

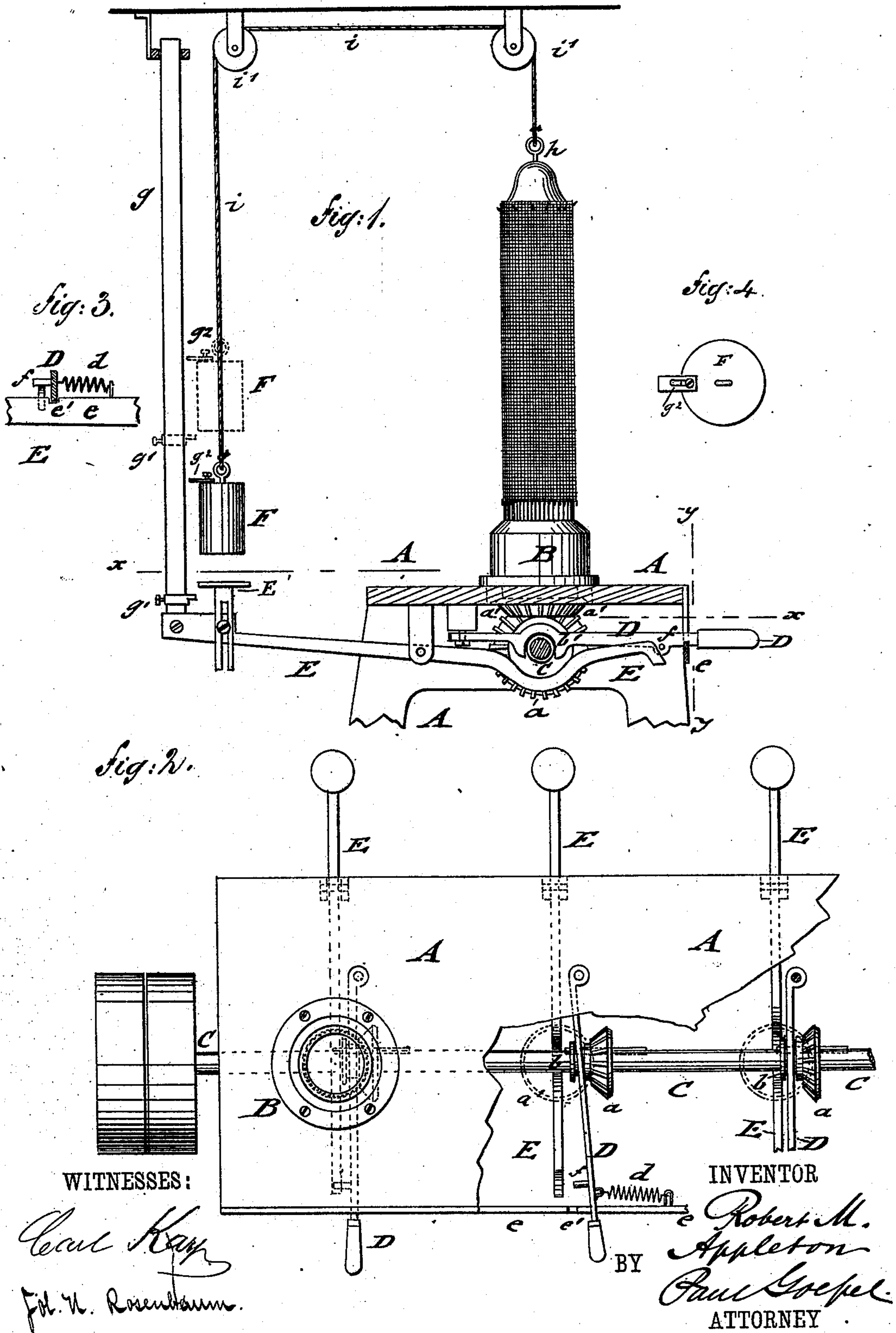
(No Model.)

R. M. APPLETON.

STOP MOTION FOR CIRCULAR KNITTING MACHINES.

No. 256,533.

Patented Apr. 18, 1882.



UNITED STATES PATENT OFFICE.

ROBERT M. APPLETON, OF LAKE VILLAGE, NEW HAMPSHIRE.

STOP-MOTION FOR CIRCULAR-KNITTING MACHINES.

SPECIFICATION forming part of Letters Patent No. 256,533, dated April 18, 1882.

Application filed August 20, 1881. (No model.)

To all whom it may concern:

Be it known that I, ROBERT M. APPLETON, of Lake Village, in the county of Belknap and State of New Hampshire, have invented certain new and useful Improvements in Stop-Motions for Circular-Knitting Machines, of which the following is a specification.

The invention has reference to that class of knitting-machines in which the operation of knitting is stopped automatically when a certain predetermined length of fabric has been knitted.

The invention consists of an automatic stop-motion for circular-knitting machines, in which the weight that pulls up the work comes in contact with an adjustable stop-lever, which latter engages an unshipping-lever, whereby the driving mechanism of the needle-cylinder is thrown out of gear and thereby the working of the knitting-machine stopped.

It consists, further, of a vertical rod connected to said stop-lever, of an adjustable stop on said rod, and of a laterally-adjustable catch on the work-pulling weight, which catch engages the stop on the rod and stops the knitting-machine by the action of the stop-lever and unshipping-lever upon the driving-gear of the needle-cylinder.

In the accompanying drawings, Figure a represents a side elevation of a circular-knitting machine, partly in section, through the machine-stand. Fig. 2 is a plan view of several machines, parts being broken away and removed. Fig. 3 is a detail vertical transverse section of the shipper-handle and its spring on line *y y*, Fig. 1, and Fig. 4 is a top view of the actuating-weight.

Similar letters of reference indicate corresponding parts.

A in the drawings represents the machine-stand, on which is arranged a series of circular-knitting machines, B, of the usual approved construction. The needle-cylinder of all the machines on the stand A and their driving mechanisms are operated by a common driving-shaft, C, that extends longitudinally below the machine-stand, said shaft carrying as many sliding bevel-pinions *a* as there are machines.

Each bevel-pinion *a* is provided with a

grooved collar, *b*, which is engaged by the curved or yoke-shaped middle portion, *b'*, of a shipper-handle, D, that is pivoted at its rear end to the under side of the stand, and provided at its front end with a handle. The shipper-handle B, and with it the motion-transmitting bevel-pinion *a*, is carried in one direction by means of a spiral spring, *d*, which is attached to the shipper-handle and to a guide-rail, *e*, at the front of the machine-stand. By carrying the shipper-handle in opposite direction to that in which the spring tends to pull it, and setting it into a notch or recess, *e'*, of the guide-rail *e*, the sliding bevel-pinion *a* is thrown into gear with the actuating bevel-wheel *a'* of the machine and retained in this position until the shipper-handle is released. This is accomplished by means of a stop-lever, E, which is fulcrumed to the under side of the machine-stand and extended forward below the driving-shaft, so as to engage by its bent or inclined front end a sidewise-projecting pin, *f*, of the shipper-handle D. The rear arm of the fulcrumed stop-lever E is extended sufficiently beyond the rear part of the machine-stand, so that a horizontal stop-plate, E', secured to the rear end of the stop-lever, is vertically below the weight F, by which the work of the machine is pulled up. The stop-plate E' is vertically adjustable upon the rear end of the stop-lever by a clamp-screw and slotted shank, or any other suitable adjusting mechanism for the purpose of being raised or lowered, so as to regulate the lengths of the goods knitted on the machine. For this purpose there is, furthermore, connected to the rear end of the shipper-handle an upright wooden rod, *g*, which runs up to the ceiling, and which carries one or more adjustable catches, *g'*, which, in connection with an adjustable projection, *g''*, on the weight, serve to stop the machine at any desired point—as, for instance, for putting in a different color of yarn, or for other purposes.

The projection on the weight may be set back when not required by loosening its fastening-screw.

The weight F is connected to the swivel and hook *h*, by which the work is pulled up, by a cord or chain, *i*, which passes over two guide-pulleys, *i'*, at the ceiling in the same manner

as heretofore. When the desired length of work is obtained the projection g^2 of the weight strikes the catch g' on the rod g , or when it is not used the weight strikes the horizontal stop-plate E' of the stop-lever E , so as to raise the front end of the same and release the shipper-handle from the notch of the guide-rail c . The spring d throws the shipper-handle sidewise, together with the sliding bevel-pinion a , which latter is thrown out of gear with the bevel-wheel a' of the machine.

With proper adjustment of the stop-plate each machine upon the stand may thus be stopped automatically when the required length of work is obtained without waste of fabric and without requiring unshipping by the attendant.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination, with the needle-cylinder and its driving means, of an unshipping-lever, a stop-lever, a work-pulling weight adapted to come in contact with the stop-lever, and means for connecting said weight with the work, substantially as specified.

2. The combination, with the needle-cylinder and its driving means, of an unshipping-lever, a stop-lever, an adjustable stop-plate attached to said lever, a work-pulling weight

adapted to come in contact with the stop-plate, and means connecting said weight with the head of the work, substantially as described.

3. The combination, with the needle-cylinder and its driving means, of an unshipping-lever, a stop-lever, a vertical rod connected to said stop-lever, an adjustable stop on said rod, a work-pulling weight adapted to come in contact with said stop, and means connecting said weight with the head of the work, substantially as set forth.

4. The combination, with the needle-cylinder and its driving means, of an unshipping-lever, a stop-lever, a vertical rod connected to said stop-lever, an adjustable stop on said rod, a work-pulling weight provided with a laterally-adjustable catch adapted to come in contact with said stop, and means for connecting said weight with the head of the work, substantially as described.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 26th day of February, 1881.

ROBERT M. APPLETON.

Witnesses:

J. F. LAIGHTON,
GEO. G. HOYT.