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PATENTED JAN. 23, 1906.

A. F. BACKLIN & I. EKLUND.

DRIVING MECHANISM FOR COILER SPINDLES OF WIRE FENCE MACHINES.

APPLICATION FILED AUG. 21, 1905.

3 SHEETS—SHEET 1.

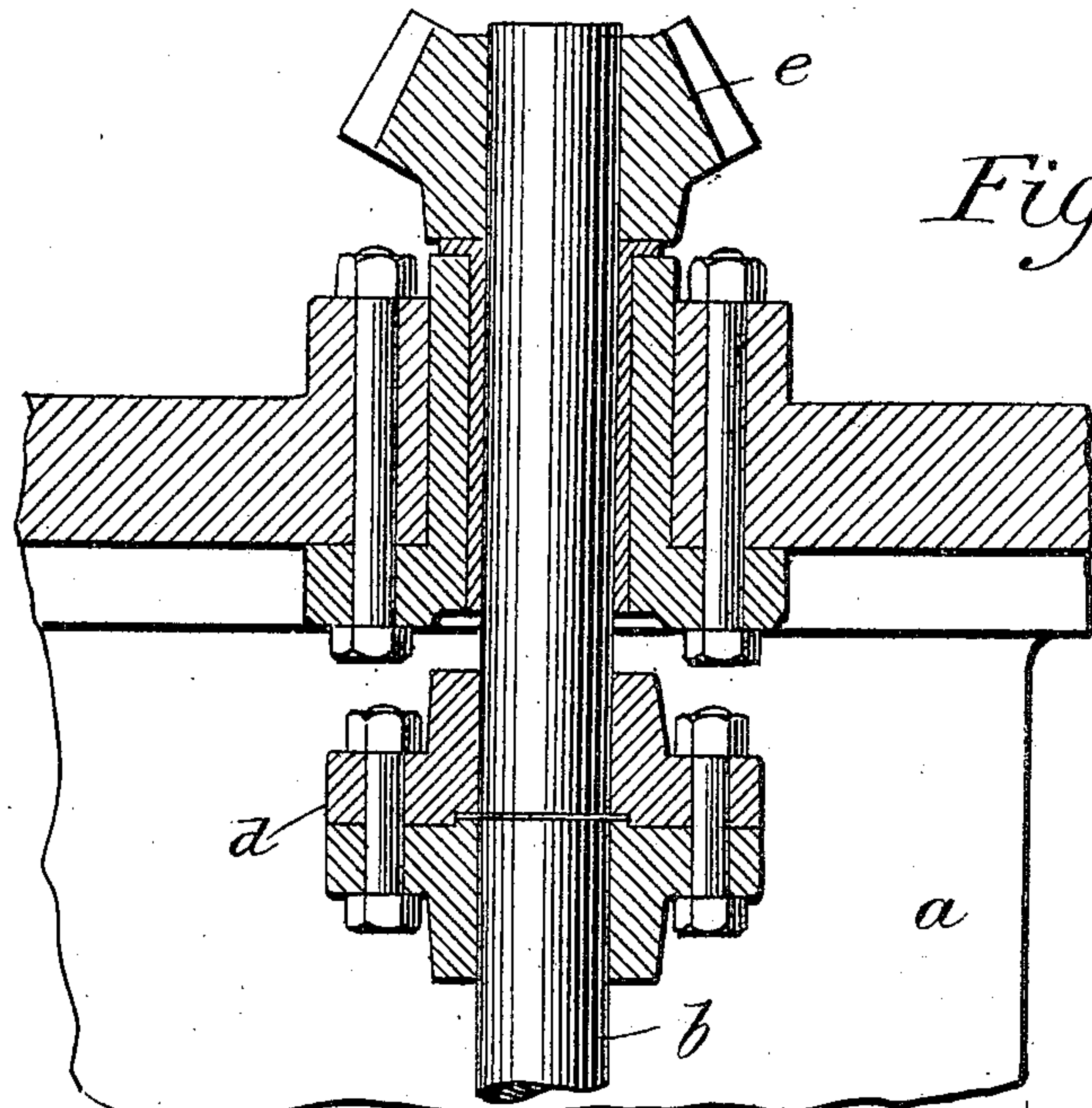
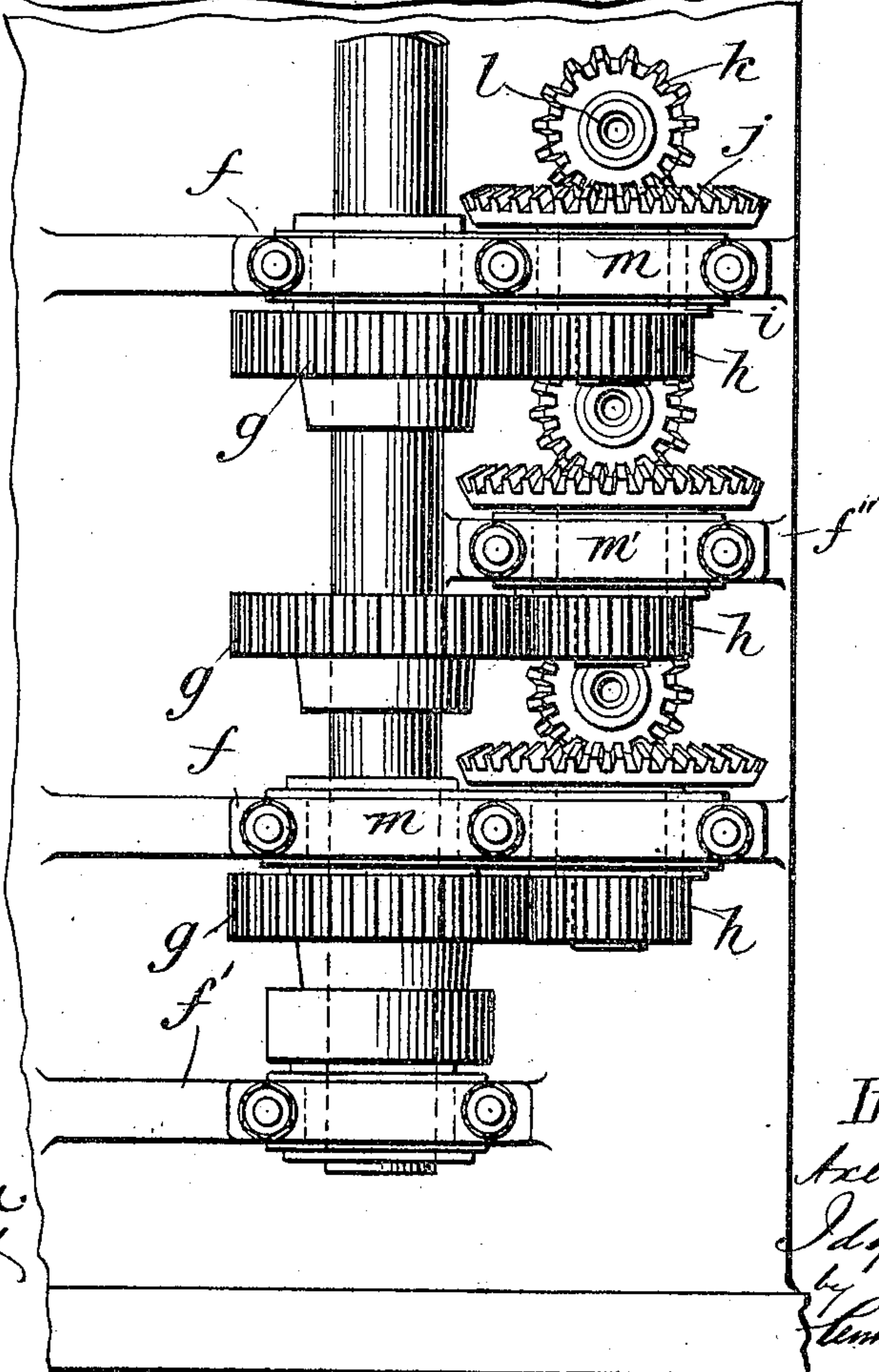


Fig. 1.



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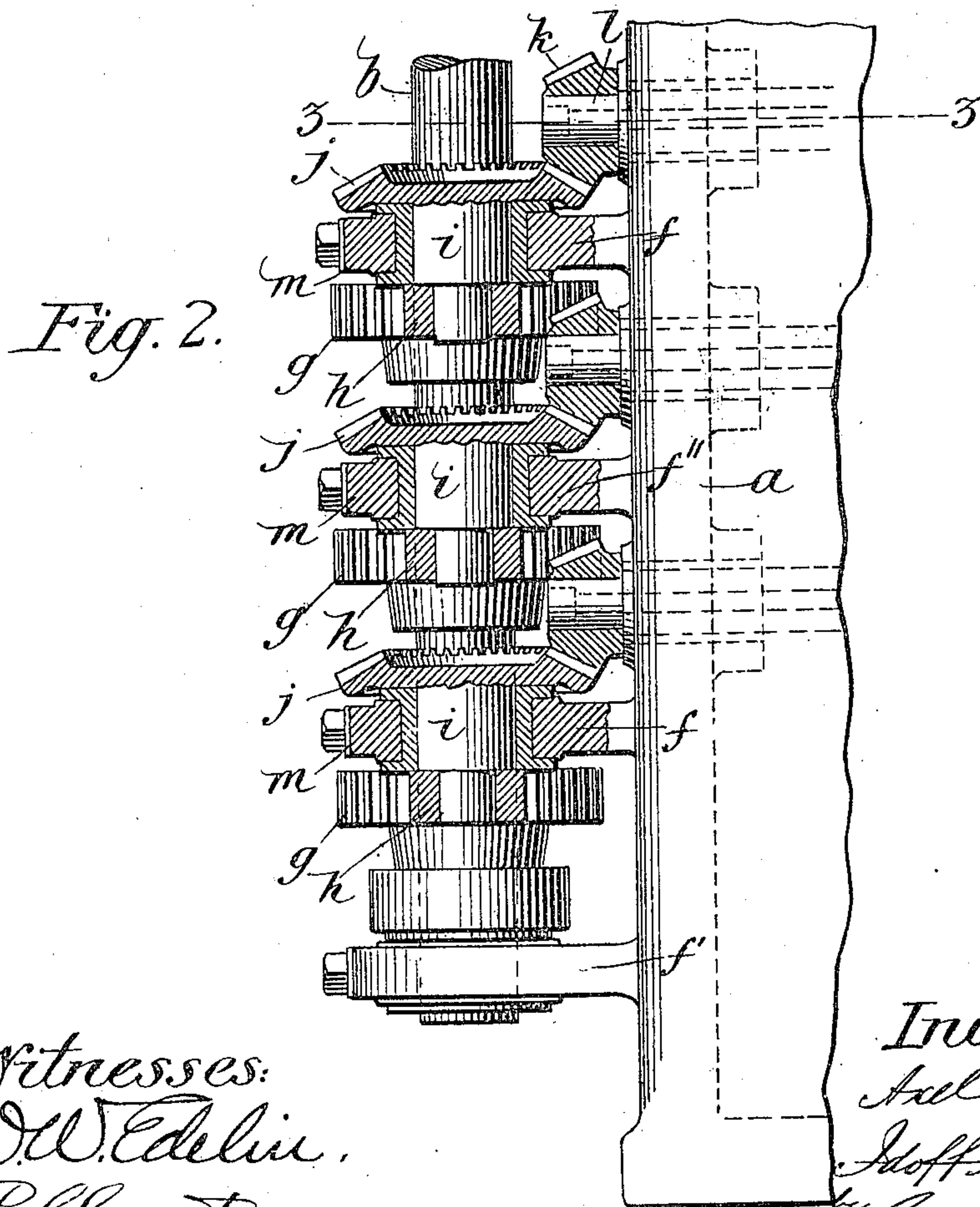
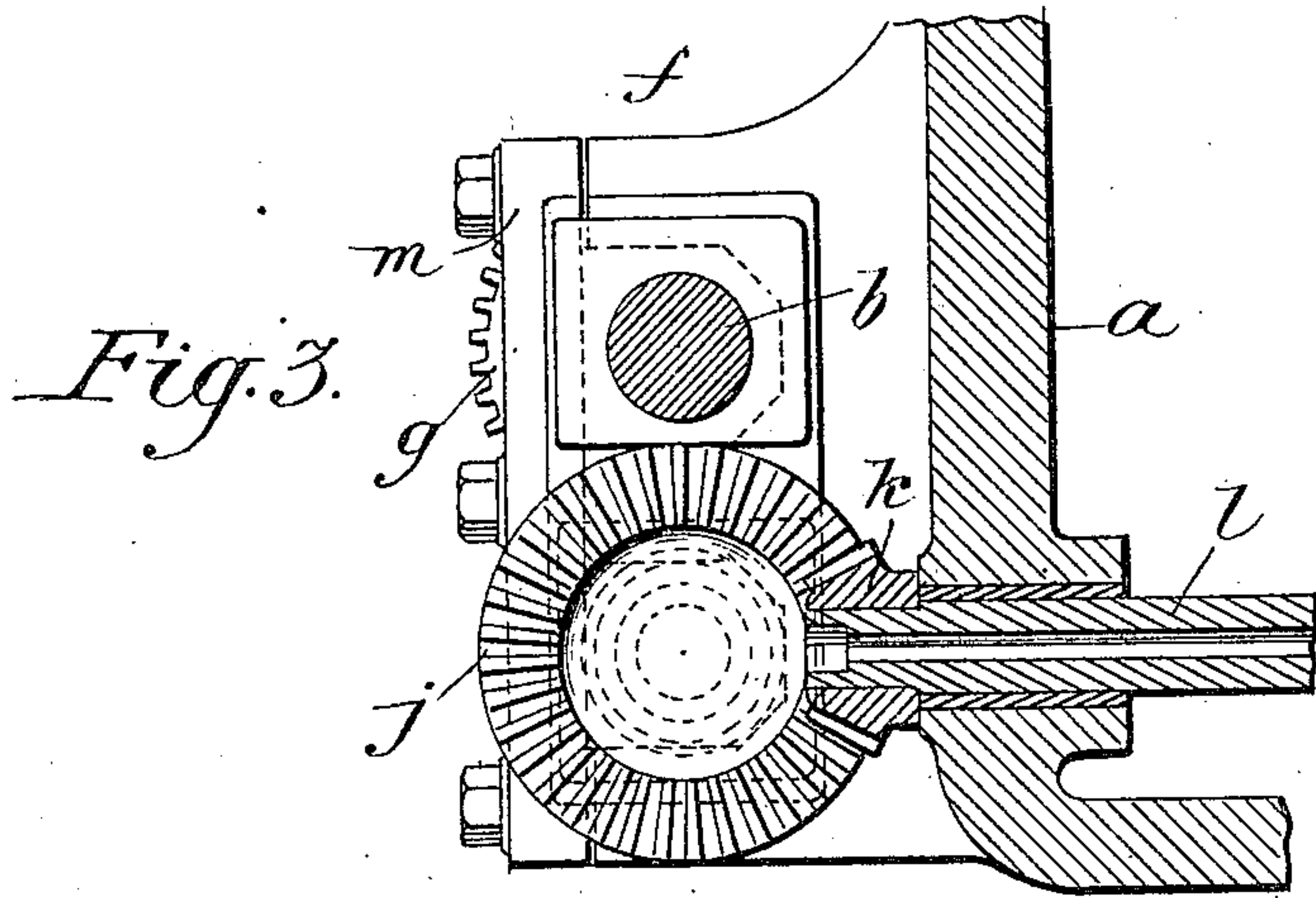
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3 SHEETS—SHEET 2.



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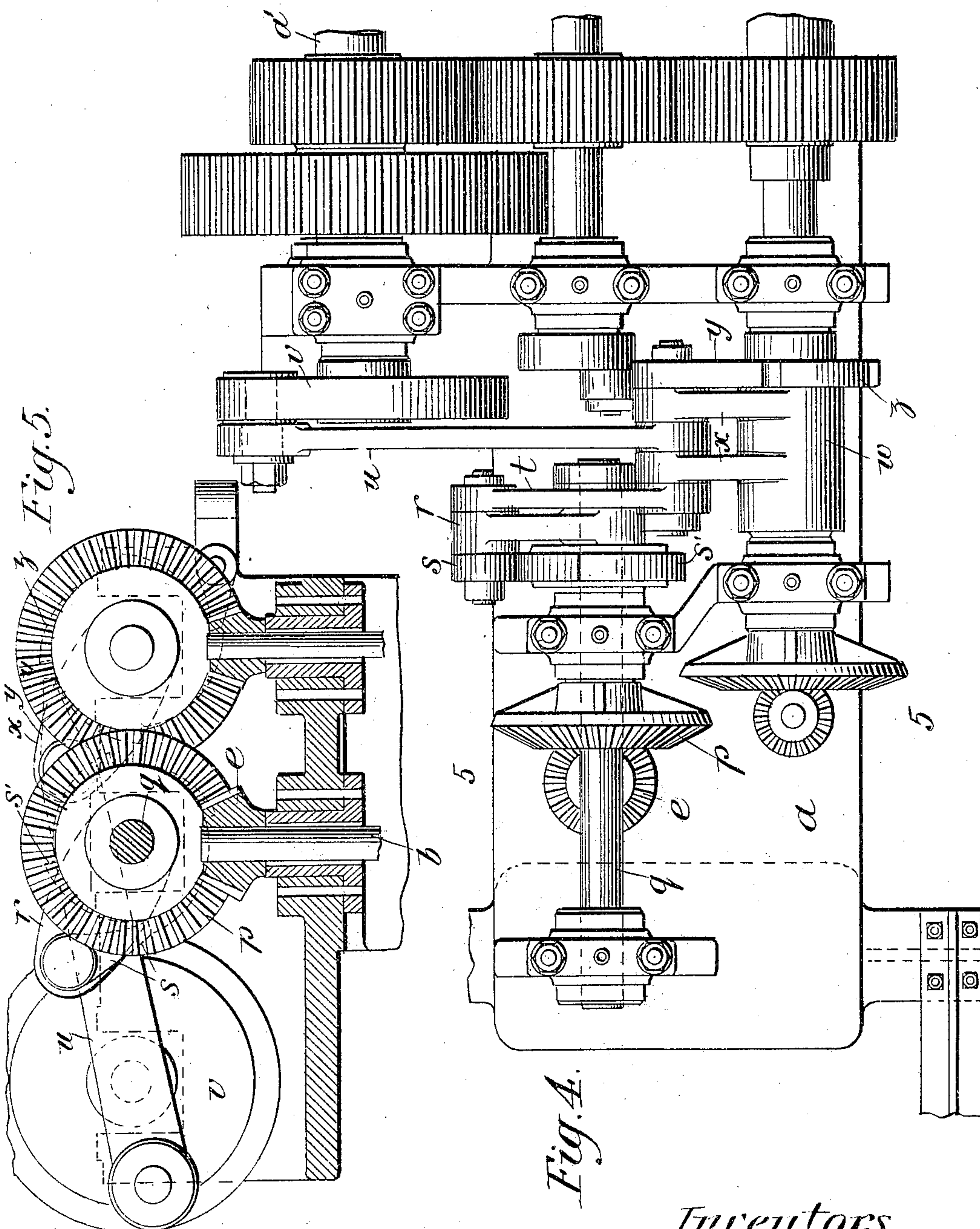
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UNITED STATES PATENT OFFICE.

AXEL F. BACKLIN AND IDOFF EKLUND, OF WORCESTER, MASSACHUSETTS, ASSIGNORS TO THE AMERICAN STEEL & WIRE COMPANY OF NEW JERSEY, OF WORCESTER, MASSACHUSETTS, A CORPORATION OF NEW JERSEY.

DRIVING MECHANISM FOR COILER-SPINDLES OF WIRE-FENCE MACHINES.

No. 810,696.

Specification of Letters Patent.

Patented Jan. 23, 1906.

Application filed August 21, 1905. Serial No. 275,007.

To all whom it may concern:

Be it known that we, AXEL F. BACKLIN and IDOFF EKLUND, citizens of the United States, residing at Worcester, county of Worcester, State of Massachusetts, have invented certain new and useful Improvements in Driving Mechanism for Coiler-Spindles of Wire-Fence Machines; and we 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.

The invention relates to driving mechanism for the coiler-spindles of wire-fence machines of the general type shown in the patents to A. J. Bates, No. 577,639, granted February 23, 1897, and No. 591,996, granted October 19, 1897, and has for its object to improve and simplify the means for rotating the coiler-spindles therein by connecting the latter with positively-driven gearing that is operated from a shaft rotated intermittently in one direction. In the machines as heretofore constructed motion is imparted to the driving-spindles by means of a reciprocating rack, which is caused to engage and disengage the coiling-spindles at proper intervals. This form of transmission has proven somewhat troublesome and unsatisfactory, as it is liable to excessive wear and breakage and also absorbs a considerable amount of power during the period of its operation when it is not actually doing the work of driving the spindles. By means of the present invention this old form of rack transmission is dispensed with, and the gears by means of which the spindles are rotated are constantly in mesh, have no reverse motion, and are driven only during the period of actual operation of the spindles.

In the accompanying drawings, Figure 1 is a fragmentary section through the front part of a wire-fence machine of the type hereinbefore referred to, showing the improved driving mechanism applied to the coiler-spindles. Fig. 2 is a side elevation of a section of the machine, showing portions of the spindle-drive in section. Fig. 3 is a horizontal plan view on the line 3 3 of Fig. 2. Fig. 4 is a plan view of the spindle end of the machine, showing the mechanism for intermittently actuating the main shaft of the driving mechanism

for the coiler-spindles. Fig. 5 is a section on line 5 5 of Fig. 4.

In all of the figures of the drawings only sufficient of the mechanism of the wire-fence machine is shown to properly illustrate the invention and indicate its relative arrangement and coöperation with the coiler-spindles.

Referring to the drawings, *a* indicates the machine-frame, in which is mounted the vertical shaft *b*, which is divided into two portions united by a suitable coupling *d*, the upper member projecting through the top plate of the machine and being provided with a bevel-pinion *e* for imparting intermittent rotatory motion to said shaft by means of a crank-and-ratchet mechanism, to be more particularly described hereinafter, so that while the main shaft of the machine is driven constantly in one direction an intermittent rotatory motion is imparted to the coiler-spindle-driving shaft *b*. Said shaft finds its lower bearing in a suitable bracket *f'* on the machine-frame and passes through a series of double brackets *f*, also connected to the machine-frame, which double brackets are provided with readily-removable cap-plates *m*. Between the double brackets aforesaid there are mounted upon the machine-frame single brackets, one of which, *f''*, is shown in Figs. 1 and 2. Mounted in suitable journal-boxes in the brackets *f* and *f''*, so as to lie parallel with the shaft *b*, are a series of stub-shafts *i*, corresponding in number to the coiler-spindles *l*. The lower ends of these shafts are provided with pinions *h*, which mesh with spur-gears *g*, secured to the shaft *b*, and upon the upper end of each of the stub-shafts *i* there is secured a bevel-gear *j*, which meshes with a bevel-pinion *k* on the end of the corresponding coiler-spindle. The stub-shafts *i* are so located as to leave a free passage-way below the ends of the same to permit the strand-wires to pass freely through the hollow coiler-spindles *l*, as will be evident from an inspection of Figs. 1 and 2.

Mounted on the top plates of the machine-frame *a* is a short shaft *q*, having thereon a bevel-gear *p*, meshing with and serving to drive pinion *e* and shaft *b*. Fixed to said shaft *q* is a ratchet-wheel *s'*, which is opera-

tively engaged by a pawl *s*, said pawl being pivoted on the end of an arm *r*, loosely journaled on shaft *q* adjacent to the ratchet-wheel *s'*, said arm *r* being in turn connected, through an arm *x* on a sleeve *w*, loosely mounted on a shaft parallel with said shaft *q*, to a crank-disk *v* on a counter-shaft *a'*, which is driven directly from the main shaft of the machine.

10 The operation of the driving mechanism will be readily understood from the foregoing description to be as follows: As intermittent rotatory motion is imparted to shaft *b* by means of gear *h* and the crank-and-ratchet
15 motion connected to the main driving-shaft of the machine, gears *g*, meshing with pinions *h*, will rotate stub-shafts *i*, which through the meshing double gear *j* and pinion *k* rotate the respective coiler-spindles *l* to twist the stay-
20 wires and strand-wires together in forming the fence fabric. As soon as the rotation of shaft *b* is interrupted, which operation takes place at the proper time by the action of the crank and ratchet, the rotation of the coiler-
25 spindles is of course suspended, and the transmission system remains idle until the next partial rotation of the shaft *b*. By this means it will be seen that the coiler-spindles are positively driven through just the proper
30 number of rotations by gearing that is constantly in mesh and that during the idle period of the coiler-spindles no motion whatever is imparted to the transmission system

or any part thereof, so that the excessive wear and breakage due to engaging and disengaging the driving mechanism and the loss of power occasioned by the retractile movement of the rack in the old form of transmission is entirely obviated.

Having thus described our invention, what we claim, and desire to secure by Letters Patent, is—

Coiler-spindle-driving mechanism for wire-fence machines, comprising a vertical driving-shaft receiving an intermittent rotatory motion from the main shaft of the machine, a series of coiler-spindles, a series of spur-gears on said driving-shaft corresponding in number to the coiler-spindles, stub-shafts mounted upon the machine-frame adjacent to the
5 respective coiler-spindles, a pinion and a bevel-gear on the respective ends of the stub-shafts, and a bevel-pinion on each of the coiler-spindles, the bevel-pinion on the
10 respective coiler-spindles meshing with the corresponding bevel-gear on the stub-shafts, and the pinion on the respective stub-shafts meshing with the corresponding spur-gear on the driving-shaft.

In testimony whereof we affix our signatures in presence of two witnesses.

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IDOFF EKLUND.

Witnesses:

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CHAS. M. BOOTH.