No. 19,690.

PATENTED MAR. 23, 1858.

D. DERMOND.

REGULATOR FOR YARNS OR ROVINGS.

Fig. 1.

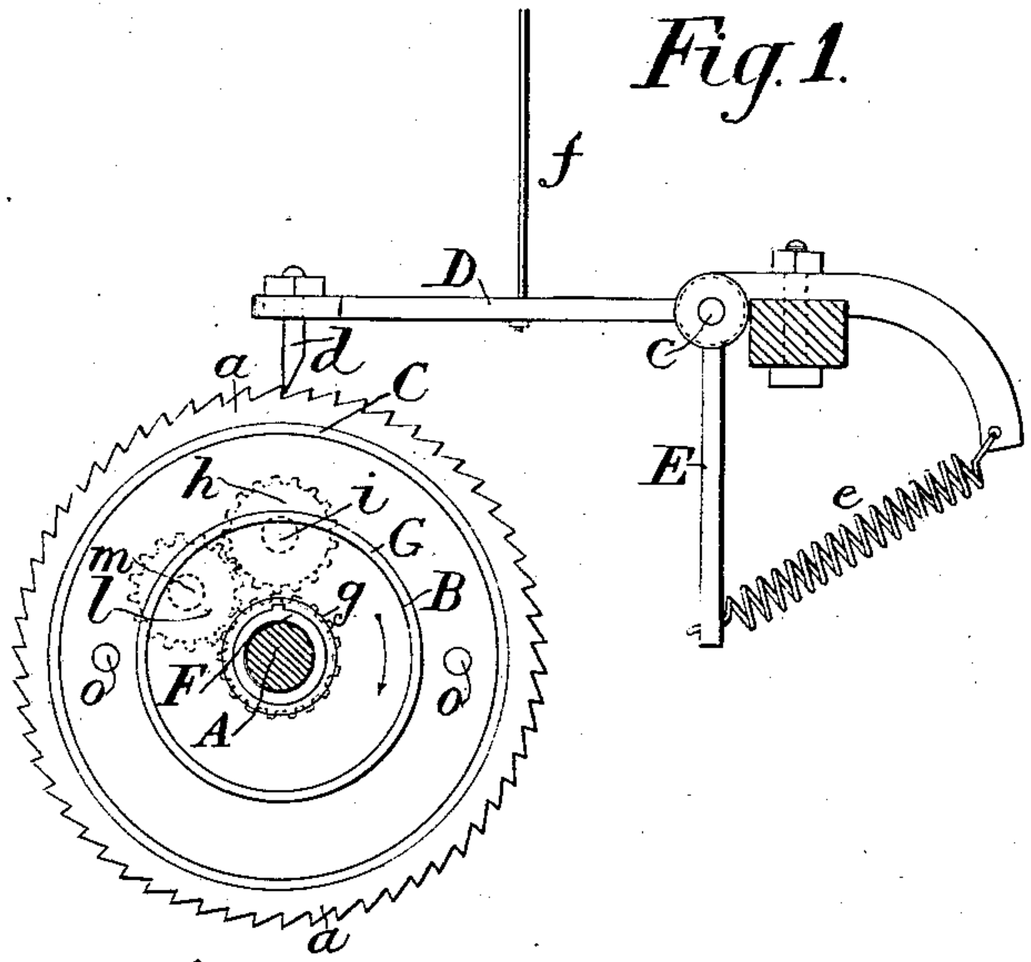
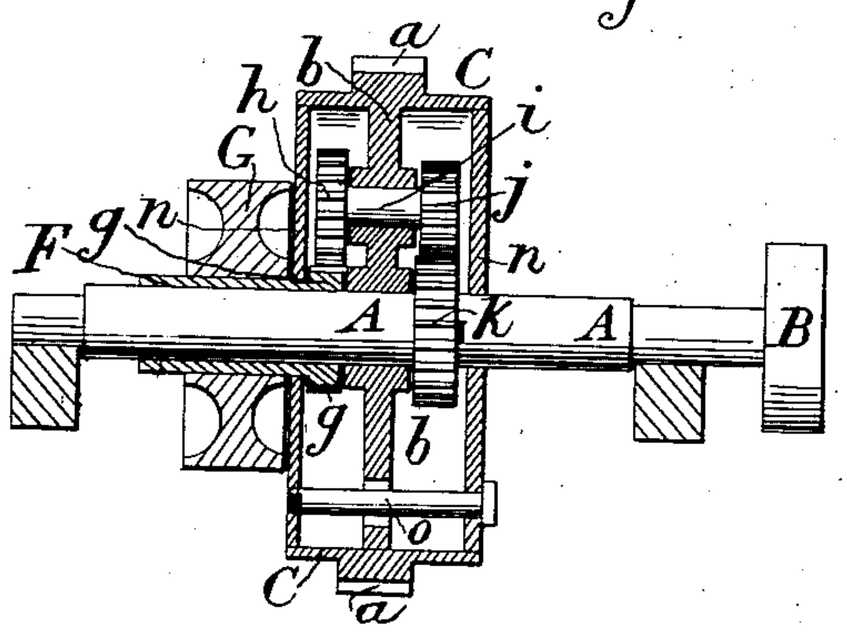


Fig. 2.



UNITED STATES PATENT OFFICE.

DANIEL DERMOND, OF PHILADELPHIA, PENNSYLVANIA.

REGULATOR FOR ROVING OR YARN.

Specification of Letters Patent No. 19,690, dated March 23, 1858.

To all whom it may concern:

Be it known that I, DANIEL DERMOND, of the city and county of Philadelphia and State of Pennsylvania, have invented a new and Improved Regulator for Regulating the Size of Yarns or Rovings; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1, is a side view of my improved regulator. Fig. 2, is section perpendicular to Fig. 1.

Similar letters of reference indicate corresponding parts in both figures.

This invention is principally intended to be applied to the jenny for spinning rope yarns but may be adapted to other machinery for drawing and roving or spinning hemp or other fibrous materials of similar character.

A, is a shaft intended to be arranged in suitable bearings on the framing of the jenny or other machine, some distance below the drawing rollers, said shaft having firmly secured to it the pulley B, whose duty is to drive the heckle-chain by a belt running from the said pulley to a pulley on one of the shafts which carries the heckle chain.

C, is a cylindrical metal box fitted concentrically to the shaft A, in such a manner as to be capable of turning freely on the said shaft, said box having a series of ratchet teeth *a*, *a*, extending all around its outer periphery, and containing a partition *b*, arranged perpendicularly to its axis, which partition may be either a close one or a skeleton, as its purpose is to contain the bearings for some gearing which is inclosed within the box.

D, E, is a bent lever working on a fixed fulcrum *c*, and having attached to its arm D, a catch *d*, which serves as a stop to the ratchet *a*, *a*, and having its other arm E connected to a spring *e*, tends to draw down the catch into gear with the ratchet. The arm D, of the lever is intended to be connected by a rod *f*, with the weighted lever commonly employed to apply the requisite pressure to the upper drawing roller. The drawing rollers and heckle chain are supposed to be arranged in the usual manner.

F, is a sleeve fitted to rotate freely upon the shaft A, said sleeve being arranged partly within the box C, and partly outside of it, but, capable of rotating independently of the box and having attached to the part within the box a spur gear *g*, and to the part outside the box a pulley G. The gear *g*, is geared through the agency of an intermediate gear *l*, (see Fig. 1) which is fitted to rotate freely upon a stud *m*, secured in the partition *b*, with a gear *h*, that is secured on a small shaft *i*, which rotates in a suitable bearing in the partition *b*, and which carries at its other end a spur gear *j*, engaging with a gear *k*, that is secured to the shaft A. The box C, is constructed with tightly fitted movable heads *n*, *n*, which are secured in their places by bolts *o*, *o*, passing through the box, and these heads serve to prevent the escape of oil from the gearing. The oil is to be supplied through a hole in one of the heads, said hole to be provided with a plug or stopper, and the oil finds its way from one compartment of the box to the other through the holes which are made in the partition *b*, for the passage of the bolts *o o*.

The pulley G, receives a driving belt either from a pulley on the lower drawing roller which imparts motion to it in the direction of the arrow shown on it in Fig. 1, and the revolution of this pulley is caused to give to the pulley B, which drives the heckle chain, a motion that is controlled by the operation of the catch *d*, upon the ratchet *a*, in such a manner that the movement of the heckle chain will be arrested as soon as the sliver presenting itself between the drawing rollers is larger than is required and will not be again permitted till the sliver is drawn to the requisite size. This operation is effected in the following manner. While the sliver entering between the drawing rollers is not above the requisite size the catch *d*, is held down into the ratchet *a*, *a*, by the spring *e*; and the revolution of the box with the pulley G, being thereby prevented, the gear *g*, gives motion through the gears *l*, and *h*, shaft *i*, and gear *j*, to the gear *k*, and thereby gives rotary motion to the shaft A, and pulley B, but the slightest increase in the size of the sliver causes it to raise the upper drawing roller and with it the weighted lever that gives it the requisite pressure causing the said lever to lift the rod F, and the arm D, of the catch lever D, E, and raise the catch *d*, out of the ratchet *a*, when the gear *g*, instead of giving motion to the gear *l*, on its stud *m*, carries around the box C, along with the pulley G, and then the gear *j*, instead of driving the gear *k*, merely rolls

around the gear *k*, without giving motion to it, and the shaft A, becomes stationary and therefore the movement of the heckle chain ceases; and this continues until the sliver is drawn sufficiently when the upper drawing roller is permitted to descend and the catch *d*, to engage the ratchet again, and arrest the revolution of the box C, when the gear *k*, and shaft A, are caused to revolve again as at first described and give motion to the heckle chain. In this way the movement of the heckle chain is controlled so as to perfectly control the size of the sliver.

The intermediate gear *l*, may be dispensed with and the gear *h*, made to engage directly with *g*, but in that case the movement of the shaft A and pulley B, relatively to the pulley G, would be the reverse of what it is when the arrangement shown in the drawing is used and a crossed belt would be required to drive the heckle chain instead of an open one.

I am aware that a contrivance has been patented by Pearson and Gardner in which a brake and system of bevel gearing are controlled by the upper feed roller in such a manner as to cause it to control the movement of the heckle chain for the purpose of regulating the size of the sliver and therefore I do not claim the controlling of the movement of the heckle chain through the agency of the upper feed roller. But

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

The combination of the pulley G, the system of spur gearing, the shaft A pulley B, and inclosed box C, with the ratchet *a*, and positive stop *d*, the whole arranged applied and operating substantially as and for the purpose herein set forth.

DANIEL DERMOND.

Witnesses:

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