

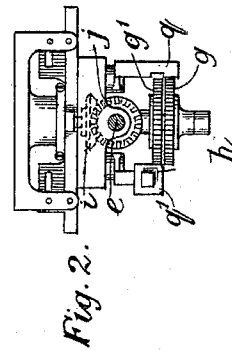
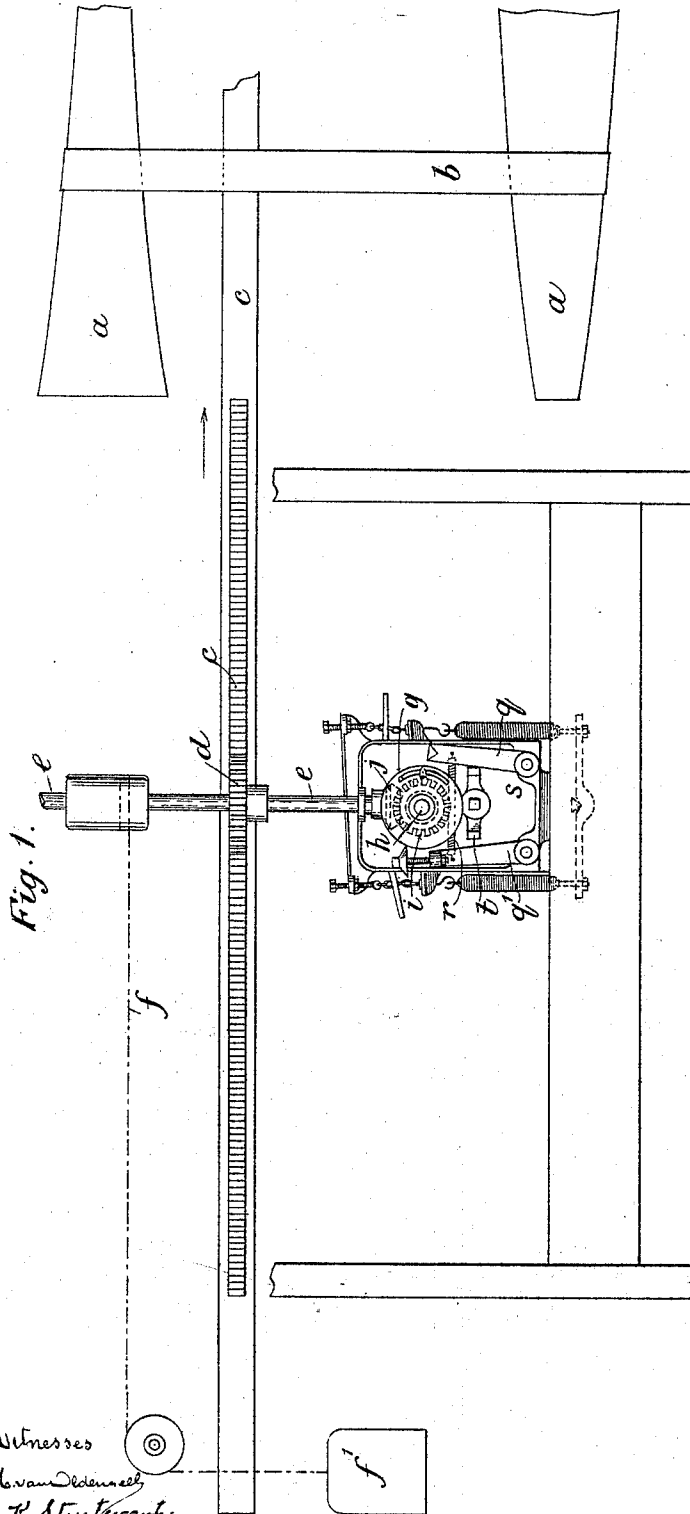
(No Model.)

3 Sheets—Sheet 1.

S. THOMPSON.
SPINNING MACHINE.

No. 535,874.

Patented Mar. 19, 1895.



Inventor
Samuel Thompson
Richard R.
his Attorneys

(No Model.)

3 Sheets—Sheet 2.

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Fig. 4.

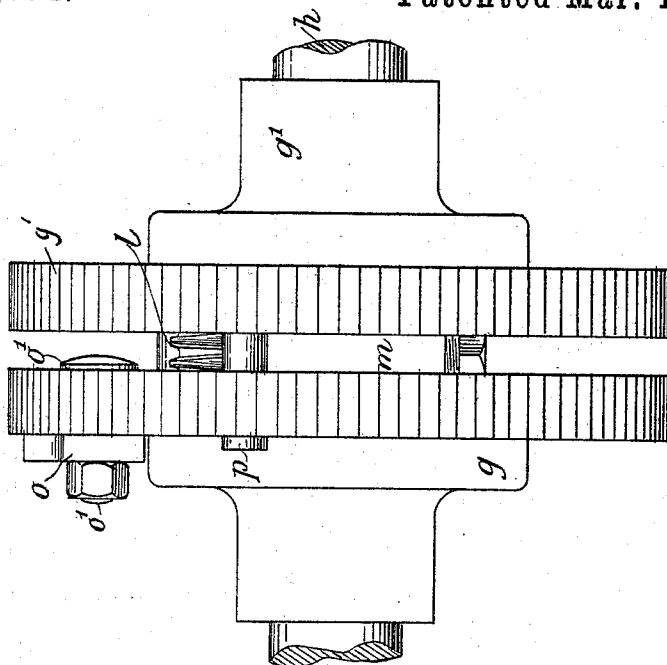
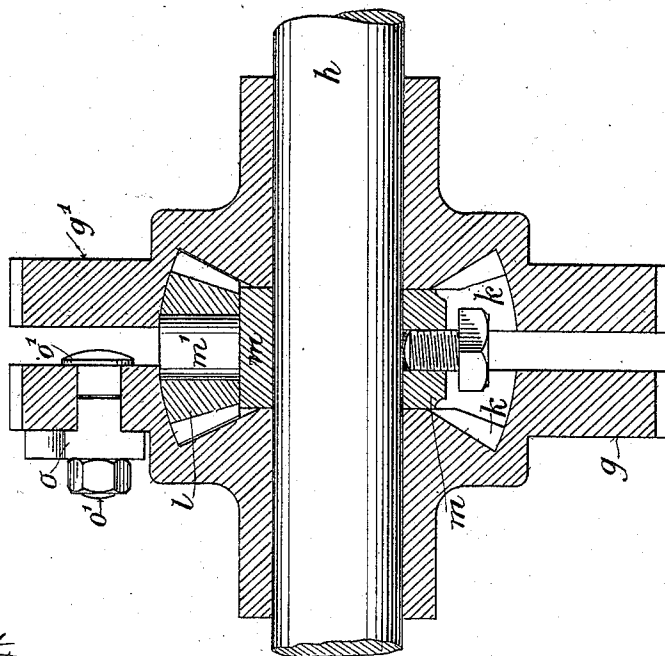


Fig. 3.



Attest
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(No Model.)

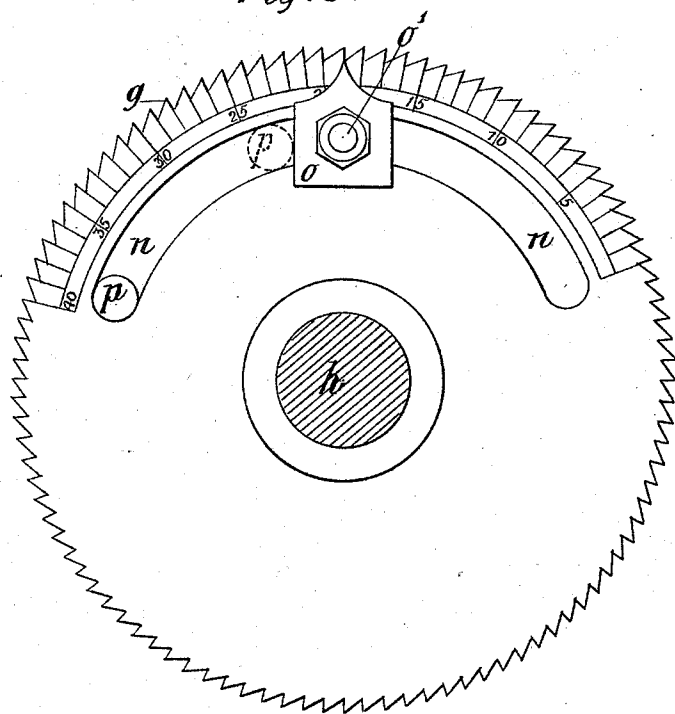
3 Sheets—Sheet 3.

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Fig. 5.



Witnesses
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Samuel Thompson
by *Richard R.*
his Attorney

UNITED STATES PATENT OFFICE.

SAMUEL THOMPSON, OF BOLTON, ENGLAND, ASSIGNOR TO DOBSON & BARLOW, LIMITED, OF SAME PLACE.

SPINNING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 535,874, dated March 19, 1895.

Application filed October 22, 1894. Serial No. 526,652. (No model.) Patented in England July 11, 1894. No. 11,399.

To all whom it may concern:

Be it known that I, SAMUEL THOMPSON, a subject of the Queen of Great Britain, residing at 58 Arkwright street, Bolton, in the county of Lancaster, England, have invented certain new and useful Improvements in Spinning-Machines (for which I have obtained Letters Patent in Great Britain numbered 11,399, bearing date July 11, 1894,) of which the following is a specification.

My invention relates to the building motion of slubbing, intermediate and roving frames, and one object of my invention is to avoid the use of change ratchet wheels for the building motion of such machines and another is to obtain a finer adjustment of the lift. To effect this object I dispense with the ordinary changeable ratchet wheel of the escape motion, and in its place I employ a pair of special ratchet wheels, mounted loosely upon a shaft geared to the upright shaft, which carries the pinion in gear with the rack connected to the strap fork of the cone strap.

In order that my invention may be fully understood and readily carried into effect I will describe the accompanying three sheets of drawings reference being had to the letters marked thereon.

Figure 1 is a side elevation of part of the building mechanism of a slubbing, intermediate or roving frame to which my improvements are applied. Fig. 2 is a plan of part of Fig. 1, and Figs. 3, 4 and 5 are three detached views, on a larger scale, of my improved ratchet escape mechanism.

In Fig. 1,—*a a* are the pair of driving cones; *b*, the driving strap by which the lower cone is driven from the upper cone; *c*, the rack known as the cone strap rack, into the teeth of which gears a pinion *d* mounted upon an upright shaft *e*, to which is connected a chain *f* for supporting a weight *f'* which, whenever the shaft *e* is free, turns it and by the pinion *d* moves the rack *c* in the direction of the arrow. These parts may be all of the usual construction and form in themselves no part of my present invention.

In Fig. 2 most of the parts above referred to are omitted and only those parts shown which embody my invention.

In place of the usual single change ratchet

wheel which is secured to a short shaft *h* geared by bevel gears *i j* with the ordinary upright shaft *e* of the building motion, by which the lift of the bobbins is varied, I employ a pair of special ratchet wheels *g g'*, mounted loosely upon the short shaft *h*. The construction of the ratchet wheels *g g'*, is clearly shown in Figs. 3, 4 and 5 from which it will be seen that the wheels have ratchet teeth cut around their periphery and also on the inside face of each wheel is formed a ring of bevel teeth *k* into which gears a bevel pinion *l* carried by a stud *m'* on a boss *m* secured to the shaft *h* as shown in Fig. 3.

In the ratchet wheel *g* and concentric therewith is cut a curved slot *n* into which is fitted a stop piece *o* secured adjustably in the slot *n* by a bolt *o'* and in the other ratchet wheel *g'* is secured a pin *p* which projects into the slot *n*. The teeth alongside this slot are preferably stamped and numbered to enable the stop piece *o* to be readily moved the required distance and when set to be clamped by the bolt *o'*.

In Figs. 1 and 2 are shown the usual catch levers *q q'* connected by a spring *r* and pivoted to the stationary frame *s* of the building motion. In the ordinary arrangement these catch levers act alternately one at each side on the teeth of a changeable ratchet escape wheel; but in my improved arrangement the lever *q* engages with the teeth in the ratchet wheel *g* while the other lever *q'* is ready when the catch lever *q* is pushed out by the ordinary striker *t* to be pulled by the spring *r* into gear with the other ratchet wheel *g'*. The catch lever *q'* is shown in gear with the ratchet wheel *g'* at the same time that the pin *p* which is secured to the wheel *g'* is resting against the end of the slot, see Fig. 5, and immediately the change of motion takes place the striker *t* is brought sharply against the catch lever *q'* which is thereby knocked out of the ratchet wheel *g'* allowing the weight *f'* to turn the shaft *e* and by the pinion *d* drive the rack *c* in the direction of the arrow, Fig. 1, and so shift the belt *b* on the cones *a* as far as the movement of the ratchet wheel *g'* will permit and this is regulated entirely by the position of the adjustable stop piece *o* in the slot *n*. The moment the catch lever *q'* is

pushed out of gear with the wheel g' the catch lever q drawn by the spring r comes into gear with and holds stationary the wheel g until the striker t moves again and knocks the catch lever q out of gear with the wheel g when the same action takes place.

When the first change takes place, as described above, the wheel g' moves the distance between the end of the slot n and the stop piece o , the two positions being shown in dotted and full lines, Fig. 5. When the next change occurs and the wheel g' is held fast by the catch lever q' , the wheel g being free moves until the slot n is arrested by the pin p and so at every movement of the catch levers q q' one of the ratchet wheels g g' will be moved a distance equal to that between the end of the slot n and the stop piece o .

By regulating or adjusting the position of the stop piece o , I am enabled to regulate very accurately the extent of each movement of the rack c and strap b and thereby adapt the machine to wind various sizes of rovings, without the necessity for spare or extra change ratchet wheels as now customary.

If it be desired to use the improved ratchet wheels for either right or left hand machines or frames at will, I propose to cut a slot like n in each wheel and secure the pin p in either wheel as required.

Having now particularly described and ascertained the nature of my said invention and

in what manner the same is to be performed, I declare that what I claim, and desire to secure by Letters Patent of the United States, is—

1. In combination in a roving machine, the pair of ratchet wheels, the shaft carrying the same, the connection between the wheels and the shaft by which each wheel may have movement with the shaft independent of the other, the speed change mechanism, the connection from the ratchet wheel shaft thereto, pawls adapted to engage the ratchet wheels alternately operating means therefor and the adjustable stop connection between the ratchet wheels, substantially as described.

2. In combination in a roving machine, a pair of ratchet wheels having teeth k the shaft carrying the ratchet wheels loosely, the pinion fixed to the shaft and engaging the teeth k , the pawls to engage the ratchet wheels, controlling means for the same, the adjustable stops between the ratchet wheels, the speed change mechanism and the connection leading from the ratchet wheel shaft to the speed change mechanism.

In witness whereof I have hereunto set my hand in presence of two witnesses.

SAMUEL THOMPSON.

Witnesses:

JAMES HENRY ELLISON,
PERCY EDWARD HASLAM.