

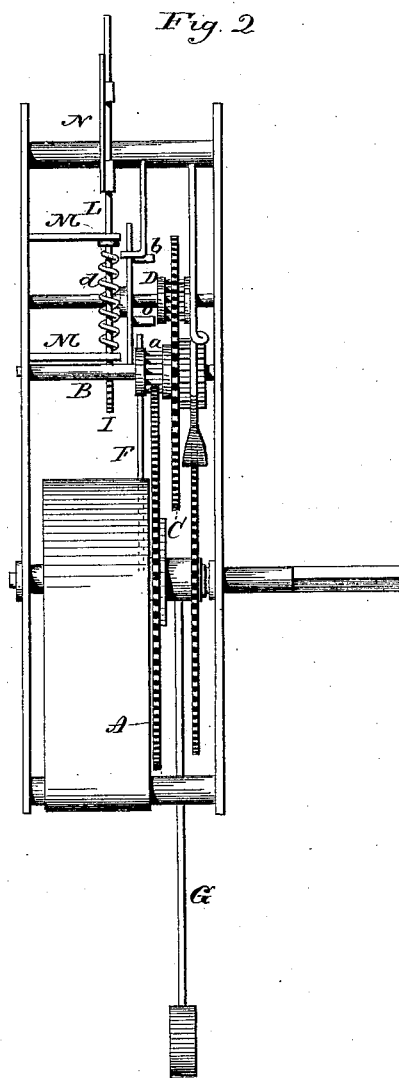
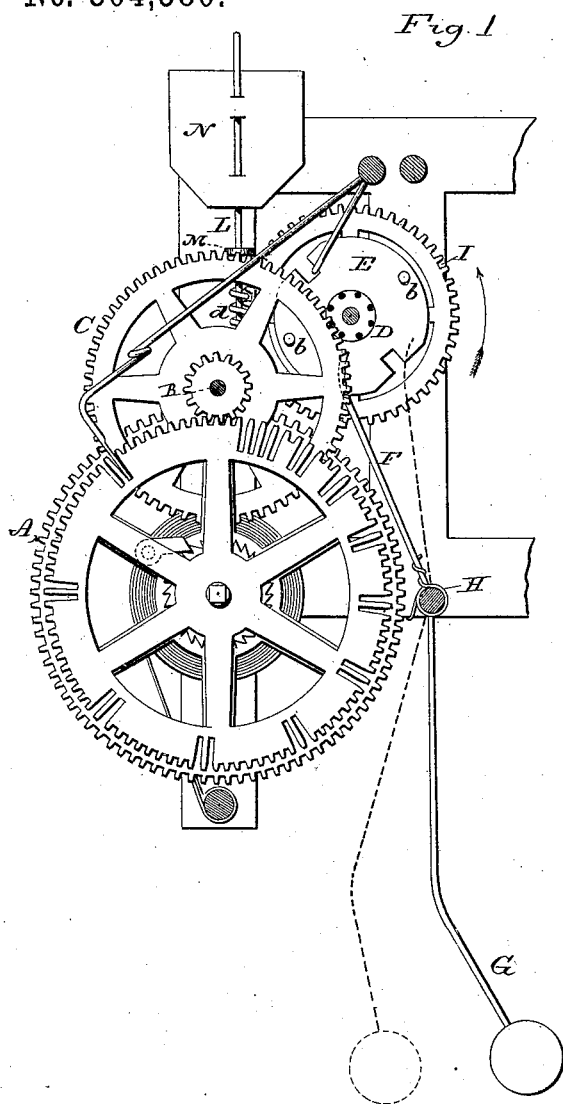
(No Model.)

S. M. TERRY.

CLOCK STRIKING MECHANISM.

No. 304,580.

Patented Sept. 2, 1884.



Witnesses.
J. H. Sumner
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UNITED STATES PATENT OFFICE.

SOLON M. TERRY, OF PITTSFIELD, MASSACHUSETTS, ASSIGNOR TO THE
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CLOCK STRIKING MECHANISM.

SPECIFICATION forming part of Letters Patent No. 304,580, dated September 2, 1884.

Application filed April 28, 1884. (No model.)

To all whom it may concern:

Be it known that I, SOLON M. TERRY, of
Pittsfield, in the county of Berkshire and
State of Massachusetts, have invented a new
Improvement in Clock-Movements; and I do
hereby declare the following, when taken in
connection with accompanying drawings and
the letters of reference marked thereon, to be
a full, clear, and exact description of the same,
and which said drawings constitute part of
this specification, and represent, in—

Figure 1, a front view of the train of gear-
ing composing the strike-movement of a clock,
showing the hammer, the front plate of the
frame being removed; Fig. 2, a side view of the
same, looking from the left.

This invention relates to an improvement
in clock-movements, with special reference to
the striking part, and to such as are adapted
to the bell commonly known as "cathedral
bell"—that is to say, a heavy wire bell in
which slow strokes are necessary. In the
usual construction of the striking part of the
clock a continuous series of spur-gears and
pinions are arranged between the main wheel
and the flier. For the cathedral bell, in or-
der that the blows shall be sufficiently slow,
the movement of the hammer-lever is neces-
sarily retarded to a much greater extent than
in common bells. To do this additional gears
are introduced, usually one additional shaft
carrying wheel and pinions. The shaft of the
last wheel and pinion, as well as the shaft of the
flier and its pinion, necessarily revolve with
great rapidity, and if the gear be as in the
usual construction of spur-gears and pinions,
there is unavoidably an unpleasant rattling
noise accompanying the striking operation,
due to the rapid revolutions of the two last
shafts and the gears and pinions working to-
gether.

The object of my invention is to avoid this
unpleasant noise in this class of strike-mov-
ements; and it consists in arranging the flier on
a shaft at right angles to the shaft of the wheel
which drives it, the shaft provided with a
worm into which the spur-gear on the next
shaft back of it works, and whereby the rota-
tion of that spur will impart rapid rotation to
the flier while running at a much less velocity
than must the next wheel to the flier in the

usual construction, all as more fully herein-
after described.

A represents the main wheel, which works
into a pinion, *a*, on the shaft B. On this shaft
B is a gear, C, which works into a pinion, D,
on the hammer-wheel shaft. On this shaft the
hammer-wheel E is arranged in the usual man-
ner. The striking is produced by pins *b* on
this wheel, which, as the wheel revolves in the
direction indicated by the arrow, strike the
hammer-arm F and turn the hammer G back,
as seen in broken lines, until the pin passes
from the arm F to allow the hammer to es-
cape. Then the hammer gives its blow by the
reaction of the spring H on its shaft. On the
hammer-wheel shaft is a gear, I.

L is the flier-shaft, arranged vertically in
bearings M M, and so as to stand in the plane
of the gear I. On this shaft is a worm, *d*, cor-
responding to the teeth of the gear I, and so
that as the wheel I revolves it will, through
the worm *d*, impart rotation to the shaft L.
On this shaft is the flier N. Each tooth of
the gear I imparts a full rotation to the flier-
shaft L. The worm offers much greater re-
sistance to the revolution of the gear I than
would a pinion into which the same wheel
might work. This greater resistance, there-
fore, very greatly reduces the revolution of the
gear I from what it would be were the gear I
working into a pinion in the usual manner.
The flier N offers a resistance to the rotation
of the shaft L in the usual manner; but, ow-
ing to the resistance produced by the worm *d*,
the flier may be of small area, and so as to
readily stand between the plates of the case.
This flier still further retards the rotation of
the hammer-wheel, and to the extent neces-
sary or desirable in a cathedral strike. To pro-
duce the same resistance to or retarding of the
hammer-wheel by the employment of parallel
shafts, spur-gears, and pinions, as in the usual
construction, an additional shaft carrying gear
and pinion would be necessary between the
hammer-wheel and the then parallel flier-
shaft carrying its pinion, and in that case the
flier would necessarily revolve much more
rapidly than does the flier in my improved
construction. The slower revolution of the
flier-shaft in this construction, and the em-
ployment of the worm as the means of com-

communicating revolution thereto, avoids entirely the rattling noise accompanying this class of strike in the usual construction, and not only is this objection overcome, but the cost of construction is greatly reduced, as at least 5 one shaft, with its gear and pinion, is dispensed with. In some cases the gear I is the hammer-wheel, the pins *b* being arranged therein. It will be understood by "hammer-wheel" 10 that I refer to the pin or pins by which the hammer is caused to draw back from the bell.

While I prefer to arrange the flier-shaft vertically, as shown, it may be arranged at 15 any convenient position, but at substantially

right angles to the shaft of the hammer-wheel.

I claim—

In a strike-movement for clocks, the combination of the hammer-wheel, the main wheel A, and intermediate gearing, whereby rotation is imparted to the shaft of said hammer-wheel, the hammer G, the gear I on the hammer-wheel shaft, the shaft L at right angles to the shaft of the hammer-wheel, and carrying a worm, into which the gear I works, and also 25 carrying the flier N, substantially as described.

SOLON M. TERRY.

Witnesses:

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