

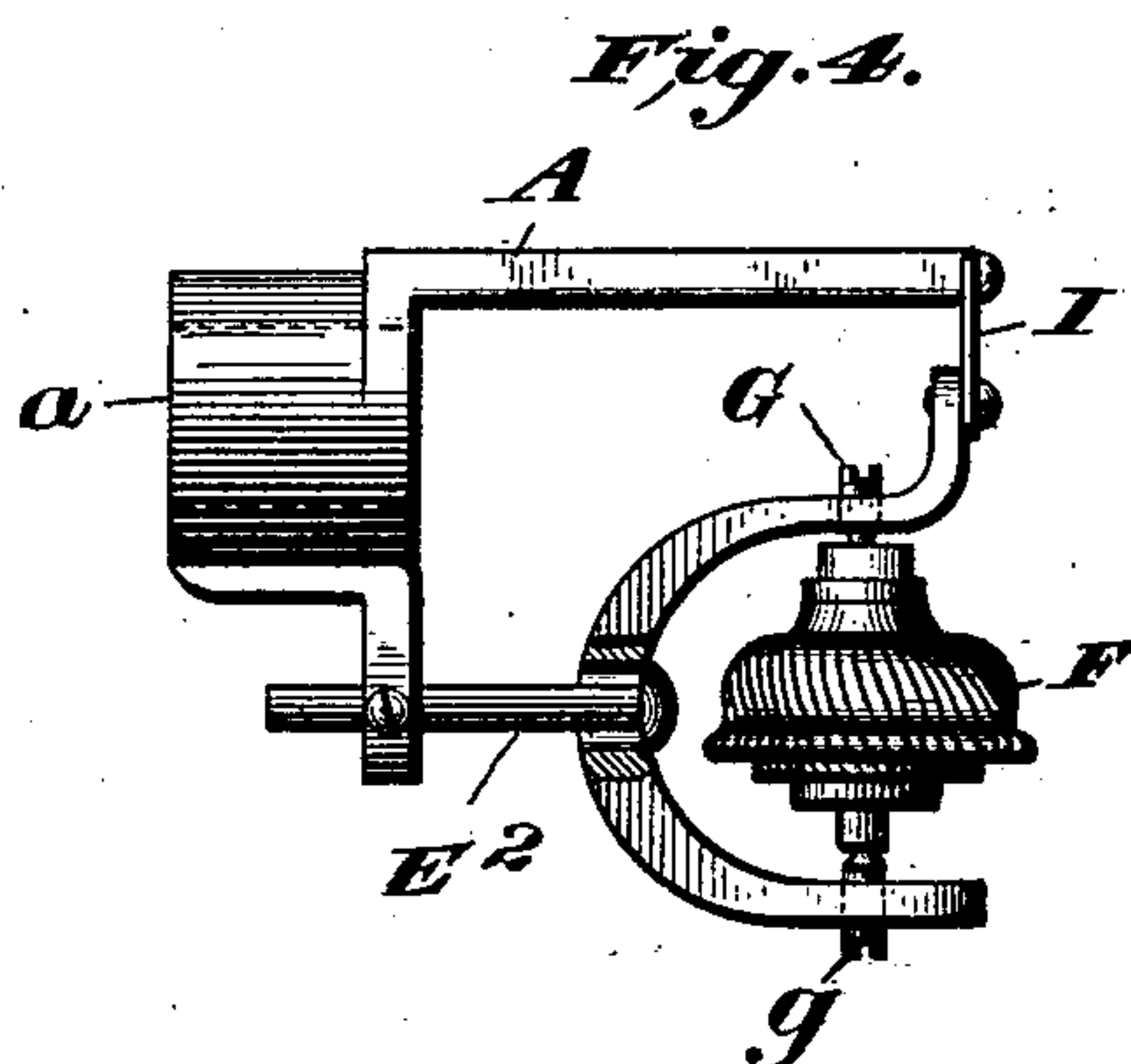
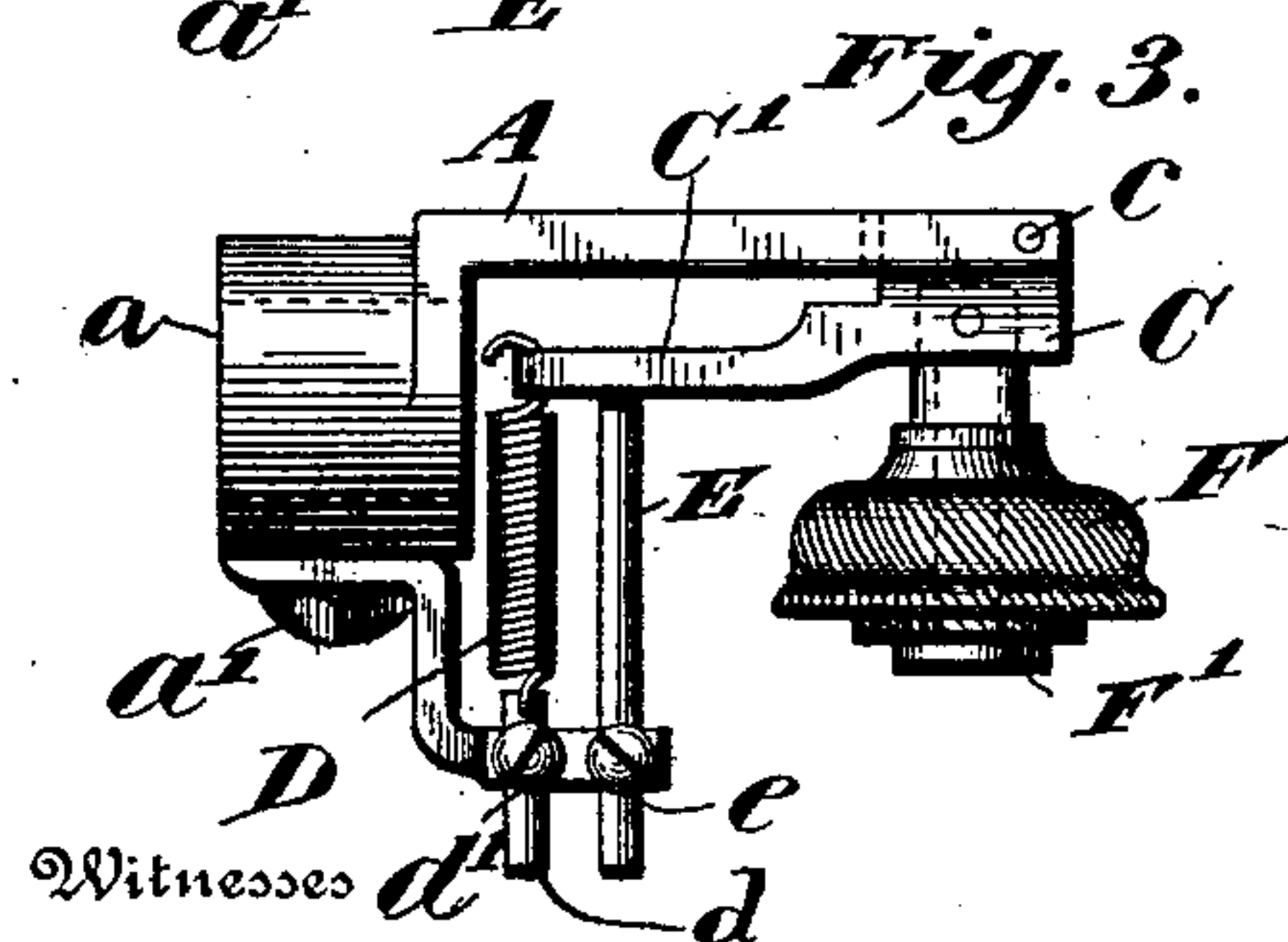
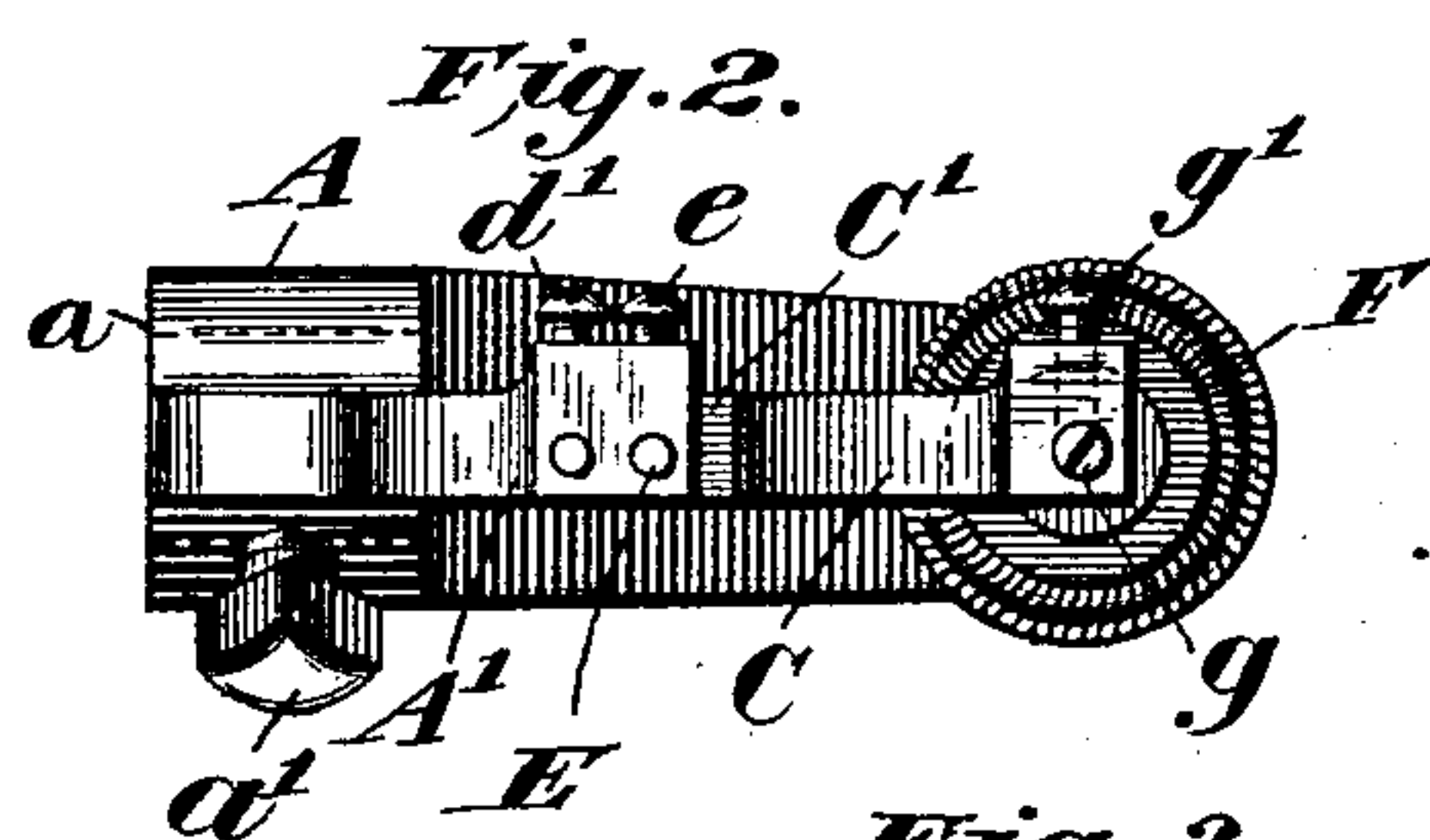
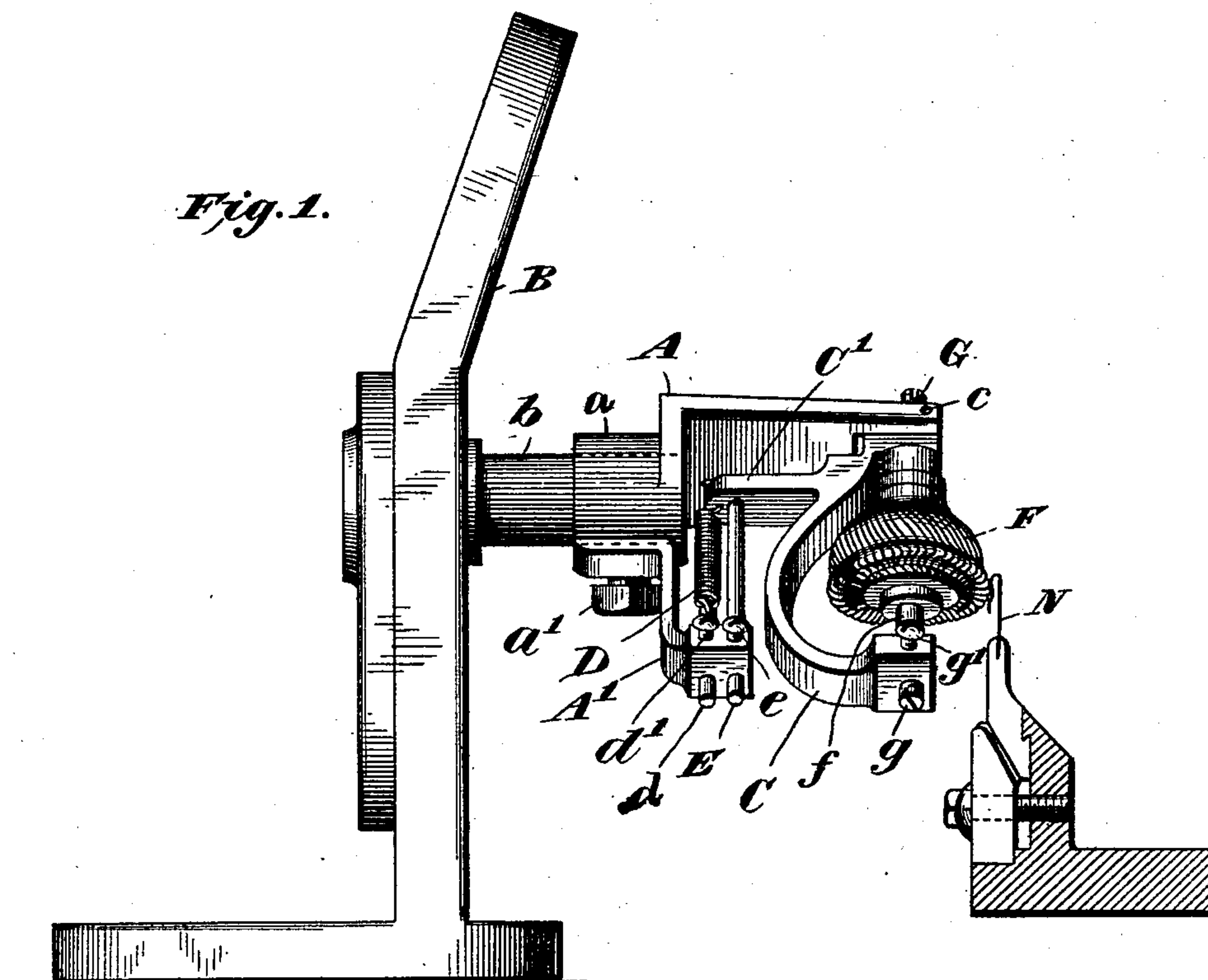
**No. 714,064.**

Patented Nov. 18, 1902.

**E. TOMPKINS.**  
**SINKER BUR HOLDER.**

(Application filed May 8, 1902.)

(No Model.)



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# UNITED STATES PATENT OFFICE.

ERNEST TOMPKINS, OF TROY, NEW YORK.

## SINKER-BUR HOLDER.

SPECIFICATION forming part of Letters Patent No. 714,064, dated November 18, 1902.

Application filed May 8, 1902. Serial No. 106,473. (No model.)

*To all whom it may concern:*

Be it known that I, ERNEST TOMPKINS, of Troy, in the county of Rensselaer and State of New York, have invented certain new and  
5 useful Improvements in Sinker-Bur Holders; and I hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, which form a part of this specification.

10 This invention is an improved "bur" or "loop-wheel" holder for knitting-machines, particularly designed for supporting the "sinker-burs" of machines for knitting delicate and very fine fabrics.

15 The primary object of my invention is to produce a bur-holder much more sensitive in action than those now ordinarily employed and which will yield readily and quickly to permit a knot or enlargement of the thread  
20 to pass and will instantly return to operative position and practically accomplish the objects sought for in the construction of prior bur-holders.

When a knitting-machine is in operation,  
25 if a knot, bunch, or piece of waste runs into the sinker-bur the latter is supposed to yield or back slightly away from the needles and permit the obstruction on the thread to pass; but as heretofore constructed the movable  
30 parts of the sinker-bur supports (ordinarily comprising the bur, bur-holder, shaft, and adjusting-nuts) are so heavy that instead of the bur giving way the needles are sprung backward or both bur and needles are dis-  
35 placed in order to allow the obstruction to pass. With coarse-gage needles an ordinary bunch or knot in the thread causes little trouble; but on fine work, where very small delicate needles must be used, the latter are  
40 frequently sprung so much that they are injured and fail to properly mesh with the bur-blades, and interference occurs, resulting in the needles being broken and holes being made in the fabric, causing loss of time and  
45 waste of yarn.

By my invention the resistance and weight of the moving parts of the bur-holder are reduced to a practical minimum and the bur-supports so constructed that the bur-holder  
50 can be displaced with very little effort, and the bur will yield when an obstruction or knot

in the thread passes before the needles are bent to any serious or objectionable extent.

Another object of the invention is to so construct the bur-support that the bur will be  
55 suspended and have a preferably swinging movement, permitting a ready yielding movement of the bur. Also if the axis be suspended so as to permit swinging thereof the lower part of the bur can be swung toward or  
60 from the needles to make the bur run looser or tighter in the needles, as is frequently desirable.

A further object is to provide a simple and nicely-adjustable spring-controlling device  
65 for the bur whereby it will be properly but yieldingly maintained in operative position.

The invention will be fully understood from the following detailed description of the bur-supports illustrated in the accompanying  
70 drawings, which disclose the best forms thereof now known to me. I do not, however, consider my invention restricted to any specific form of support shown in the drawings and refer to the claims for summaries of the es-  
75 sential features and combinations embraced in my invention and for which I desire protection.

In said drawings, Figure 1 is a side elevation of the preferred form of bur-holder as  
80 adapted for a bur having a central spindle. Fig. 2 is a detail plan view thereof. Fig. 3 is a side elevation, partly in section, of a modified form of holder for a bur journaled on a bushing. Fig. 4 shows another modification.  
85

A designates a bracket provided with a socket *a*, by which it can be supported on a stub-shaft *b*, attached to a standard *B*, suitably attached to the frame of the knitting-machine.  
90

The bracket *A* can be rotatably adjusted on stub *b* to properly incline the bur-axis relatively to the needles and then fastened by the set-screw *a'*, as indicated in the drawings. The particular form of the bracket or  
95 standard and the means for attaching the former to the latter are not material features of the invention, and such parts are simply conventionally indicated in the drawings.

The bracket *A* extends toward the needles  
100 *N*, and from its inner end, as shown in Figs. 1 and 2, is suspended a bur-hanger *C*, which



is hung on a pivot or hinge-pin *c*, so that it can swing longitudinally of the bracket, but is not allowed to swing laterally or move rotatively thereon. This hanger is normally held in one position relatively to the bracket by a suitably-arranged spring and stop. As shown in Fig. 1, the hanger *C* has an outwardly-extending arm *C'*, which normally rests on a stop-rod *E*, passed through an arm *A'*, depending from the bracket and adjustably secured thereto by means of a screw *e*, as shown, and a helical spring *D* is fast at one end to arm *C'* and at the other to a pin *d*, also passing through arm *A'* and secured by a screw *d'*. The spring holding the arm *C'* against the stop normally maintains the hanger in a fixed position relatively to the bracket. Any other desired and suitable construction or arrangement of spring and stops for maintaining the hanger normally in a predetermined position can be used.

The bur *F* is shown as an ordinary sinker-bur and in Fig. 1 is provided with a spindle *f*, which is centered between and rotates upon pointed screws *G g*, tapped through the upper and lower ends of the hanger, screw *g* being provided with a locking-screw *g'*.

In Fig. 3 the bur *F* is rotatably journaled on a stud *F'*, the upper end of which is connected to and suspended from the upper portion of hanger *C*. The lower curved supporting-arm of the hanger in this particular construction is useless and may therefore be omitted, the other parts, however, being the same as and operating like those in Fig. 1. Burs provided with spindles are not new, and burs journaled on bushings are quite common. Therefore the particular manner of rotatably mounting the bur in or on the hanger is immaterial, and the shape and size of the hanger may be varied to suit the style or kind of bur to be used thereon.

A very simple and cheap form of bur-support is shown in Fig. 4, in which the hanger *C* is shown as suspended from the bracket *A* by a preferably flat spring *I*, which acts both as a hinge and as a controlling-spring and will maintain the hanger in alinement with the bracket and prevent lateral oscillation of the hanger, while permitting the bur to yield when an obstruction passes between it and needle. The adjustable stop *E<sup>2</sup>* serves the same purpose as in Fig. 1.

The several forms of bur-hangers shown and described all operate upon the same principle, to wit: they yieldingly maintain the bur in operative position, but permit it to swing away from the needles to accommodate obstructions, knots, or projections on the thread.

It is obvious that many other variations can be made in the size, form, and arrangement of parts while preserving the distinguishing and novel characteristic features and mode of operation of my invention and within the scope thereof.

By mounting the bur in or on swinging or

hinged supports the number and weight of the moving parts can be reduced to a minimum and the greatest sensitiveness and quickness of movement of the bur attained. As the controlling-spring merely has to hold the bur up to its work, it can therefore be made very light and can be easily adjusted. The bracket being rotatable on the stub, permits ready adjustment relative to the needles.

Operation: If a knot in the thread comes between the bur and a needle, the bur yields and swings slightly away from the needle, the hanger swinging with it. Practically the only resistance offered to this movement of the bur and hanger is the slight inertia of the bur and the resistance of the spring *D*, which is regulable by the adjustment of pin *d* or stop *E*. In the ordinary bur-supports the bur, bur-support, bracket, the shaft carrying the latter, and the adjusting-nuts for such shaft all have to be bodily moved together, and in addition the resistance of a spring sufficiently strong to quickly return all these parts to normal position and retain the bur in position in the needles has to be overcome whenever a knot reaches the bur or the needles have to yield, and, as above explained, in fine work with small needles the latter will unduly bend before the bur-support will move sufficiently to pass the obstruction. In the present invention the force necessary to swing the bur and light frame and overcome the working resistance of the spring *D* (which is merely sufficient to hold the bur normally in position in the needles) is so small that the bur will yield without undue flexion or bending of the needles, and the annoyance and damage incident to the use of present forms of bur-supports will be greatly lessened, if not entirely eliminated. It will be observed, moreover, that the spring *D* does not have to bodily move any heavy parts, but is employed merely to hold the bur up to its work.

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

1. In a knitting-machine, a swinging sinker-bur holder free to yield to obstructions upon the thread or needles, substantially as described.

2. In a knitting-machine, a swinging spring-controlled sinker-bur holder free to yield to obstructions upon the thread or needles, substantially as described.

3. In a knitting-machine, an adjustable support and a swinging or rocking sinker-bur holder connected therewith and adapted to yield readily to obstructions upon the thread or needles.

4. In a knitting-machine, a support, a swinging sinker-bur holder connected therewith free to yield to obstructions upon the thread or needles, and a controlling-spring for said holder.

5. In a knitting-machine, an adjustable bracket or support, and a sinker-bur holder



connected therewith capable of swinging longitudinally thereof and adapted to yield readily to obstructions upon the thread or needles.

5 6. In a knitting-machine, a support and a rocking or swinging sinker-bur hanger connected therewith free to yield to obstructions upon the thread or needles, substantially as described.

10 7. In a knitting-machine, an adjustable support, and a sinker-bur hanger pivotally connected therewith and adapted to yield readily to obstructions upon the thread or needles.

15 8. In a knitting-machine, an adjustable support, and a bur-hanger pivotally connected therewith free to yield to obstructions upon the thread or needles, and an adjustable controlling-spring for said holder.

20 9. In a knitting-machine, a rotatably-adjustable bracket or support and a sinker-bur holder pivotally connected therewith and adapted to yield readily to obstructions upon the thread or needles, capable of moving longitudinally but not laterally thereof.

25 10. In a knitting-machine, an adjustable bracket, a sinker-bur holder connected therewith capable of swinging longitudinally thereof and adapted to yield readily to obstructions upon the thread or needles, and a spring and stop retaining the holder normally in position relative to the bracket, substantially as described.

30 11. In a knitting-machine, an adjustable bracket, a swinging bur-hanger connected thereto capable of swinging longitudinally but not transversely thereof and adapted to yield readily to obstructions upon the thread or needles, and an adjustable spring for yieldingly retaining the hanger in normal position relative to the bracket, substantially as described.

12. In a knitting-machine, the combination of a standard, a bracket adjustably mounted thereon, and a yielding sinker-bur holder connected to the bracket and capable of swinging longitudinally thereof and adapted to yield readily to obstructions upon the thread and needles. 45

13. In a knitting-machine, the combination of a standard, a bracket rotatably adjustable thereon, and a yielding sinker-bur holder connected to the bracket and capable of swinging longitudinally but not transversely of the bracket and adapted to yield readily to obstructions upon the thread or needles, substantially as described. 55

14. In a knitting-machine, the combination of a standard a bracket adjustably connected therewith, and a swinging hanger attached to the bracket, a stop for the hanger, a controlling-spring connecting the bracket and hanger, and a bur mounted on the hanger and adapted to yield readily to obstructions upon the thread or needles, substantially as described. 65

15. In a knitting-machine, the combination of a standard, a bracket rotatably connected therewith; and a swinging hanger attached to and suspended from the bracket; with an adjustable stop for the bracket, an adjustable controlling-spring connecting the bracket and hanger, and a bur mounted on the hanger and adapted to yield readily to obstructions upon the thread and needles, substantially as described. 75

In testimony that I claim the foregoing as my own I affix my signature in presence of two witnesses.

ERNEST TOMPKINS.

In presence of—

AUGUSTUS A. MEYER,  
JAMES S. WHEELER.