

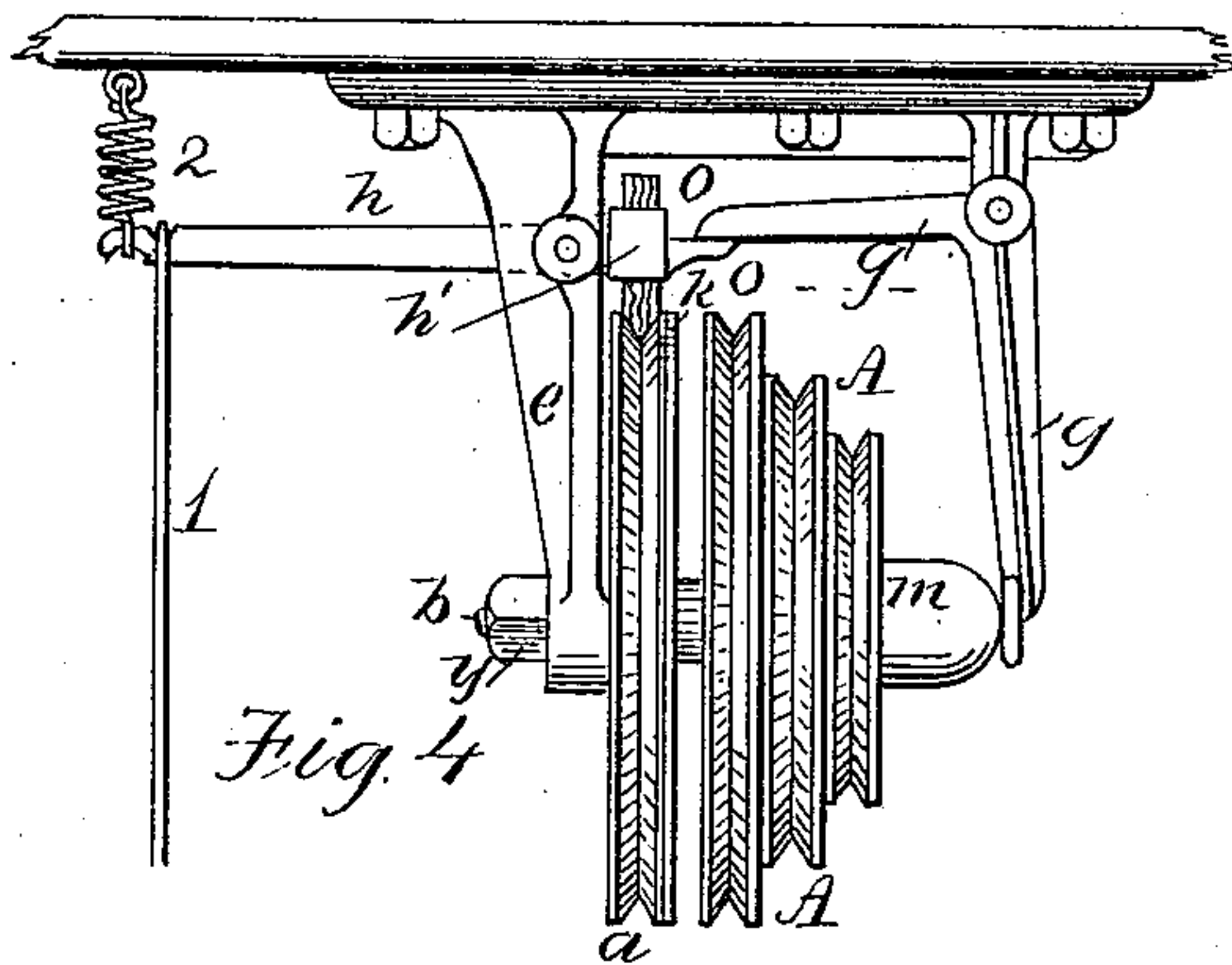
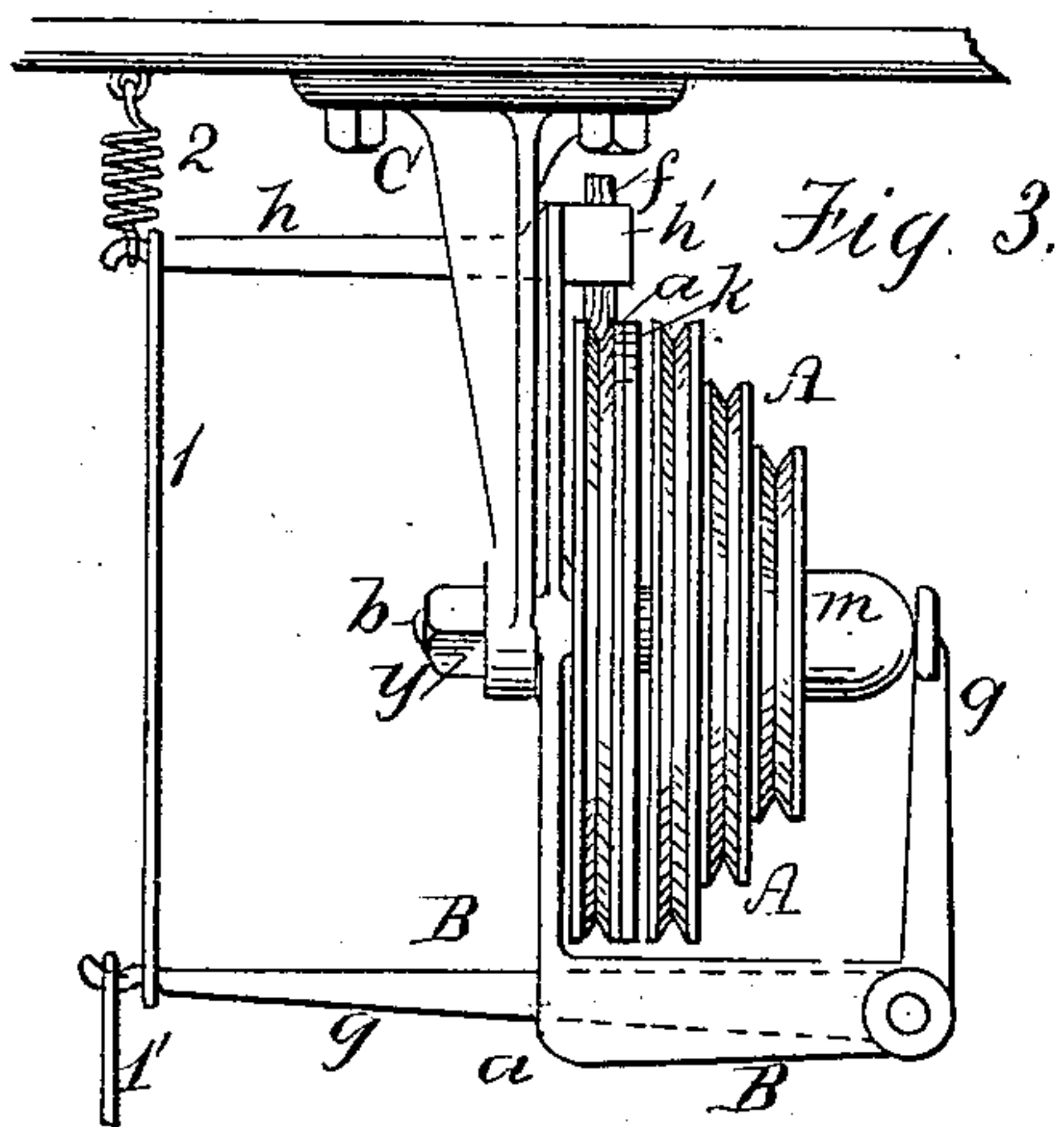
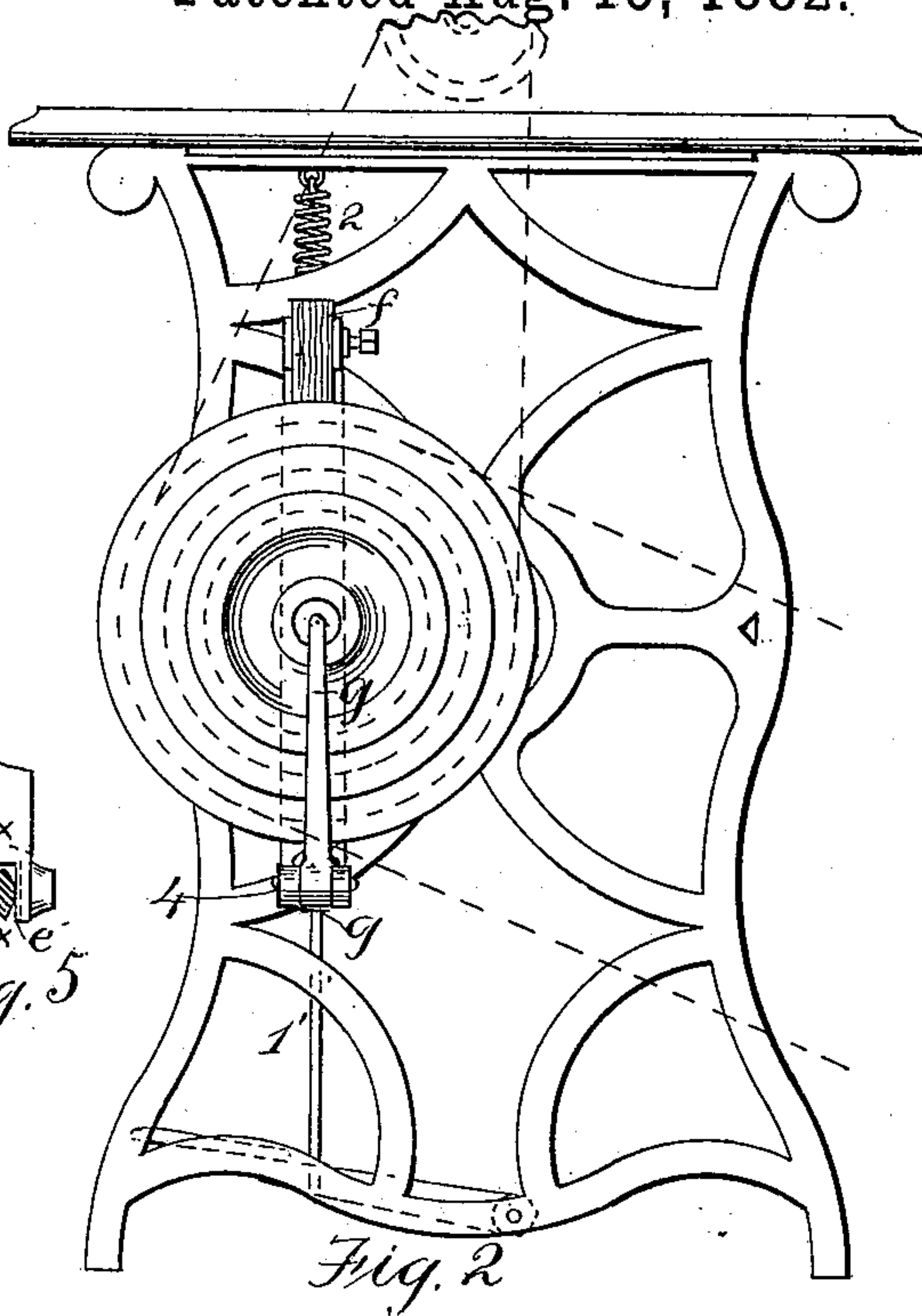
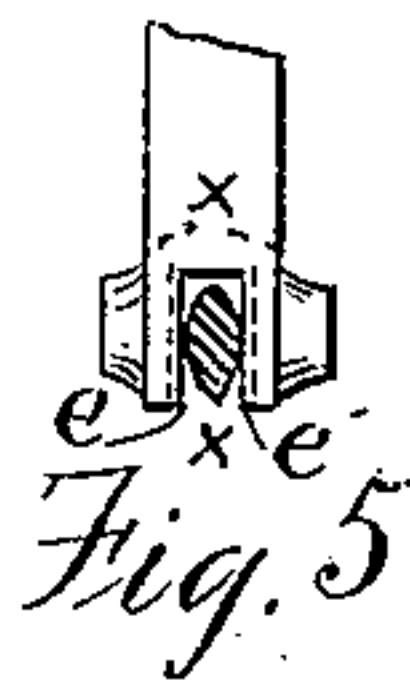
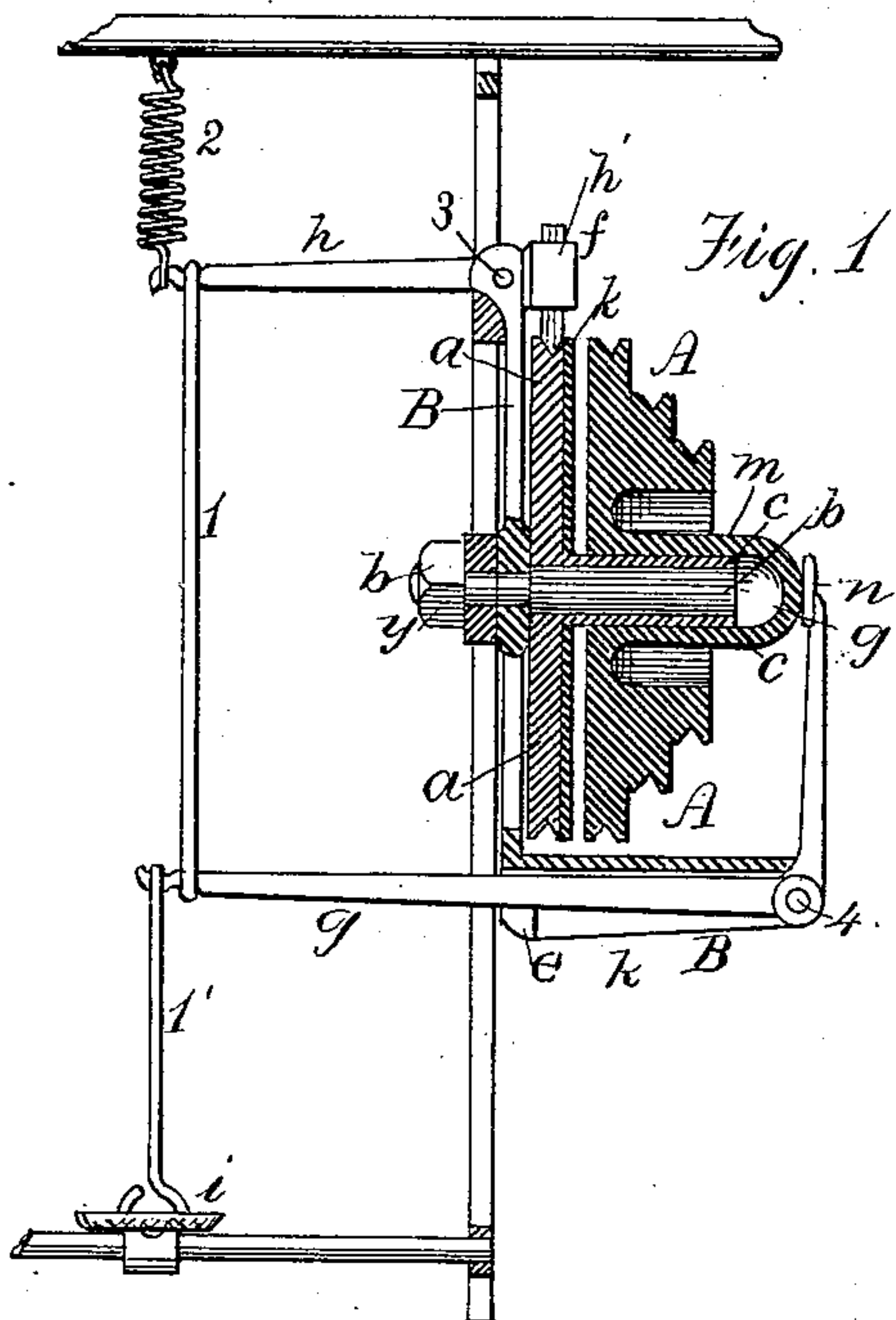
(No Model.)

J. T. SHAW.

DEVICE FOR TRANSMITTING AND ARRESTING MOTION.

No. 262,624.

Patented Aug. 15, 1882.



Witnesses:
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UNITED STATES PATENT OFFICE.

JAMES T. SHAW, OF PHILADELPHIA, PENNSYLVANIA.

DEVICE FOR TRANSMITTING AND ARRESTING MOTION.

SPECIFICATION forming part of Letters Patent No. 262,624, dated August 15, 1882.

Application filed August 19, 1881. (No model.)

To all whom it may concern:

Be it known that I, JAMES T. SHAW, a citizen of the United States of America, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented certain new and useful Improvements in Devices for Transmitting and Arresting Motion; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters or figures of reference marked thereon, which form a part of this specification.

The object of my invention is to provide simple and efficient means for communicating rotary motion from a pulley running loosely upon a hollow spindle to another pulley secured to the same hollow spindle, or one which is a continuous part of the same hollow spindle, and for arresting the motion of the driven pulley at any point or at any irregular and unanticipated interval without the use of a clutch-coupling or equivalent device.

In the drawings, Figure 1 is a side view, partly in section, showing the application of my improvement to an ordinary sewing-machine table-leg. Fig. 2 is an end view thereof. Fig. 3 shows the improvement suspended by a hanger from the under side of a work-table. Fig. 4 represents another arrangement of the moving levers and frame. Fig. 5 is a section on the line *x x* of Fig. 1.

In carrying out my invention I provide a frame, *B B*, secured to a bracket or hanger, *C C*, as in Fig. 3, or to the supporting-leg of any machine, as shown in Figs. 1 and 2, by means of a stud, *b b*, rigidly secured by a nut, *y*. The frame *B B* is constructed so as to carry the lever *g g*, pivoted at 4, and also the brake-arm *h*, pivoted at 3. In a socket, *h'*, at the short end of the brake-arm *h*, is secured a piece of hard wood, *f*, in such a manner as to be vertically adjustable, and of such shape as to conform to the groove in the pulley *a a*. The brake-arm *h* and pivoted lever *g* are connected together by a link or rod, 1, and another rod, 1', is attached between the lever *g g* and a foot-tread, *i*. A spiral pull-spring, 2, exerts a con-

tinued upward strain on the long end of the brake-arm *h* and communicates such strain to the long end of the lever *g g*, for a purpose hereinafter described.

Upon the fixed or stationary stud *b b* revolves freely a hollow spindle, *c c*, which forms the hub of the pulley *a a*, and upon this hollow spindle or hub revolves another pulley, *A*, or a series of pulleys, usually denominated "cones," having an extended hub closed at the outer end, which is conical, as shown at *m*. In the interior of this conical end is a cavity, *n*, in which may be placed oil for lubricating, and in which a small portion of compressed air may be stored up to act as a spring, as hereinafter described.

Between the two impinging surfaces of the pulleys *a a* and *A* is placed a disk of cardboard or other suitable material, *k*, to hang there loosely when the pulleys are apart and to form a junction between them when brought together, the pulley *A* having endwise play upon the hollow spindle *c c*.

As the motion of the foot-treadle *i* is never perpendicular, and as there is danger of the lever *g g* being drawn out of line, I provide guides *e e* in the casting of the frame, which will counteract the side pull.

The operation of my device is as follows: The pulley *A* being belted to the main driving-shaft or other rotary power in the shop, I press down with the foot on the foot-tread *i*. This pressure is communicated through the rods 1 1' to the long end of the brake-arm *h*, said rods operating to draw said arm down against the pull of the spring 2, and so raise out of the groove of the pulley *a a* the brake *f*, and, at the same time operating upon the long end of the lever *g g*, pivoted at 4, said lever *g g* will likewise be drawn downward, thus bringing a pressure against the conical end *m* of the hub of the moving pulley *A*, and this pressure continued will bring the pulley *A* in contact with the friction-disk *k*, and, pressing it against the side surface of the pulley *a a*, cause it to revolve so long as the pressure continues to be applied. If the foot is raised from the tread *i*, the upward pull of the spring 2, acting through the connections 1 1' upon the brake-arm *h* and lever *g g*, together with the

expansion of the compressed air and oil in the chamber *n* of the hub *m*, operating to push off the pulley *A*, will restore the lever *g g* and also the brake-arm *h* to their former positions, and
 5 will throw the brake *f* into action to stop the wheel or pulley *a a*.

Another combination of movements may be used, as in Fig. 4, where the brake-arm *h*, in addition to acting as a brake, will, when di-
 10 rectly actuated by the foot-tread *i* through the rod *l*, relieve the brake *f*, and at the same time, as shown at *o o*, will trip the lever *g g* and cause it to act on the conical hub *m* of the pulley *A* and bring its inner surface into con-
 15 tact with the friction disk.

The improvements hereinbefore set forth are particularly applicable to shoe-sewing machines and sewing-machines operated by power where it is necessary to provide for the sud-
 20 den stopping and starting of the needle-bar; but the same improvements may be applied to various other machines.

I am aware that the patent granted to R. B. Chapman and J. C. Chapman, dated March 16,
 25 1875, No. 160,877, shows and describes a loose driving-pulley combined with two frictional disks, one fastened to the shaft and the other independent of it, and fixed or stationary and intermediate mechanism for reversing the mo-
 30 tion. This I therefore disclaim.

I am also aware of another device having an angularly-grooved female wheel secured to the driving-shaft of a sewing-machine, a male friction-wheel secured to one end of another
 35 shaft, having its bearing in a sleeve, and a bent lever adapted at one end to bear against the

end of the last-named shaft and at its other end, through the medium of a spiral spring, to press against the female friction-wheel and prevent its rotation. This I also disclaim. 40

What I do claim as my invention is—

1. In a device for transmitting and arresting motion, the combination, with the leg or hanger of the machine, of the frame *B*, pulley *a*, stud *b*, nut *y*, and hollow spindle *c*, substan- 45
 tially as and for the purpose set forth.

2. The combination of the frame *B*, brake-arm *h*, pivoted thereto at 3, and having socket *h'*, vertically-adjustable brake *f*, pivoted lever *g g*, carried by said frame *B*, vertical rod *l*, con- 50
 necting said brake-arm *h* and lever *g*, spring 2, attached at its lower end to the long end of the brake-arm and at its upper end to the under side of the bench or table supporting the machine, and the rod *l'* and treadle *i*, sub- 55
 stantially as and for the purpose set forth.

3. The combination of the fixed stud *b*, pulley *a*, hollow spindle *c*, forming the hub of said pulley, loose friction-disk *k*, and endwise-moving pulley *A*, having an extended conical hub, 60
m, having cavity *n*, substantially as and for the purpose set forth.

4. The combination, with the treadle *i* and the lever *g*, of the guides *e e*, as and for the purpose described. 65

In testimony whereof I affix my signature in presence of two witnesses.

JAMES T. SHAW.

Witnesses:

WILLIAM J. BROWN, Jr.,
 FRANK M. ROGERS.