(No. Model.)

C. STEVENSON.

RATCHET MECHANISM.

No. 408,545. Patented Aug. 6, 1889.

FIG. 1.

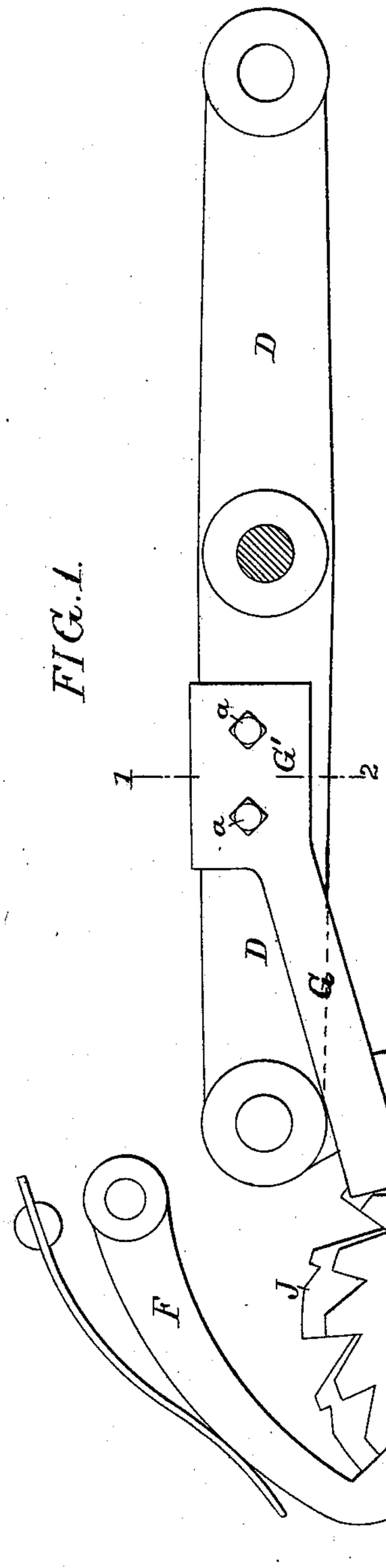


FIG. 4.

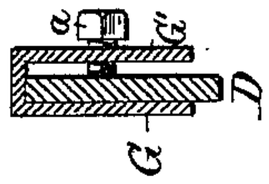


FIG. 3.

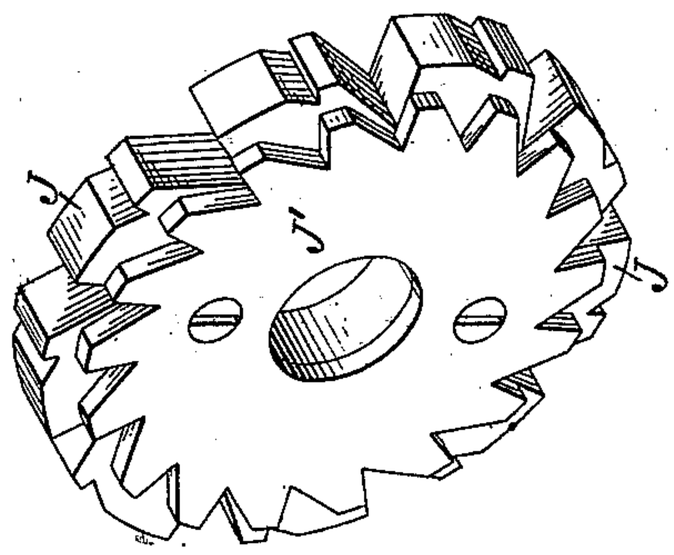
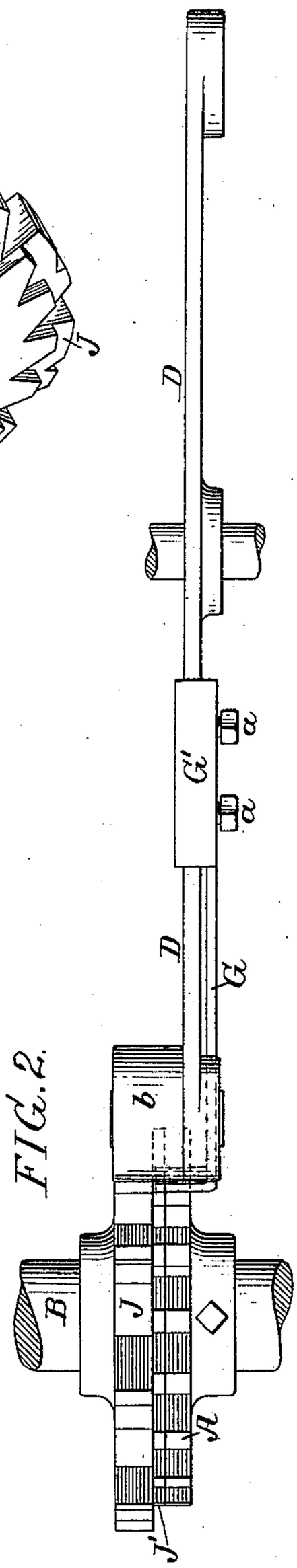


FIG. 2.



Witnesses:
Alex. Barkoff
David S. Williams

Inventor:
Charles Stevenson
by his Attorneys
Howson and Howson

UNITED STATES PATENT OFFICE.

CHARLES STEVENSON, OF PHILADELPHIA, PENNSYLVANIA.

RATCHET MECHANISM.

SPECIFICATION forming part of Letters Patent No. 408,545, dated August 6, 1889.

Application filed August 24, 1887. Serial No. 247,708. (No model.)

To all whom it may concern:

Be it known that I, CHARLES STEVENSON, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Ratchet Mechanism, of which the following is a specification.

The object of my invention is to prevent the overrunning of a ratchet-wheel operated at high speed by a pawl, and this object I attain in the manner hereinafter set forth, reference being had to the accompanying drawings, in which—

Figure 1 is a side view of pawl-and-ratchet mechanism, illustrating my invention. Fig. 2 is a plan view of the same. Fig. 3 is a perspective view of the compound ratchet-wheel shown in Fig. 1, the wheel A being removed; and Fig. 4 is a transverse section on the line 1 2, Fig. 1.

A represents a ratchet-wheel secured to a shaft B and operated by a pawl *b*, hung to a lever D, which may be vibrated by any suitable means, this forming no part of my invention. When the pawl is operated rapidly, there is a tendency of the wheel A to overrun unless the retaining-pawl F is acted upon by an exceedingly heavy spring, and in the latter case considerable power is required in order to turn the ratchet-wheel. In order to overcome this objection, I provide the lever D with a projecting finger G, so situated that when the pawl has been moved to such an extent as to complete the forward movement of the ratchet-wheel said finger will come into contact with an advancing tooth of the wheel and will prevent any further forward movement of the same, the parts being illustrated in this position in Fig. 1. As the pawl rises, however, the finger rises with it and releases the tooth, and on its next descent comes into contact with a succeeding tooth and limits the forward movement, as before.

The finger G has in the present instance a yoke G′ embracing the lever D and secured thereto by set-screws *a*, so that it can be readily adjusted thereon or removed therefrom, as it is advisable in some cases to move the ratchet-wheel without disturbing the operating-lever and its pawl, in which case the stop-finger, if fixed, would be in the way.

In the drawings I have shown my invention as applied to a compound ratchet-wheel, comprising the wheel A, fixed to the shaft, and a wheel J, loose on the shaft and having alternate deep and shallow teeth, so that the pawl engages with the teeth of the wheel A only on every alternate movement. In this case it is advisable to provide the loose wheel J with a supplementary ratchet-wheel J′, similar to the wheel A, and to so construct the finger G that it will act upon the teeth of both wheels A and J′, and thus prevent the overrunning of the wheel J as well as the wheel A.

My improvements are applicable to ratchet mechanisms generally, the particular form of ratchet mechanism shown in the drawings being that used in operating the pattern-chains of knitting-machines.

I do not claim, broadly, a stop-lug on the pawl-carrier for preventing overrunning of the ratchet-wheel by contact with one of the teeth of the same, as this has heretofore been proposed; but

I claim as my invention—

1. The combination of the ratchet-wheel, the operating-pawl, its lever, and the stop-finger having jaws embracing the lever and provided with clamping-screws, all substantially as specified.

2. The combination of the fast ratchet-wheel A, its operating-pawl, a supplementary loose ratchet-wheel J, having secured thereto a ratchet J′, similar to the wheel A, and a stop-finger operating in unison with the pawl and acting upon the teeth of both ratchet-wheels to prevent overrunning of the same, all substantially as specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

CHARLES STEVENSON.

Witnesses:
WILLIAM D. CONNER,
JOHN T. LEWIS.