which drawings—

Figure 1 is a back view of the jack-centre.

Figure 2 is a top view of the same.

The other figures are detail parts, and similar letters represent the same parts.

The nature of my invention consists in the combination and arrangement of levers, catches, and one worm-wheel for operating the "slubbing" and twist-gearing of a spinning-jack, (it being impossible to gear one without gearing the other,) and thereby preventing the breaking down of the ends, which is a source of great trouble in some jacks which have two (2) worm-wheels. With one (1) worm-wheel I make a simple yet positive and effective gearing for a jack-centre.

To enable others to construct and operate my improvement, I will describe its construction and operation.

The construction is as follows: A represents the centre framing of a jack, which may be made of iron or wood, (in the drawings it is represented as made of wood.) B represents the main driving-shaft, on which are loose and tight pulleys, *a* and *b*. The pulley *c* is the twist or race-belt pulley. On the end of the shaft B, outside of the frame, is a pulley, *d*. C is a shaft, parallel to the shaft B, and connected by the belt *e*, and pulleys *f* and *d*. On this shaft C is a bevel-wheel, *g*, and worm *h*. D represents a shaft at right angles to the shaft C, (see fig. 2,) one of the journals of this shaft C being fitted to a forked stand, *m*, pivoted to the stud 3, and fastened to the frame A, (see fig. 1.) The other journal runs in a fixed box; and on each end of this shaft are bevel-wheels *i* and *k*. At right angles to the shaft D, and parallel to the shaft B, is a shaft, E. This shaft connects at each end with the front rollers, which deliver the "slubbing." On this shaft E is a bevel-wheel, *l*. O is a double-armed lever. This lever is hung on the stud *y*, fastened to the frame A, on which stud it is free to oscillate. In a slot of the upper arm of lever O is a stud. On this stud is fitted the worm-wheel *p*. This wheel is constructed in the usual manner, with this exception, that the hub is fitted with a dog or adjustable cam, *z*. In the face of the wheel is drilled a series of holes. In one hole is a pin, *v*, (see fig. 2.) From this hole hangs a cord, having a weight, *q*, fastened to it. The lower end of the lever O is connected with the belt-shifter bar *t*. At the upper end of the lever O is a square stud, *w*, on which the catches *s* and *r* hook. *m* and *n* are stands, to which are fastened the studs 1 and 2. On these studs are fitted the catches *s* and *r*. The stand *n* being fixed stationary, the stand *m* is fitted to stud 3, in order that it will oscillate. At the upper end of stand *m* is fastened the spiral spring 4. The other end of the spiral spring is fastened to the frame A. On the belt-shifter *t* is a pin, 6. To this pin is fastened one end of a spiral spring, 5, the other end of the spring being fastened to the frame A. On the lower part of the frame A, near the pin 6, is fastened a stand, *x*. To this stand is fitted a right-angle lever, *u*. This lever acts against the pin 6.

The operation is as follows: The spinner or operator, in putting up the carriage, forces a projection on the carriage against the lever *u*. This lever presses against the pin 6 on the shifter *t*. This shifts the belt from the loose pulley *a* to the tight pulley *b*. The shifter-bar *t*, being connected with the lever O, will move the bottom of that lever to the right, shoving its top in the opposite direction, which will gear the worm-wheel *p* to the worm *h*, and at the same time, through the action of the stud *w* on the hook of the catch *r*, the bevel-wheels *g* and *i* will be caused to engage with each other, while the catch on the hooks will drop, engage with the pin *w*, and hold the wheels firmly in contact. It will be noticed that the hooks on the catches *s* and *r* are right and left; and after the catch *s* is unhooked, the stud *w* will move to the right, and with it the hook on catch *r*, and will, in this manner, disengage the bevels *g* and *i*. If the catch *s* fails to hook on the stud *w*, neither the bevels nor worm-wheels will gear, and it will be seen that the bevels and worm-wheels depend on the catch *s* to keep them in gear. The method of gearing the worm and bevel-wheels *g* and *i* having been described, motion being communicated to the shaft C by the belt *e*, and pulleys *d* and *f*, will give motion to the worm-wheel *p*, which will move in the direction of the arrow, fig. 1. The dog *z*, in coming in contact with the catch *r*, will raise and

unhook it, and the spring 4 will ungear the bevels *g* and *i*. The worm-wheel continues on, and the pin *v* raises the catch *s* and unlocks the stud *w*, which lets the wheel *p* drop out of gear, and the weight *q* will bring the pin *v* against the upper arm of the lever *O*, and arrest the reaction of the wheel. At the same time the worm-wheel is ungear the spiral spring will act on the pin 6, and shift the belt from the tight to the loose pulley, thereby stopping the jack.

It will be understood by one who is skilled in the art of operating jacks, that when the shaft *D* is ungear from the shaft *C*, the front rollers stop, and when the "slubbing" has been run out for that stretch, the spinner draws the carriage, and twist is put in the yarn until the worm-wheel is ungear, when the operator backs off and winds up the yarn, and another stretch is made, as before described. The dog *z*, being adjustable by a small set-screw in it, is able to give any length of "slubbing" desired, and the pin *v* may be shifted to any hole in the face of the wheel *p*, to give the amount of twist required. By this combination of the dog, pin, and holes I get an adjustable "slubbing" and twist-gear by one worm-wheel, and no "slubbing" can be run out without the gearing of the worm, which will retain the belt on the tight pulley and thereby give twist.

Claims.

1. I claim the combination of worm-wheel *p* and dog *z*, as described, for the purpose set forth.
2. I claim the combination of worm-wheel *p*, dog *z*, catch *r*, and oscillating stand *m*, as described, for the purpose set forth.
3. I claim the combination of the wheel *p*, catch *s*, lever *O*, and shifter-bar *t*, or an equivalent arrangement of the same, as described, for the purpose set forth.

FRANCIS R. PEARSON.

Witnesses:

A. P. DOUGLASS,
E. HAVERSTICH.