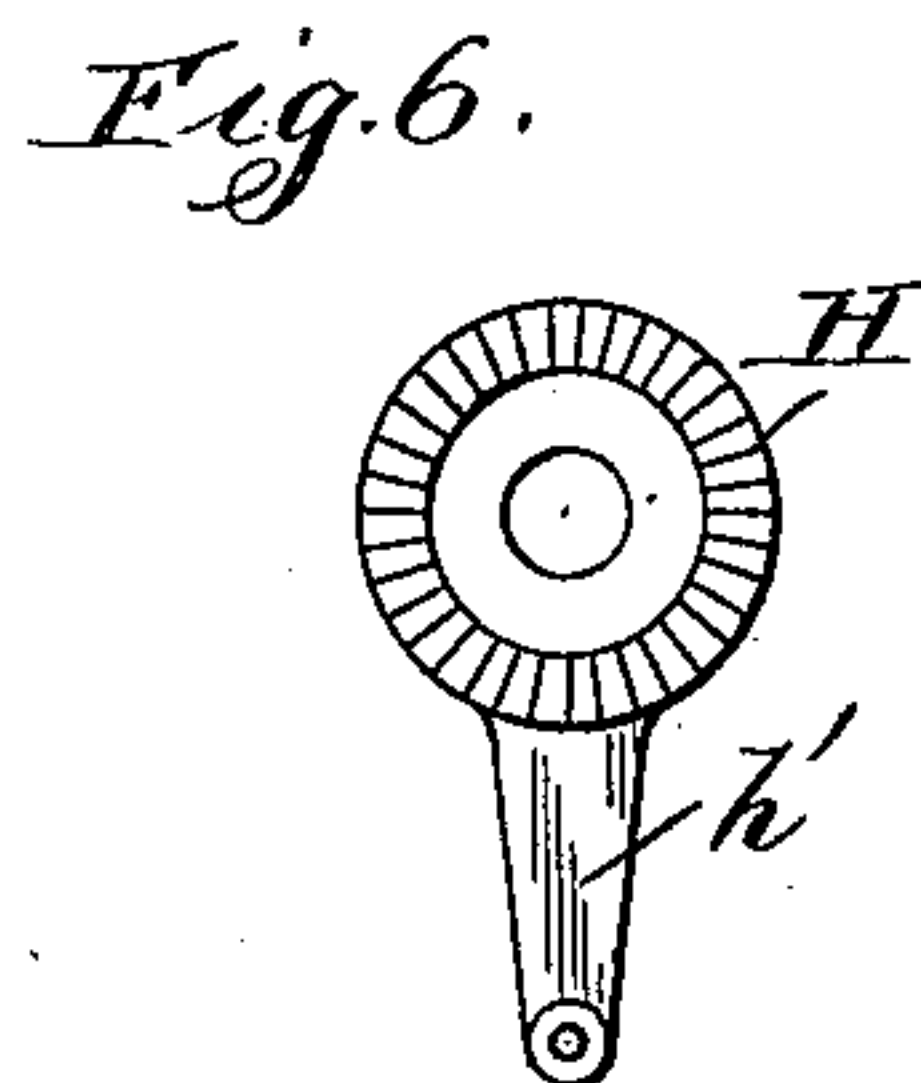
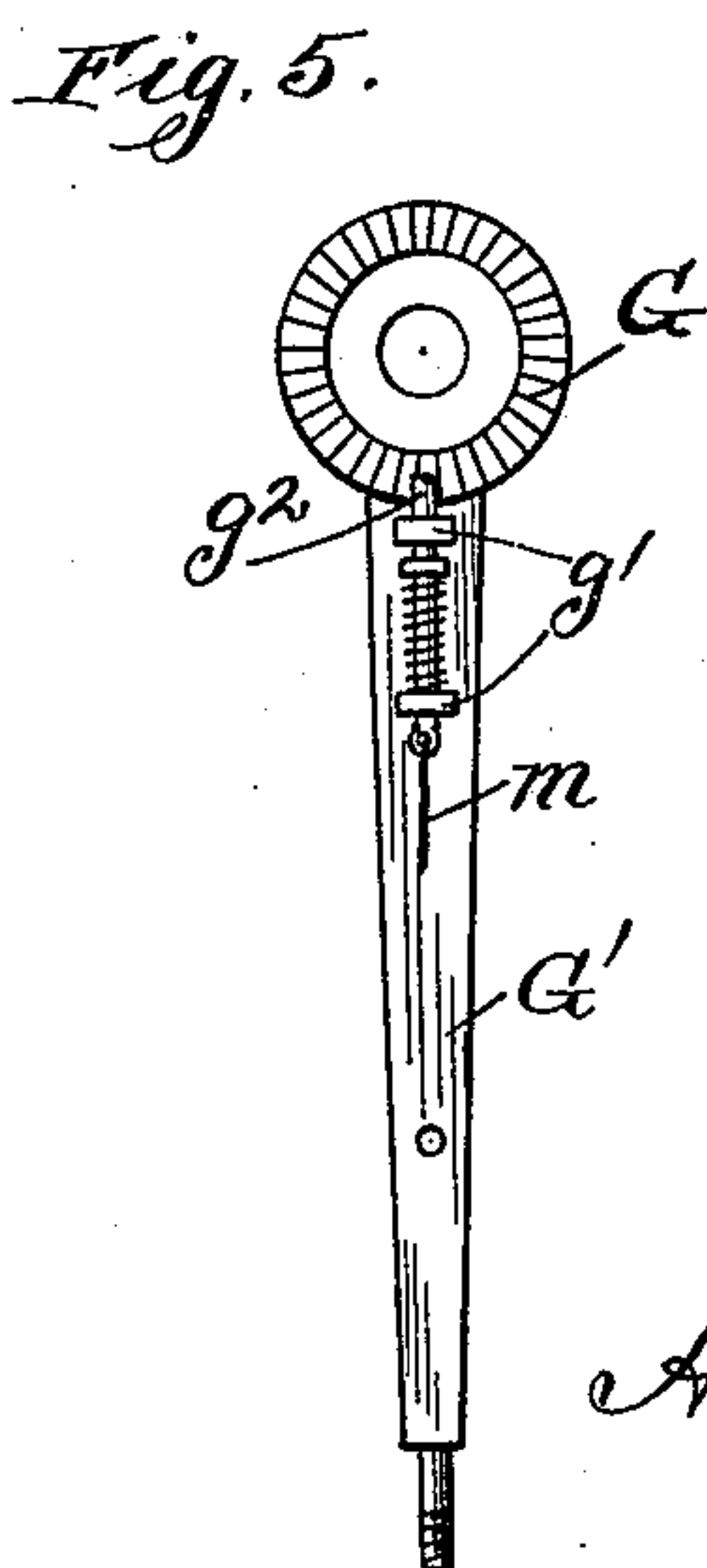
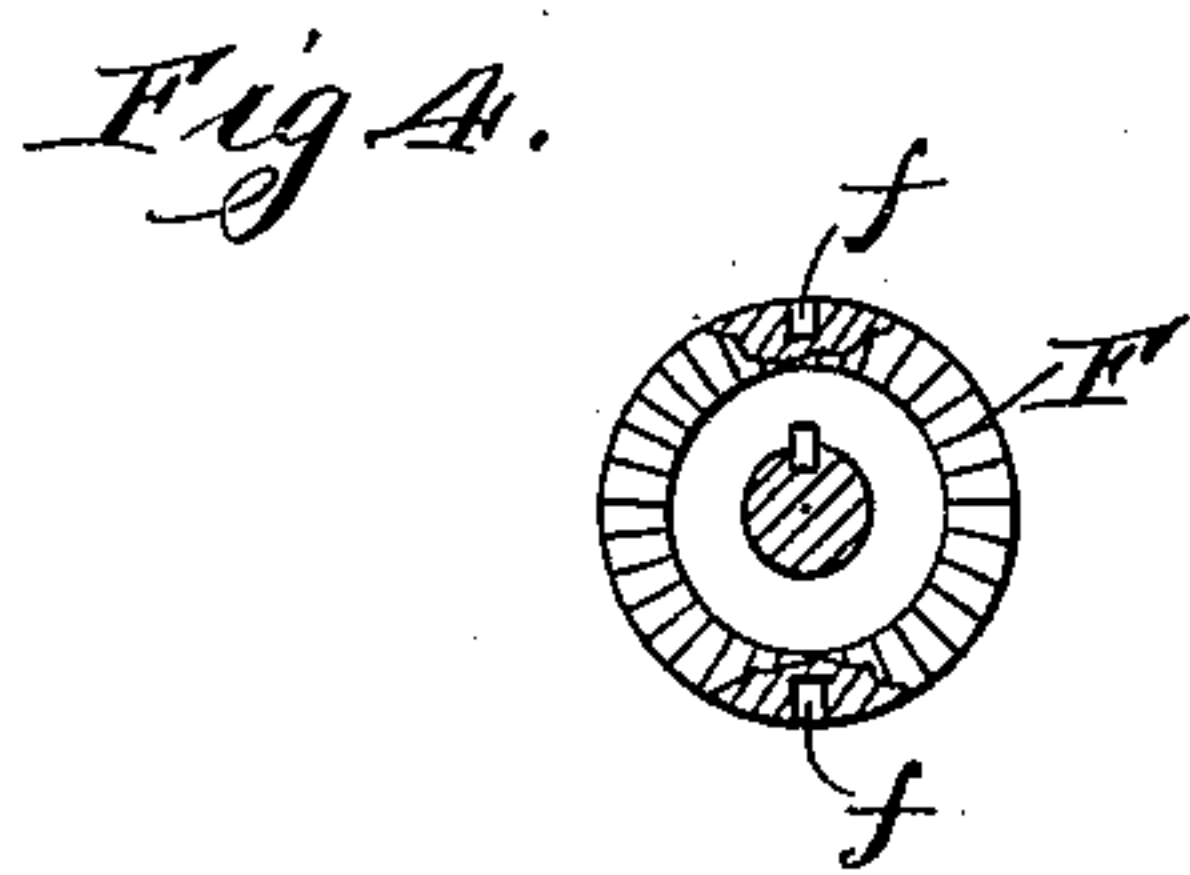
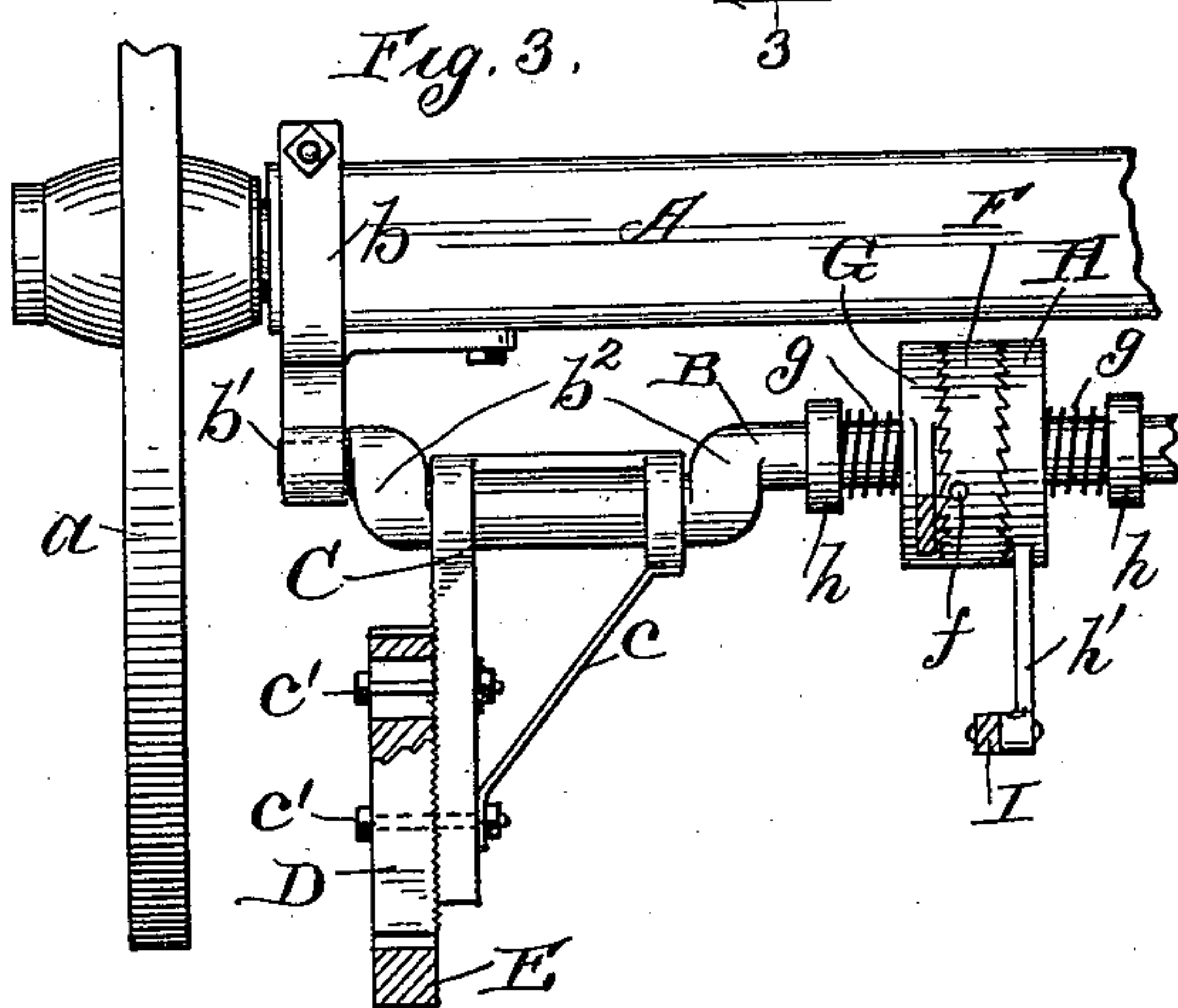
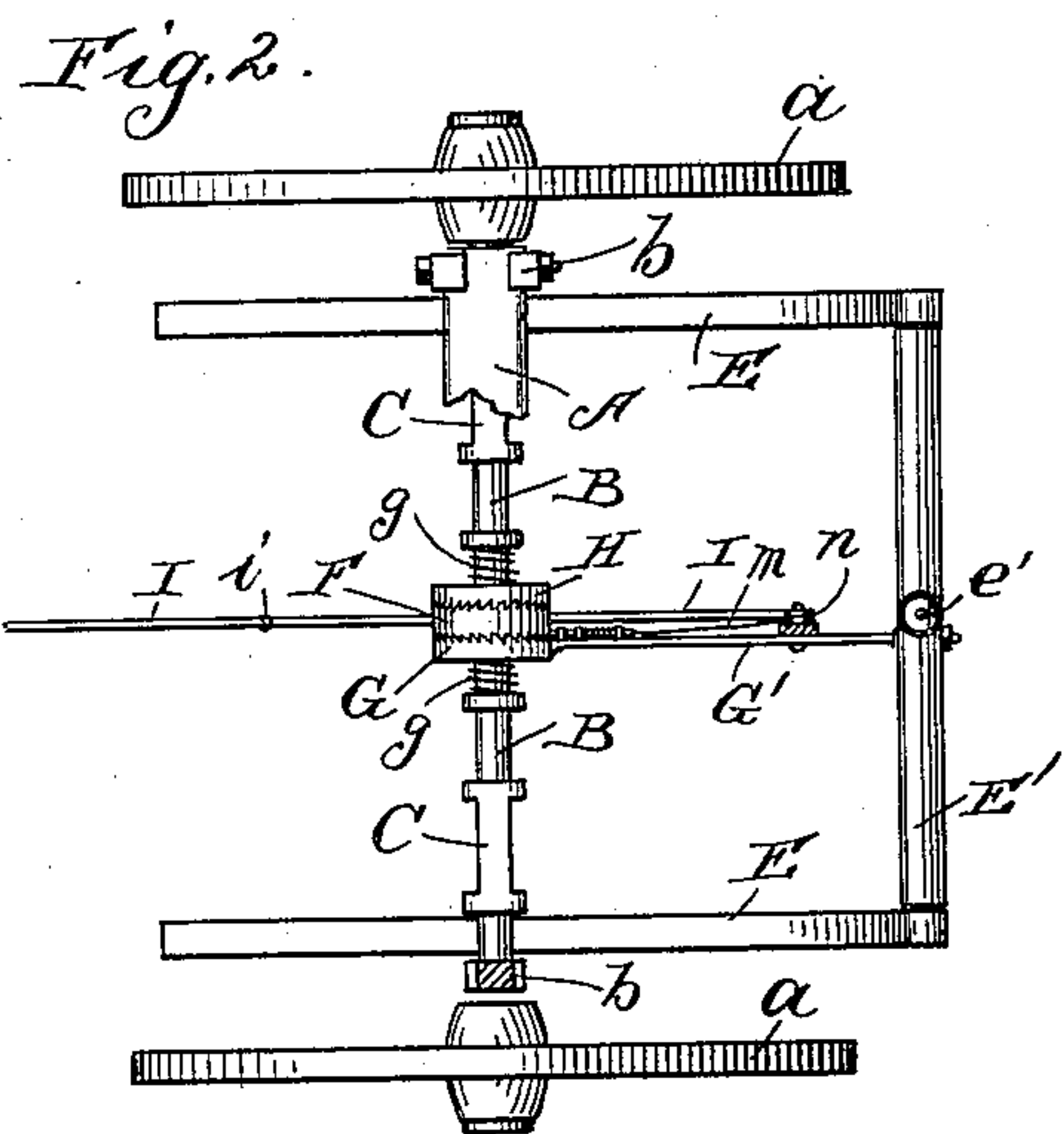
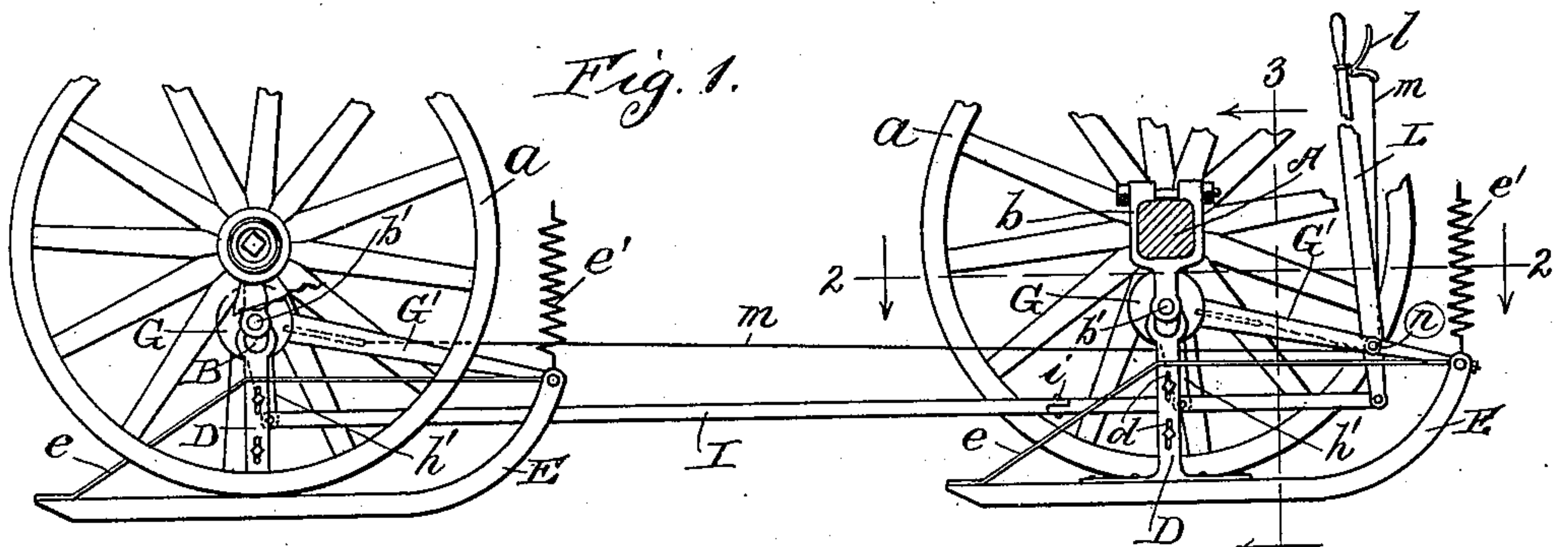


(No Model.)

A. A. JOHNSON.
CONVERTIBLE VEHICLE.

No. 598,936.

Patented Feb. 15, 1898.



Witnesses:

W. J. Jaeger,

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Inventor:

Axel A. Johnson

By Chas. C. Titman, Atty.

UNITED STATES PATENT OFFICE.

AXEL A. JOHNSON, OF CHICAGO, ILLINOIS.

CONVERTIBLE VEHICLE.

SPECIFICATION forming part of Letters Patent No. 598,936, dated February 15, 1898.

Application filed May 24, 1897. Serial No. 637,905. (No model.)

To all whom it may concern:

Be it known that I, AXEL A. JOHNSON, a subject of the King of Sweden and Norway, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Convertible Vehicles, of which the following is a specification.

This invention relates to a means to be attached to a wagon or other wheeled vehicle to enable the vehicle to be used as a wagon or a sleigh; and it consists in certain peculiarities of the construction, novel arrangement, and operation of the various parts thereof, as will be hereinafter more fully set forth and specifically claimed.

The objects of my invention are, first, to provide a mechanism which may be readily attached to or removed from the axles of the vehicle and can, when desired, be conveniently and quickly raised or lowered from the wagon, and, second, such a device which when lowered will raise the wheels of the vehicle from the ground and furnish runners upon which the vehicle may slide over the snow or ground, and when raised will occupy such a position as not to interfere with the progress or operation of the wheels of the vehicle which will then rest on the ground.

In order to enable others skilled in the art to which my invention pertains to make and use the same, I will now proceed to describe it, referring to the accompanying drawings, in which—

Figure 1 is a view in side elevation, partly in section, of the front and rear portions of a wagon, showing my attachment applied thereto and the parts in such positions as they will occupy when the wagon shall have been converted into a sleigh. Fig. 2 is a plan view, partly in section, of a pair of wagon-wheels, showing the sleigh attachment secured to the axle thereof. Fig. 3 is an enlarged view, partly in section, of a portion of one of the axles and one of the wheels of the wagon, taken on line 3 3 of Fig. 1, illustrating the manner of securing the runners thereto and of raising or lowering the same. Figs. 4, 5, and 6 are detail views of ratchet-wheels employed for raising or lifting the runners and showing them detached.

Similar letters refer to like parts throughout the different views of the drawings.

A represents the axles of the wagon or other vehicle, which are provided at their ends with wheels *a* of the ordinary or any preferred construction. Located on each end of the axles is a hanger *b*, which depends some distance below the axle and is provided with an opening or bearing *b'* for the crank-shaft B, the ends of which are journaled in the bearings *b'*, as is clearly shown in Fig. 3 of the drawings. The shafts B are provided near each of their ends with cranks *b²*, on which are loosely secured brackets C, which are provided with brace-rods *c* to strengthen the same and to afford greater rigidity.

To the lower portion of each of the brackets C is secured, by means of bolts *c'*, a standard D, whose lower end is suitably secured to the runner E, which may be of any desired shape and construction, but preferably of the form shown in Fig. 1 of the drawings. These runners are strengthened by means of rods *e*, which are secured at one of their ends to the upturned or front ends of the runners and at their other ends to the rear ends of the runners, and may be connected to the standards D, if desired. Each of the standards D is provided with vertical slots *d* to receive the bolts *c'* and to allow said standards to be adjusted on the brackets C when necessary.

The front or upturned ends of the runners E are united by means of a cross-bar E', to the middle of which is secured at one of its ends a spring *e'*, the other end of which may be secured to a portion of the wagon body or frame. These springs are employed to counterbalance the runners on the shafts B, on which they are pivotally secured.

Rigidly fixed on the middle of each of the shafts B is a ratchet-wheel F, which is provided, as shown in Figs. 3 and 4, with teeth on each of its surfaces and with small openings *f* diametrically opposite each other in its periphery and near one of its sides. Located on each side of the wheel F on each of the shafts B are the ratchet-wheels G and H, each of which is provided with teeth on its surface adjacent to the wheel F to engage the teeth on said wheel. The ratchet-wheels G and H are normally held in engagement with the

wheel F by means of springs g , coiled around the shafts B and held in position by means of collars or enlargements h on said shaft for this purpose. The ratchet-wheel G is provided with a bar or rod G' , whose front end is secured to the cross-bar E' of the runners. The bar G' is provided with lugs g' , through which pass a spring-actuated bolt g^2 , adapted to engage the openings f in the ratchet-wheel F, which, as before stated, is keyed to or fixedly secured on the crank-shaft B. The ratchet-wheels H are provided with arms h' , which are pivotally secured at their lower ends to the connecting rod or bar I, which extends from the front to the rear of the vehicle, and which bar or rod is pivotally secured at its front end to the lower end of the operating-lever L, which is fulcrumed on the bar G' and may extend into or above the wagon-body, so as to be in convenient reach of the driver. The upper portion of the lever L is provided with a bell-crank lever l , to the lower portion of which is secured one end of a wire or cord m , which is united to the spring-bolts g^2 on the bars G' of the ratchet-wheels G and which enables said bolts to be withdrawn from the openings f in the fixed ratchet-wheel. The connecting-rod I is formed with a joint i , so that it may be disconnected or will bend at said point, so as not to interfere with the turning of the wagon.

The operation of my device is simple and as follows: When the wagon shall have been converted into a sleigh, as shown in Fig. 1 of the drawings, the cranks on the shafts B, carrying the runners, will be in their lowered position and will be firmly held in such position by reason of the spring-actuated bolts g^2 , which engage one of the openings f in each of the ratchet-wheels F. When it is desired to raise the runners from the ground and allow the wheels of the wagon to operate thereon, the bell-crank lever l on the operating-lever L is

moved so as to draw the wire or cord m , which passes around a suitable pulley n , about the fulcrum-point of the operating-lever, which operation will release the spring-bolts g from the ratchet-wheel F, when by moving the operating-lever L back and forth the movable ratchet-wheels H will engage the fixed wheels F and rotate the shafts B, so as to raise their cranks and at the same time lift the runners from the ground. When raised to the desired position, the lever l may be released, which will permit the spring-bolt g^2 to again enter one of the openings f in the ratchet-wheels F and thus retain the mechanism in its uplifted position and permitting the wheels to rest on the ground.

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

The combination with the axle of a vehicle, of a crank-shaft rotatably secured parallel therewith, a pair of sleigh-runners pivotally secured on the cranks of said shaft, the ratchet-wheel F, fixed on the shaft and having the openings f in its periphery, the spring-actuated ratchet-wheel G, located on one side of the wheel F, and having the arm or bar G' , fixed at its front end and provided with the spring-actuated bolt g^2 , to engage the openings f , in the ratchet-wheel F, the movable ratchet-wheel H, on the other side of the ratchet-wheel F, and having the arm h' , the operating-lever L, suitably fulcrumed and connected to the arm h' , of the ratchet-wheel H, a bell-crank lever l , fulcrumed on the operating-lever, and the cord or wire m , connecting one end of the bell-crank lever and the spring-bolt g^2 , substantially as described.

AXEL A. JOHANSSON.

Witnesses:

CHAS. C. TILLMAN,
E. A. DUGGAN.