(No Model.) 2 Sheets—Sheet 1.

C. F. AINSWORTH.

SLUBBING, INTERMEDIATE, AND ROVING FRAME.

No. 592,621. Patented Oct. 26, 1897.

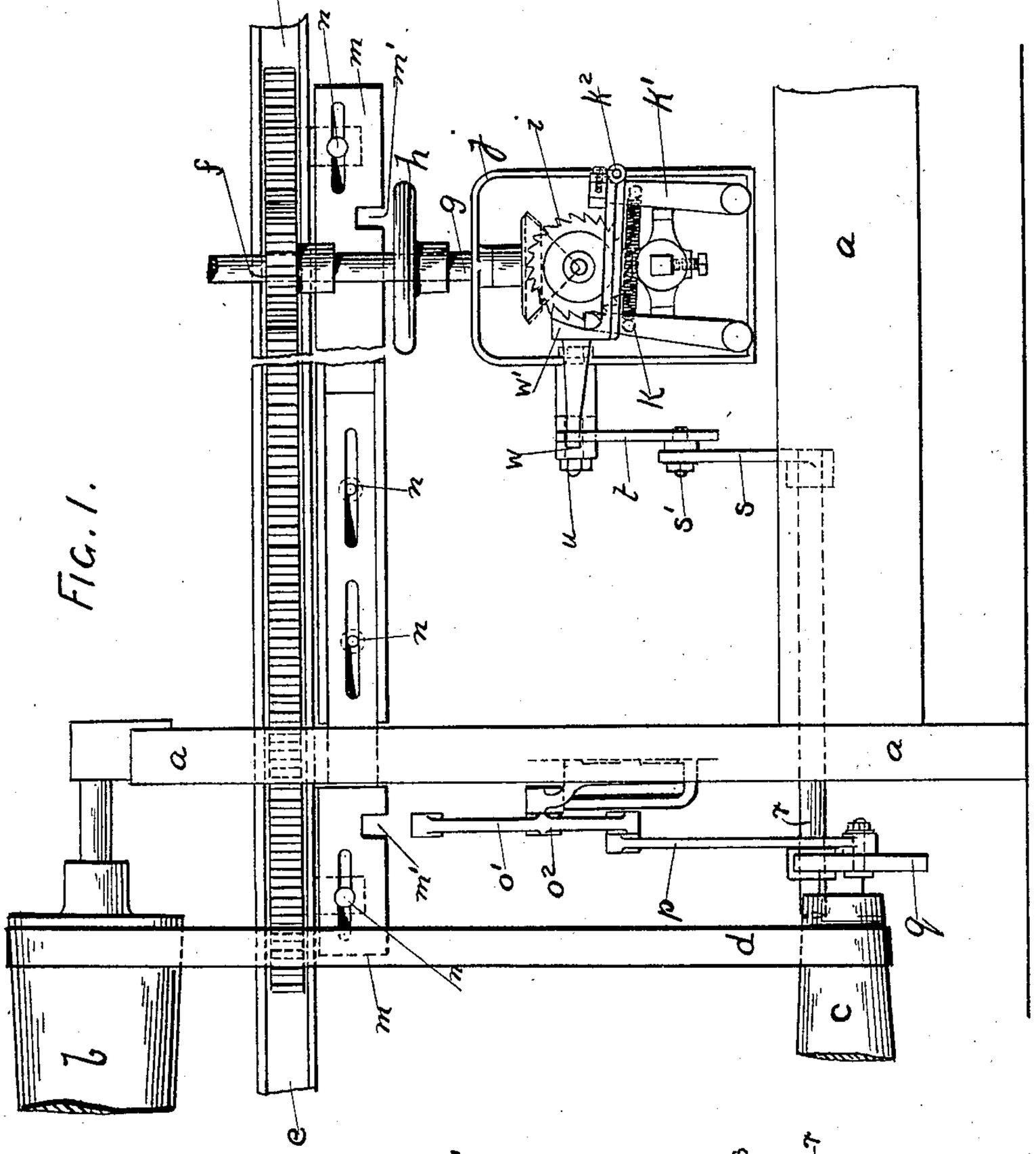


FIG. 1.

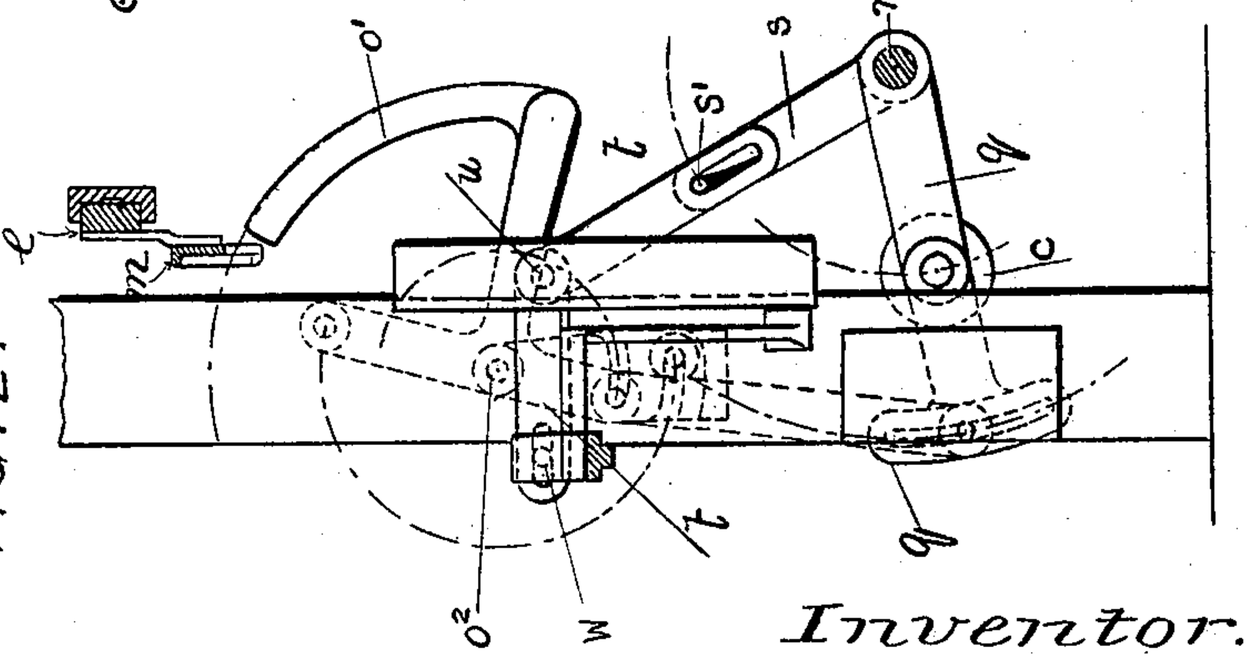


FIG. 2.

Witnesses:
E. B. Bolton
O. D. Munn

Inventor:
Charles Frederic Ainsworth
By Richards
his Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

(No Model.) 2 Sheets—Sheet 2.

C. F. AINSWORTH.

SLUBBING, INTERMEDIATE, AND ROVING FRAME.

No. 592,621. Patented Oct. 26. 1897.

FIG. 3.

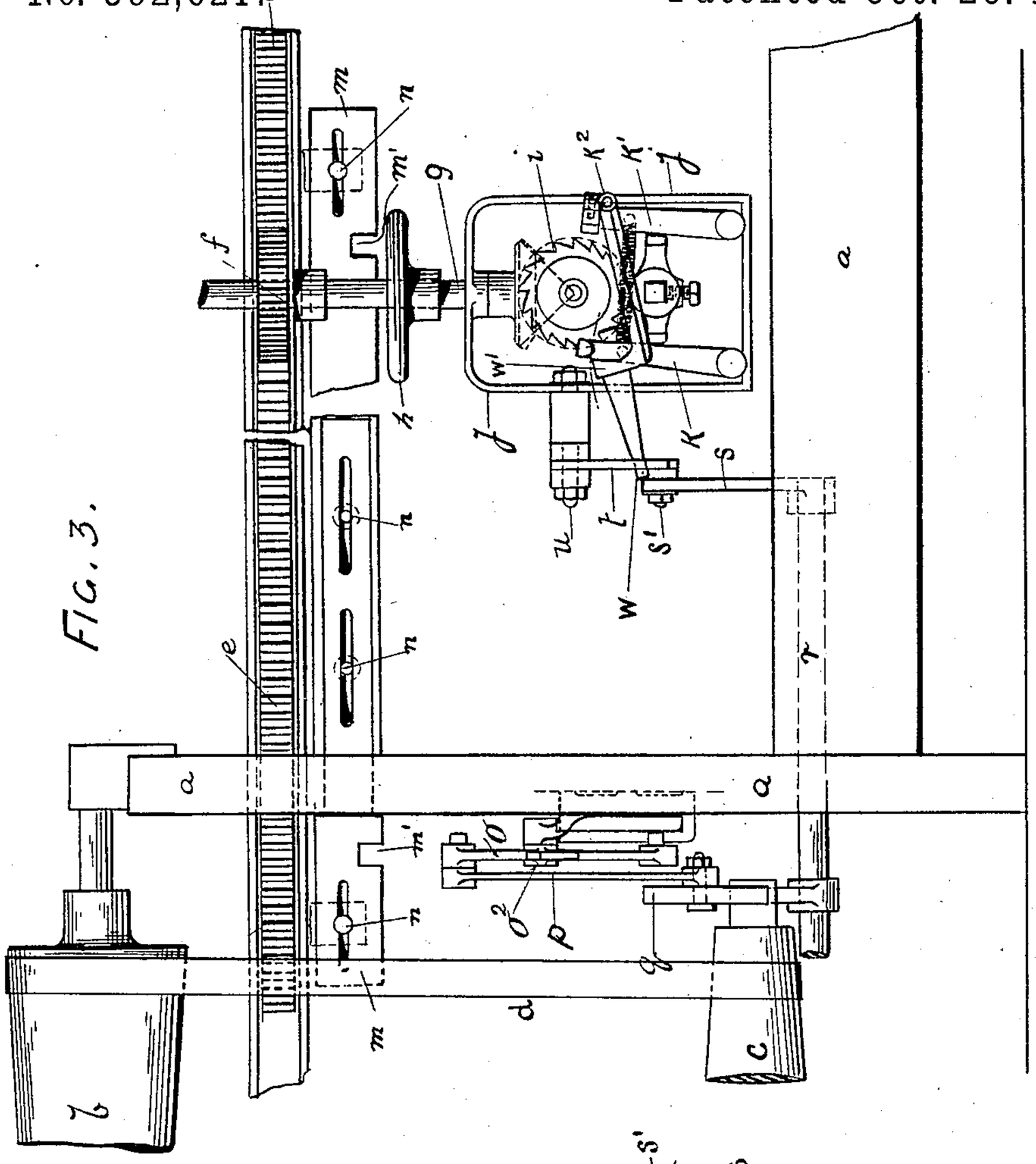
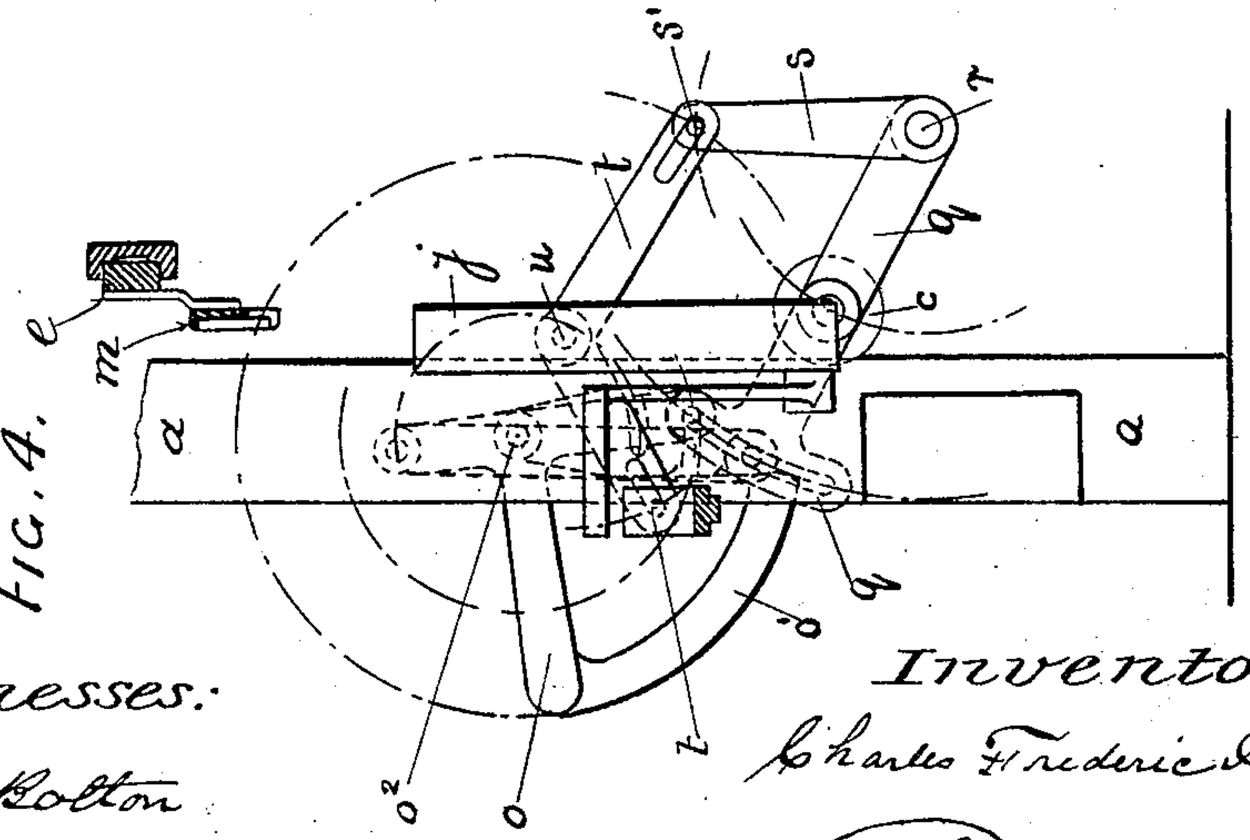


FIG. 4.



Witnesses:

E. B. Bolton

O. D. Munn

Inventor:

Charles Frederic Ainsworth

By Richards & R

his Attorneys.

THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

CHARLES FREDERIC AINSWORTH, OF HORWICH, ENGLAND.

SLUBBING, INTERMEDIATE, AND ROVING FRAME.

SPECIFICATION forming part of Letters Patent No. 592,621, dated October 26, 1897.

Application filed April 30, 1897. Serial No. 634,625. (No model.) Patented in England October 1, 1896, No. 21,711.

To all whom it may concern:

Be it known that I, CHARLES FREDERIC AINSWORTH, cotton-spinner, of Lower Brazley, Horwich, in the county of Lancaster, England, have invented certain new and useful Improvements in Slubbing, Intermediate, and Roving Frames Employed in the Preparation of Fibrous Materials for Spinning, (for which I have obtained Letters Patent in Great Britain, No. 21,711, bearing date October 1, 1896,) of which the following is a specification.

My invention relates to improvements in slubbing, intermediate, and roving frames employed in the preparation of fibrous materials for spinning; and the chief object of my improvements is to prevent the winding back of the strap-fork guide-rack, which regulates the position of the driving-belt on the cone-drums, until the required amount has been wound on the bobbins. I accomplish this object by the arrangement of mechanism illustrated in the accompanying two sheets of drawings.

Figure 1 is a front elevation, and Fig. 2 an end elevation, of part of a slubbing, intermediate, or roving frame to which my improvements are applied. Figs. 3 and 4 are similar views to Figs. 1 and 2, respectively.

In the views, *a* designates the framing of the machine; *b*, the top cone-drum; *c*, the bottom cone-drum, and *d* the driving-belt; *e*, the cone strap-fork guide-rack; *f*, the pinion, gearing into the rack and fixed on the vertical shaft *g*, the movements of which are regulated, as usual, by the building motion; *h*, the hand-wheel, fixed on the shaft *g*; *i*, the building or escape motion ratchet, and *k k'* the catch-levers.

All the foregoing parts are of the usual construction and operate in the usual way.

According to my improvements I secure an adjustable plate or bar *m*, by means of bolts *n* passing through slots in the plate, to the under side of the rack *e*. This plate *m* has two notches *m'* cut in it, one near each end, to allow a projection *o'* to pass through, but only at the commencement and finish of the building of a set of bobbins when the rack *e* is at one extremity or the other of its traverse. The projection *o'* is fixed on the lifting-handle *o*, which is preferably a T-shaped lever fulcrumed at o^2, and with the end of one arm connected as usual by a link *p* to the slotted end of the lever *q*, which is fulcrumed on a shaft *r* and which supports one end of the bottom cone-drum *c*. On the shaft *r* is also fixed near the building motion a lever *s*, on which is fixed a stud *s'*, and this stud *s'* engages a slot in one end of a double-armed lever *t*, which is fulcrumed on a stud *u*, carried by the frame *j*, which supports the vertical shaft *g* and the building motion. The other end of the double-armed lever *t* is also slotted, and in this slot lies the end of a lever *w*, which is fulcrumed at k^2 to the catch-lever *k'*. The lever *w* is bent or notched at *w'* and acts, as clearly shown in Fig. 1, to couple the two catch-levers *k k'* together in such a manner that they move practically as one piece, thereby rendering it virtually impossible to move the catch-lever *k* out of gear with the ratchet-wheel *i* while the lever *w* is in the position shown in Fig. 1. When, however, a set of bobbins has been fully wound and the particular notch *m'* in the plate *m* has been brought by the traverse of the rack *e* immediately over the projection *o'*, the attendant is able to move the handle *o* from the position shown in Fig. 2 into that shown in Fig. 4, so that the projection *o'* passes through the said notch *m'* and the bottom cone-drum *c* is lifted by the connections *p q*, thereby turning the shaft *r* in its bearings and by the lever *s* moving the double-armed lever *t* and allowing the lever *w* to fall into the position shown in Fig. 3, so as to uncouple the catch-lever *k*. The attendant can then by means of the hand-wheel *h* turn the shaft *g* and pinion *f*, and thus wind back in the usual way the rack *e*, with the driving-belt *d* ready for beginning the winding of a fresh set of bobbins. When this has been done, the traverse of the rack *e* will have brought the other notch *m'* immediately over the projection *o'*, thus enabling the attendant to reverse the lifting-handle *o*, lower the bottom cone-drum *c*, and recouple the catch-levers *k k'* and restore all the parts to their normal positions, as indicated in Fig. 1.

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, the cone strap-fork rack, a notched plate secured thereto adjustably, the bottom cone-drum, the lifting-handle therefor, and a projection secured to said lifting-handle, said projection being adapted to pass through the notches in the plate only at the commencement and finish of winding a set of bobbins, substantially as described.

2. In combination, with the cone strap-fork rack, a notched plate secured adjustably thereto, the bottom cone-drum-lifting gear, the handle therefor, a projection fixed on the handle and adapted to pass at times through the notches of the said adjustable plate, the catch-levers, and a lever coupling the catch-levers together while the bobbins are building and connections from the bottom cone-drum-lifting gear to operate the lever and release and recouple said catch-levers as the lifting-handle is turned, substantially as described.

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

CHARLES FREDERIC AINSWORTH.

Witnesses:
JOSEPH KYLE,
JOHN OPENSHAW.