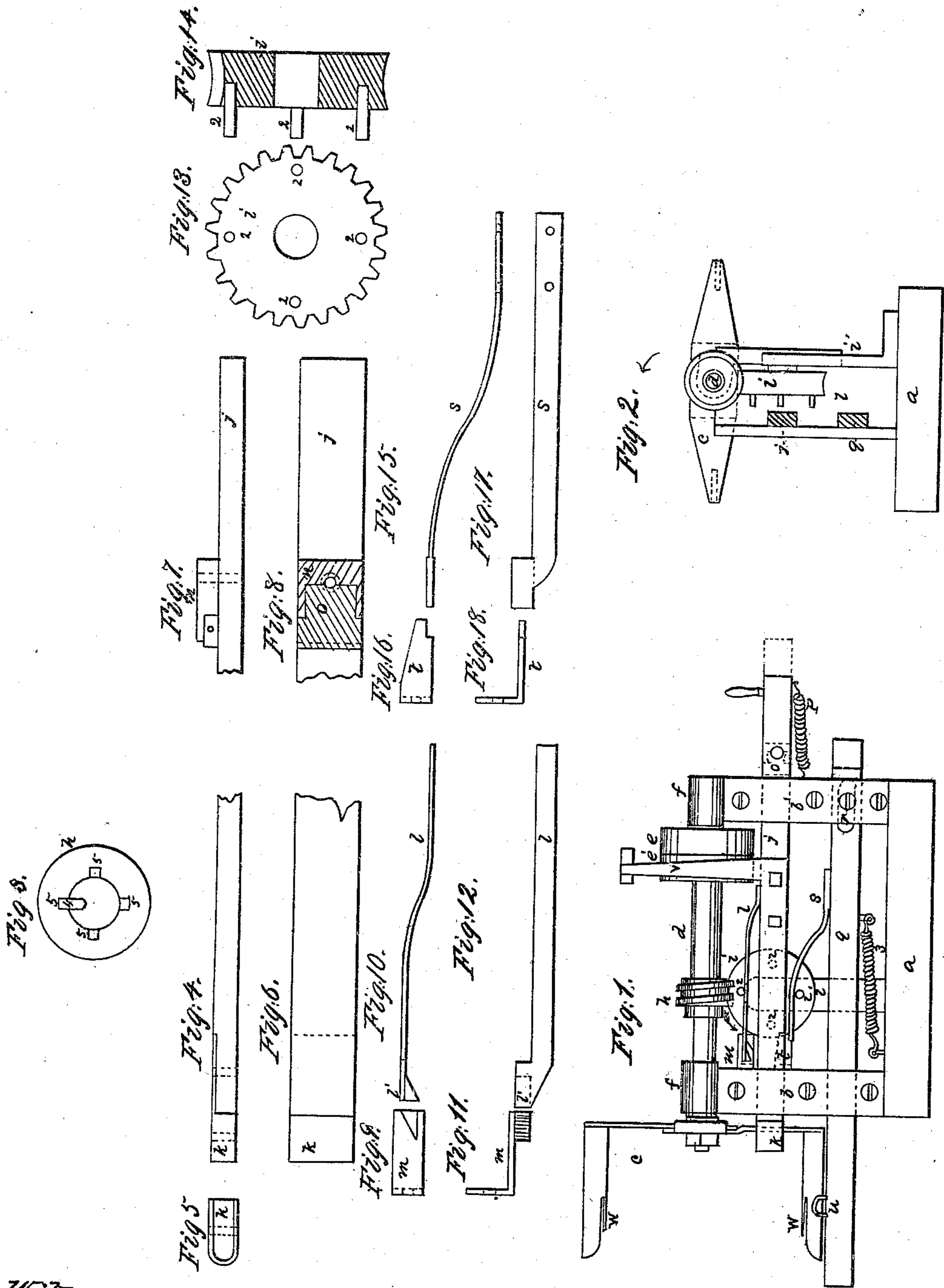


E. W. Dean.
Winding Bobbin.

N^o 106,672.

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EDMOND W. DEAN, OF NORWICH, CONNECTICUT.

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IMPROVEMENT IN STOP-MOTION FOR BRAIDING-MACHINES.

The Schedule referred to in these Letters Patent and making part of the same

I, EDMOND W. DEAN, of Norwich, in the county New London and State of Connecticut, have invented certain Improvements in the Stop-Motion of Machines for Winding Braid and other Fabrics, of which the following is a specification.

The nature of my invention consists in the employment of springs and stops, of peculiar construction and arrangement, combined with the sliding bars and an adjustable worm, and other devices herein-after fully shown and described, the object being to secure uniformity of length of the braid wound upon the machine.

In the drawing—

Figure 1 is an elevation of my improved machine.

Figure 2 is a vertical section through the line *x x*.

Figure 3 is a section of the worm *h*.

Figures 4, 5, 6, 7, and 8, are views of the sliding bar *j*, the protector *k*, and cushion *o*.

Figures 9, 10, 11, and 12 are stop and spring hereafter described.

Figures 13 and 14 are views of the worm-gear *i*.

Figures 15, 16, 17, and 18 are views of the change spring and stop.

The same marks of reference indicate similar parts in each figure.

a represents the bed, which supports the whole structure.

b and *b'* are stands, which support the shaft *d* and bars *j* and *q*.

c is the reel upon which the braid is wound. It may be secured to the shaft in any convenient manner.

The driving-pulley *e* and the worm *h* are upon this shaft, *d*, as shown.

The worm *h* is secured to the shaft by the stud 4 engaging one of the slots 5 5 5, and by means of these several slots the worm may be placed in any required position.

The bearings *f*, of the shaft *d*, are made and arranged in any convenient manner, but so as to be adjustable vertically.

i is the worm-gear, supported by the stand *i'*, and working into the worm *h*.

This worm-gear may be of any desirable size, or any number of gears may be made, ready for required changes, for varying the lengths of braid, and, when the size of the gear is changed, the shaft *d* should be raised or lowered accordingly.

There are several pins, 2, projecting from the face of the worm-gear, at equal radial distances.

j is the stopping-bar, and is made of wood or other light material.

The protector *k* is made of metal, and secured to the bar, and rounded at the top, the back side reach-

ing back into the stand *b*, so as to prevent the bar from wearing in the bearing by the action of the reel.

o is a leather or other elastic cushion, attached to the bar *j*, by means of the dovetail piece *n*, (see figs. 7 and 8.)

l is a spring, attached to the upper edge of the bar *j*, and has upon its lower side and at one end, an angle piece, *l'*, (see figs. 10 and 12.)

m is a beveled stop, (see figs. 1, 9, and 11,) attached to the stand *b*, and so arranged that, when the bar *j* is thrown back, the end of the spring will slide over the stop, and drop down, so as to prevent the bar from returning to its former position.

When the spring is disengaged from the stop, the spiral spring *p* will throw the bar into a position which will arrest the motion of the reel, as shown.

q is the changing-bar; and

u the loop, through which the braid runs to the reel.

s is the change spring, attached to the upper edge of the bar *q*.

t is a stop for holding the change-bar to the right, and is attached to the stand *b*, (see fig. 1.)

When the spring *s* is pressed down, the spiral spring *s* will throw the changing-bar to the left; the slot and pin *r* will prevent its moving too far either way.

v is the shipper attached to the bar *j*.

The operation of my invention is as follows:

The end of the braid is pressed through the loop *u*, and attached to one of the needles *w*, and the bar *j* pressed back until caught by the spring *l*, disengaging the reel from the protector, the shipper *v* at the same time carrying the driving-belt upon the tight pulley, and starting the machine in the direction indicated by the arrows.

As the winding proceeds, the worm *h* causes the worm-gear *i* to revolve, and, when the reel is half full, one of the pins, 2, will press down the spring *s*, disengaging it from the stop *t*, when the bar *q* will move to the left, the loop *u* carrying the braid the required distance.

When the required length is wound upon the reel, one of the pins, 2, will press down the spring *l*, disengaging it from the stop *m*, the spring *p*, carrying the bar *j* to the left, shipping off the driving-belt, and stopping the machine, the protector *k*, at the same time, preventing the momentum from carrying the reel too far.

The worm *h* should be adjusted by placing the stud 4 in one of the slots, 5, which will disengage the spring *l* at the proper point, before the arm of the reel reaches the protector, so that the length of braid wound will be uniform.

The position of this worm upon the shaft will vary with braid of different thickness, therefore the necessity of having several slots.

The cushion *o* will relieve the bar *j* from much of the force of concussion when stopping the reel.

The teeth of the worm-gear are not shown in figs. 1 and 2, but will be readily understood upon reference to fig. 13.

I claim as my invention—

The bars *j* and *q*, the protector *k*, the springs *l* and

s, the stops *m* and *t*, the adjustable worm *h*, the worm-gear *i*, and the cushion *o*, the whole being constructed, arranged, and operated in the manner substantially as and for the purpose described.

Norwich, March 9, 1870.

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