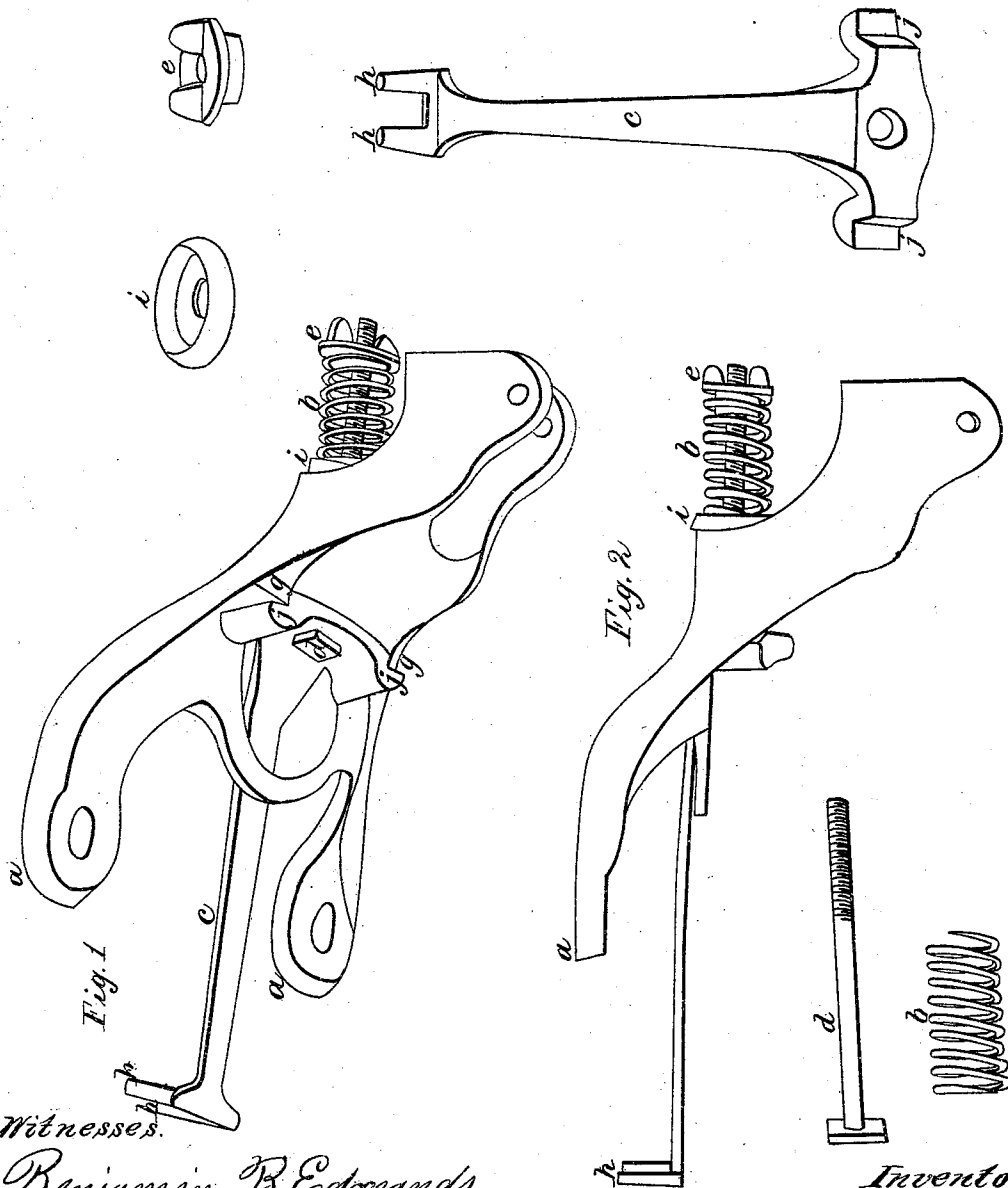


G. H. Winchester. Braiding Mach.

N^o 105,022.

Patented Jul. 5, 1870.



Witnesses.

Benjamin B. Edmonds
Arnold S. Hood

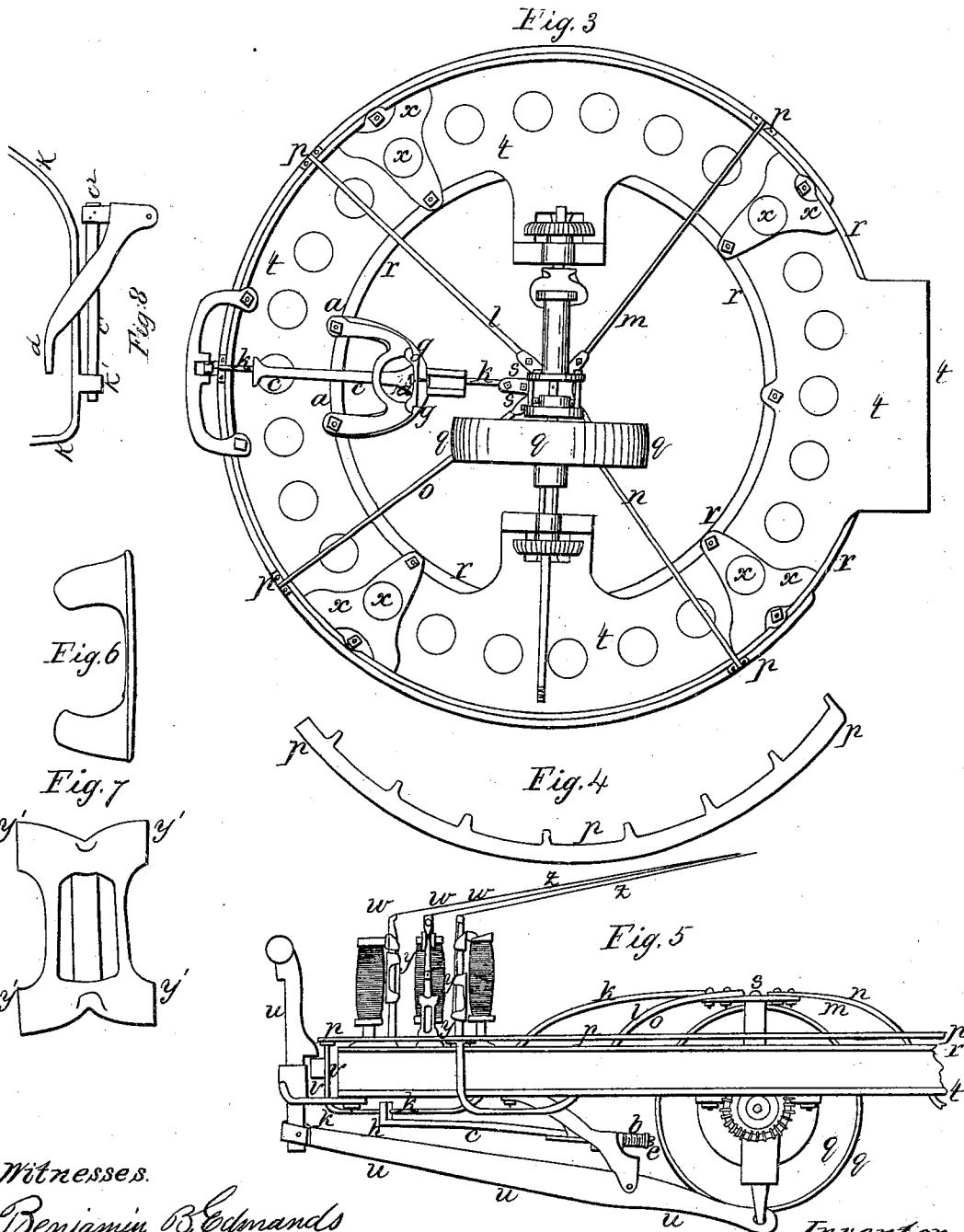
Inventor.

Gilman H. Winchester

G. H. Winchester Braiding Mach.

N^o 105,022.

Patented Jul. 5, 1870.



Witnesses.

Benjamin B. Edmonds
Arnold. S. Hood

Inventor.

Gilman H. Winchester

United States Patent Office.

GILMAN K. WINCHESTER, OF PROVIDENCE, RHODE ISLAND.

Letters Patent No. 105,022, dated July 5, 1870.

STOP-MOTION SPRING FOR BRAIDING-MACHINES.

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

To all whom it may concern:

Be it known that I, GILMAN K. WINCHESTER, of Providence, in the county of Providence and State of Rhode Island, have invented an Improved Stop-motion Spring for Braiding-Machines; and I do hereby declare that the following is a full and exact description, reference being had to the accompanying drawing making a part of this specification.

The nature of my invention consists of a combined double-fulcrumed lever and spring, by means of which the stop-motion, when turned upon its center, on the breaking of a strand, is thrown back to its proper place of rest exactly.

To enable those skilled in the art to make and use my invention, I give the following description of its construction and operation.

Figure 1 represents the stop-motion spring with its lever, together with the frame by which it is attached to the machine.

Figure 2 represents the frame alone, showing the bearings of the spring and lever.

Figure 3 represents the bottom view of a braiding-machine with the stop-motion spring attached thereto at *a*.

Figure 4 represents a section of the stop-motion rim, there being three sections in each rim.

Figure 5 represents a side view of the front part of the body of a braiding-machine with three of the carriers and bobbins pertaining thereto, the gears that propel the carriers being between the plates *r r* and *t t*, hidden from sight by a band that surrounds the machine.

The weights *y y y*, upon the carriers *w w w*, are suspended by the strands *z z z*.

When the machine is in operation, and a strand breaks, the weight slides to the bottom of the carrier-post, and the flange of the weight strikes one of the points on the inside of the stop-motion rim, turning the rim on its center, thus depriving the shipper *u u* of its support at *r r*, letting it fall and stopping the machine.

The outer end of the lever *c* being made to follow the movement of the stop-motion, by means of the arm *k* passing through the slot at *h h*, the spring *b* becomes compressed, throwing the stop-motion back as soon as the fallen weight passes the point which it struck.

By means of the lever *c* being provided with two

fulcrums, the stop-motion is brought back to the exact point required, and therein is the advantage of this spring. Those heretofore in use on braiding-machines being straight strips of steel, fastened rigidly at one end, their action was such as to bring the stop motion back to a point near that desired, but not always to the exact point.

The use of the straight spring is also attended with much more breakage, both of springs and the weights as they come in collision with the stop-motion, the straight springs being less pliable than my improved spring.

In fig. 3, the shipper *u u u*, seen in fig. 5, is left out, in order to show more fully the spring-lever *c*, and the stop-motion arm *k*.

Figure 6 is a side view, and

Figure 7 is a front view of the weight *y* that slides on the post of the carrier *w w*.

When the strand by which it is suspended breaks, this weight falls to the foot of the carrier-post, and the flange *y'* strikes one of the points on the inside of the stop-motion rim, throwing the stop-motion far enough to drop the shipper and stop the machine.

These weights are so constructed that they may be used with either end uppermost.

Figure 8 represents the spring heretofore more commonly in use.

The frame *a'* is fastened to the machine as in fig. 5.

The straight spring *c'* is fastened at *c'* to a part of the frame, while its other end passes loosely through a slot in the stop-motion arm at *K*.

The rigidity of the spring *c'*, at *c'*, is the power that brings the stop-motion back, approximately, to its proper place of rest, when thrown therefrom by the action of the machine.

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

A double-fulcrumed lever, combined with a spring, in such a manner that the fulcrums of the lever shall be on each side of the point where the spring makes connection with the lever, all combined with the stop-motion of a braiding-machine, in such a manner as to always bring the stop-motion back to the same center or place of rest after being thrown therefrom.

GILMAN K. WINCHESTER.

Witnesses:

BENJAMIN B. EDMANDS,
ARNOLD S. HOOD.