

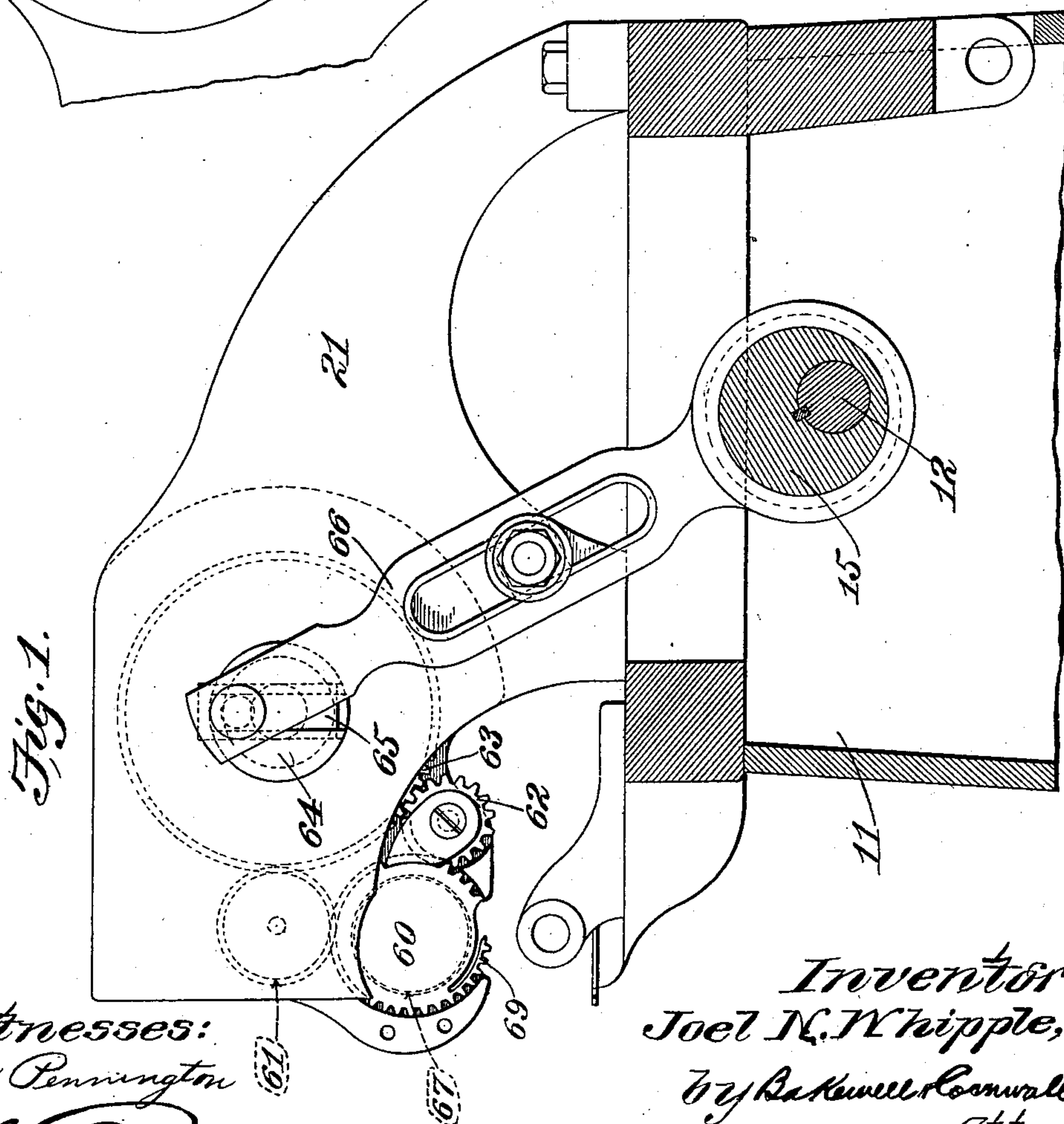
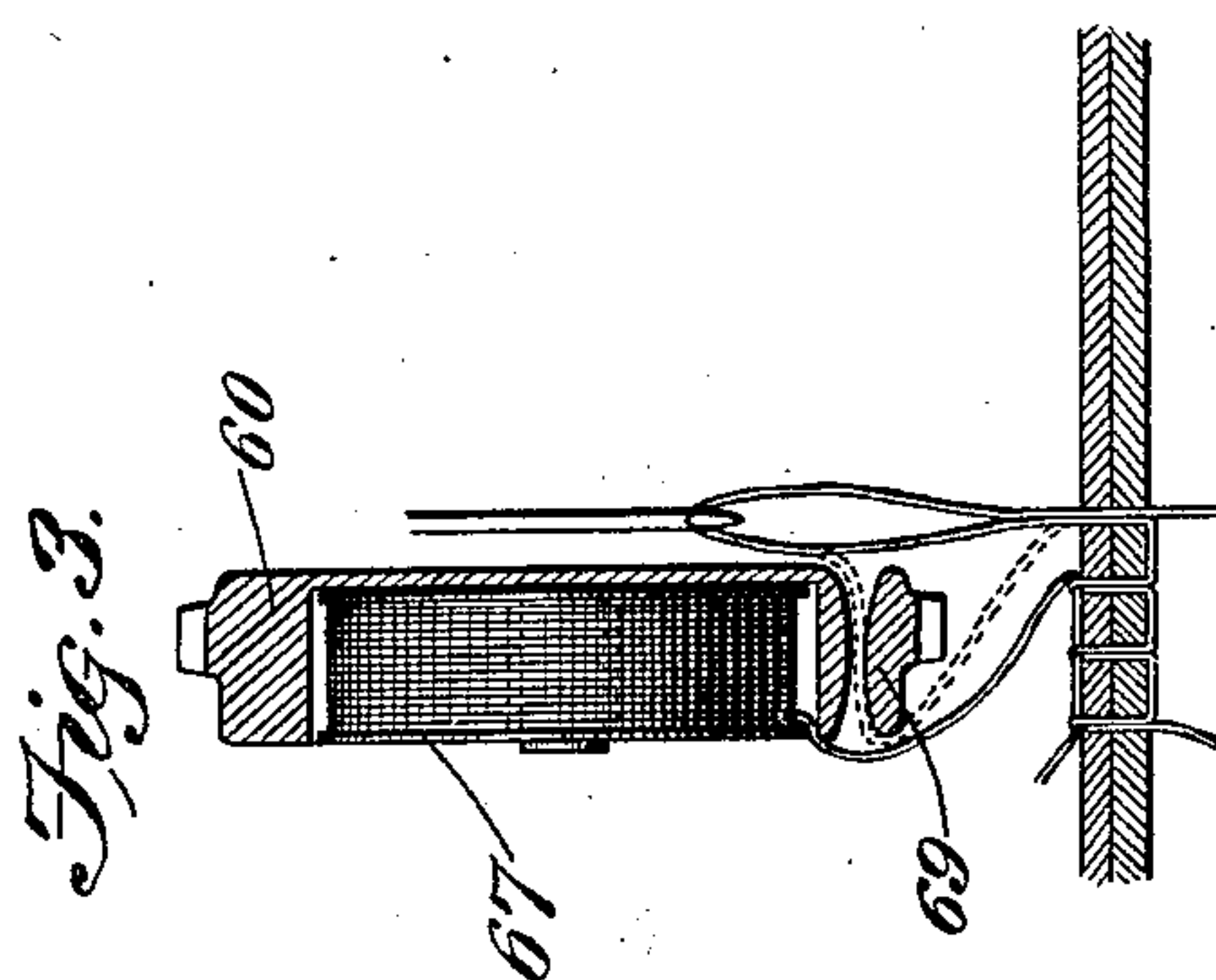
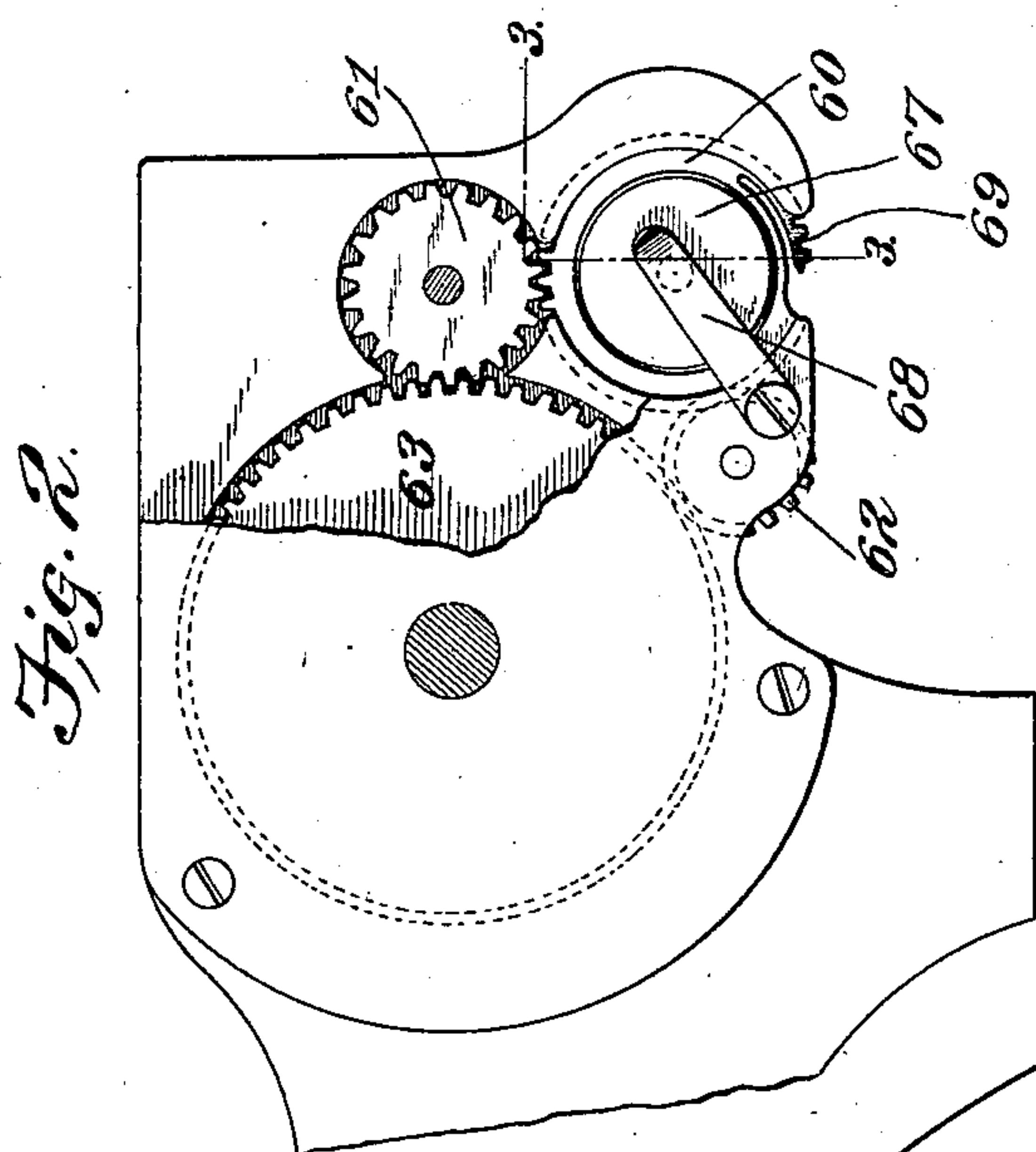
No. 730,848.

PATENTED JUNE 9, 1903.

J. N. WHIPPLE.
SHUTTLE ACTUATING MECHANISM.

APPLICATION FILED FEB. 18, 1902.

NO MODEL.



Witnesses:
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UNITED STATES PATENT OFFICE.

JOEL N. WHIPPLE, OF ST. LOUIS, MISSOURI, ASSIGNOR TO LANDIS MACHINE COMPANY, OF ST. LOUIS, MISSOURI, A CORPORATION OF MISSOURI.

SHUTTLE-ACTUATING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 730,848, dated June 9, 1903.

Original application filed October 31, 1901, Serial No. 80,625. Divided and this application filed February 18, 1902. Serial No. 94,598. (No model.)

To all whom it may concern:

Be it known that I, JOEL N. WHIPPLE, a citizen of the United States, residing at the city of St. Louis, State of Missouri, have invented a certain new and useful Improvement in Shuttle-Actuating Mechanisms, of which the following is a full, clear, and exact description, 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, forming part of this specification, in which—

Figure 1 is a side elevation of a portion of a sewing-machine provided with my present invention, certain of the parts being broken away to more clearly illustrate the shuttle. Fig. 2 is an elevation of the opposite side of the machine, the plate which in practice covers the master-gear and pinions being broken away; and Fig. 3 is a transverse sectional elevation of the shuttle on the line 3 3 of Fig. 2, said view showing a bobbin in the shuttle and also illustrating the needle of the sewing-machine and a portion of the work.

My invention relates to improvements in shuttle-actuating mechanisms, and more particularly to such actuating mechanism adapted to be used in connection with sewing-machines of the type forming the subject-matter of my application for patent filed October 31, 1901, Serial No. 80,625, of which said application the present application is a division. It will, however, be apparent that the present actuating mechanism can be employed upon sewing-machines of other types and also that the same can be employed upon thread-carrying machines other than sewing-machines.

My objects are to provide a shuttle-actuating mechanism of simple and efficient construction, the shuttle being given continuous rotation, notwithstanding the fact that its periphery is broken, and the said shuttle being rotated at differential speeds.

To these ends and also to improve generally upon devices of the character indicated my invention consists in the various matters hereinafter described and claimed.

Referring now more particularly to the drawings, 11 represents a box-housing suitably supported upon the frame of the ma-

chine, (or itself forming such frame,) and 21 represents a head-frame suitably supported and rising above said housing. A shaft 12, journaled in the end walls of said housing, derives power from any suitable source and is provided with a cam 15.

The shuttle 60 is of the rotary type and is mounted in the front end of the head-framing 21. Said shuttle has a recess therein adapted to receive the bobbin or spool 67 and is provided with a slot which opens upon its periphery, whereby there is produced a hook 69 for engaging the loop of the needle-thread, as indicated in dotted lines in Fig. 3, and causing the same to loop about the shuttle-thread in a well-understood manner. The periphery of the shuttle is provided with gear-teeth; but manifestly there is a break in the continuity of said teeth caused by the mouth of the slot by means of which the said hook is produced. Said gear-teeth mesh with driving-pinions 61 and 62, so arranged as to engage with the shuttle at different points and to drive the shuttle, notwithstanding that one of said pinions may in the revolution of the shuttle (owing to the before-mentioned break) not be in mesh with the teeth thereof. These pinions 61 and 62 mesh with a driving or master gear 63, arranged on a shaft journaled in the head-framing, on the outer end of which shaft is a disk 64, provided with a transverse slot in its face, in which slot is mounted a sliding head 65. This head carries a pin, to which is connected the end of a pitman 66, the other end of said pitman having an eye in the form of an eccentric-strap, which engages the cam or eccentric 15 on the main shaft. This method of driving the shaft imparts to it a differential movement, which is advantageous in machines of the character described in my before-mentioned application.

One side of the shuttle is recessed to receive a spool 67, and upon this spool is arranged the shuttle-thread, said thread passing out in the space between the spool-flange and the wall of the shuttle. A spring 68 tends to hold the spool in position in the shuttle. Thus the shuttle is of simple construction and directly engages the driving mechanism in a manner which insures the rotation of the

shuttle. Furthermore, this rotation is continuous, notwithstanding the fact that the slot producing the hook opens upon the periphery provided with the gear-teeth, and by a simple
5 connection with the power-shaft, which rotates at a uniform speed, the shuttle is given differential movement.

I am aware that many minor changes in the construction, arrangement, and combination of the several parts of my device can be
10 made and substituted for those herein shown and described without in the least departing from the nature and principle of my invention.

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

The combination with a supporting-plate, of a shuttle having a broken periphery and
20 rotatable at the side of said plate, a master-gear rotatably supported at the side of said

plate and in substantially the plane including said shuttle, a plurality of driving-pinions directly engaging both said master-gear and the periphery of said shuttle, said driving-pinions
25 being rotatably supported at the side of said plate and in substantially the said plane including the said master-gear and said shuttle, a cover-plate for said gear and pinions, a lever having sliding connection with the shaft
30 of said master-gear, and means for oscillating said lever and for causing the same to move longitudinally upon its pivot; substantially as described.

In testimony whereof I hereunto affix my
signature, in the presence of two witnesses,
this 13th day of February, 1902.

JOEL N. WHIPPLE.

Witnesses:

GALES P. MOORE,
GEORGE BAKEWELL.