

(No Model.)

J. D. MAWHOOD.

ROLLER MILL.

No. 373,241.

Patented Nov. 15, 1887.

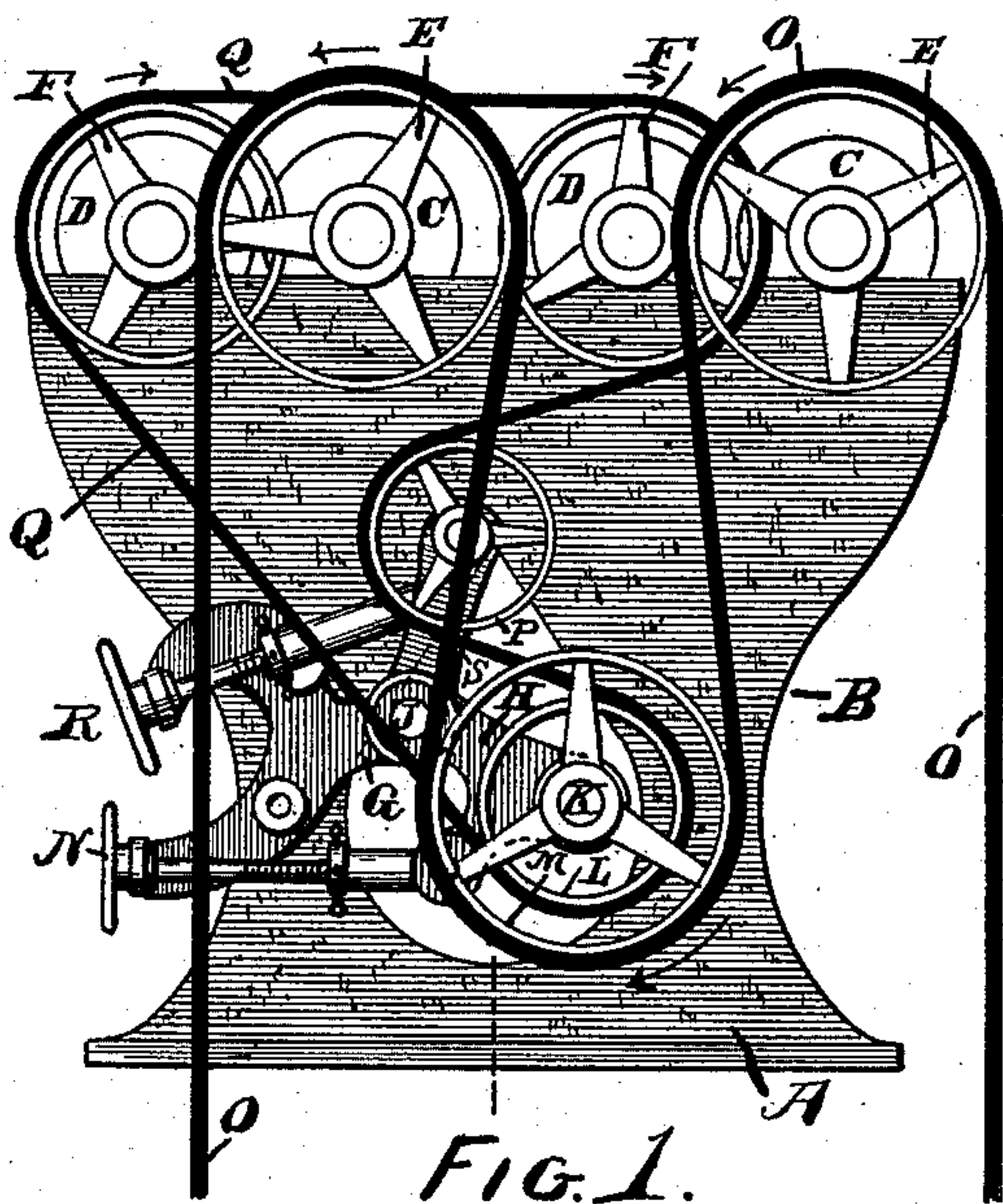


FIG. 1.

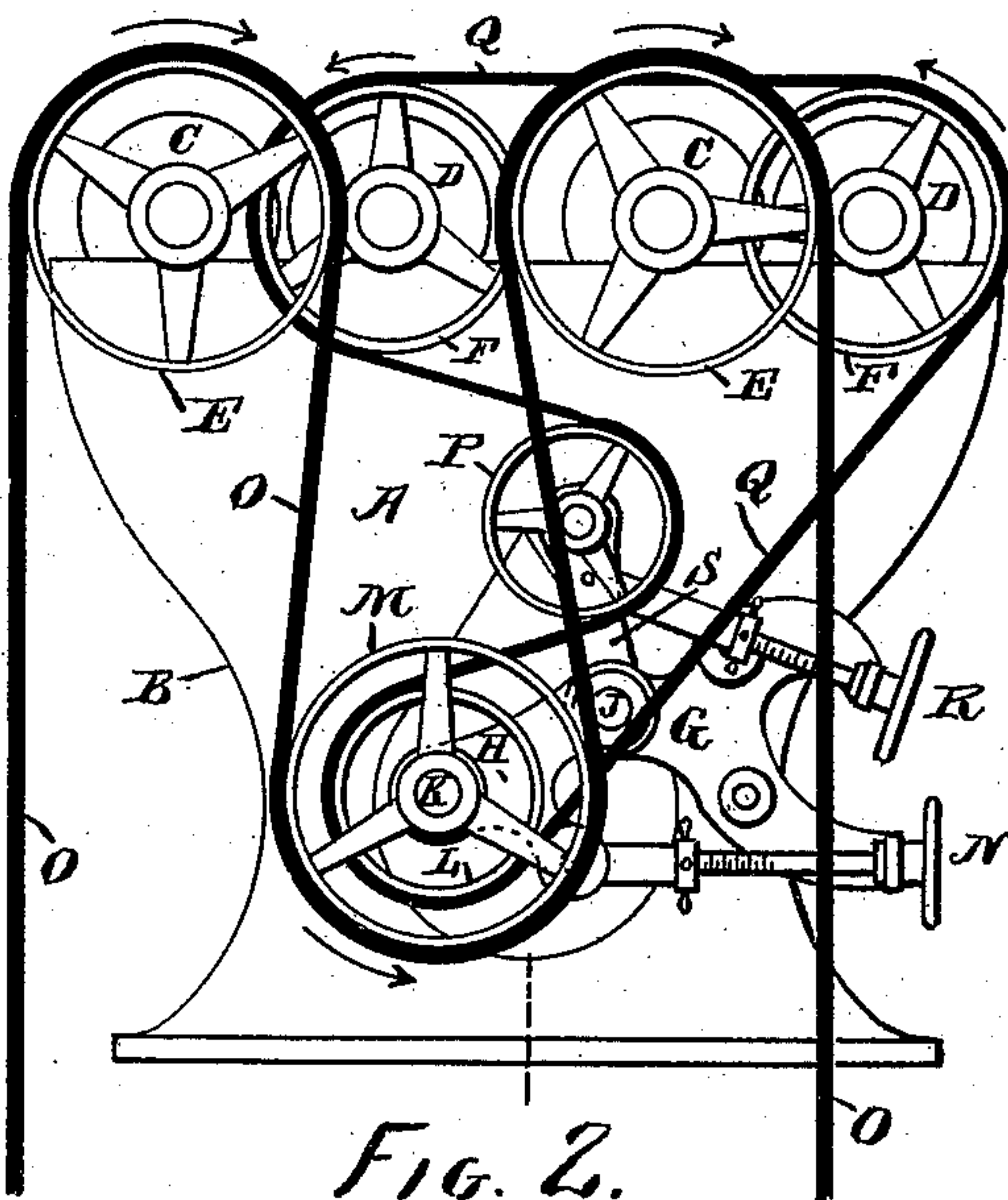


FIG. 2.

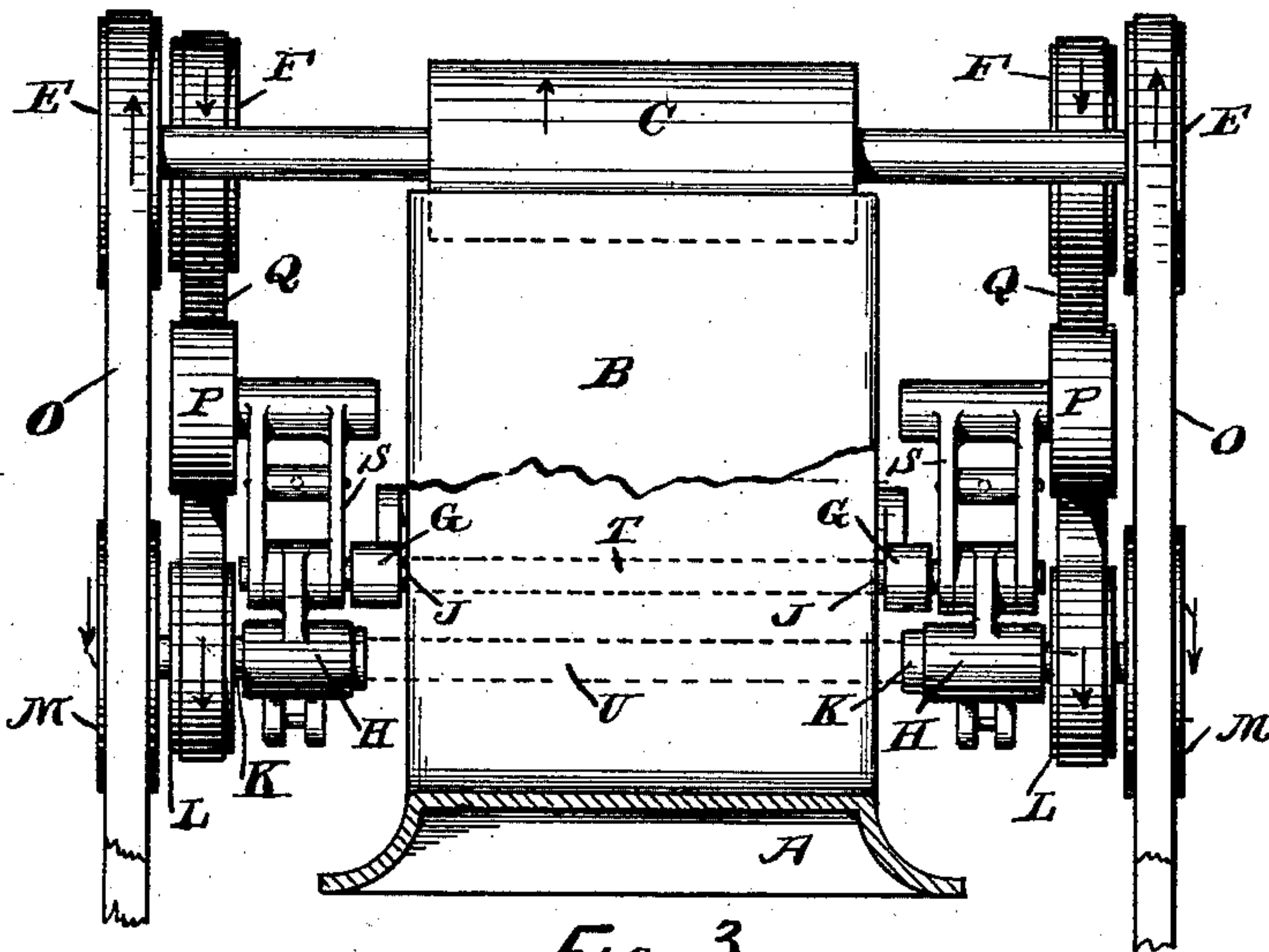


FIG. 3.

WITNESSES:

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JONATHAN D. MAWHOOD, OF RICHMOND, INDIANA, ASSIGNOR TO THE
RICHMOND CITY MILL WORKS, OF SAME PLACE.

ROLLER-MILL.

SPECIFICATION forming part of Letters Patent No 373,241, dated November 15, 1887.

Application filed April 4, 1887. Serial No. 233,573. (No model.)

To all whom it may concern:

Be it known that I, JONATHAN D. MAW-
HOOD, of Richmond, Wayne county, Indiana,
have invented certain new and useful Improve-
5 ments in Roller-Mills, of which the following
is a specification.

This invention pertains to double roller-
mills—that is, roller mills employing two pairs
of rolls, the two rolls of each pair revolving
10 toward each other at different peripheral rates
of speed.

My improvements have reference to the
mechanism for giving motion to the rolls. In
the following specification I may often desig-
15 nate the slow-running rolls as the “slow rolls,”
and details of mechanism peculiarly pertinent
to those rolls as “slow details,” and the fast
rolls and their peculiarly pertinent details
may be designated in an appropriate corre-
20 sponding manner.

My improvements will be readily understood
from the following description, taken in con-
nection with the accompanying drawings, in
which—

25 Figure 1 is an elevation of one side of the
main portions of a roller-mill embodying my
improvements; Fig. 2, an elevation of the op-
posite side of the mill, and Fig. 3 a rear eleva-
tion of the mill with a portion of the frame
30 broken away.

In the drawings, A indicates the usual frame
of a roller-mill; B, the rear face thereof; C, the
fast rolls; D, the slow rolls; E, pulleys fast on
both ends of the shafts of both fast rolls, the
35 two pulleys at each single side of the mill com-
ing in the same plane with each other, so as to
be engaged by one belt; F, pulleys fast on both
ends of the shafts of both slow rolls, the two
pulleys at each single side of the mill coming
40 in the same plane with each other, so as to be
engaged by one belt, the pulleys F and the
pulleys E upon each single side of the mill be-
ing arranged in separate planes, so as not to
interfere with each other, as clearly seen in
45 Fig. 3; G, pivot-supports supported by the
mill-frame at each side some distance below
the rolls; H, idle-shaft arms supported by these
pivot-supports and capable of oscillating or
being partially rotated with reference thereto;
50 J, the pivots supported by the pivot-supports,

and engaged by the idle shaft arms; K, idle-
shafts projecting out sidewise from the idle-
shaft arms; L, a pulley upon each idle-shaft,
said pulleys being in the same plane with the
pulleys F; M, pulleys upon the idle-shafts in 55
the same plane with pulleys E; N, adjusting-
screws to serve in effecting the angular adjust-
ment of the idle-shaft arms; O, two belts, herein
designated as the “fast belt,” one at each side of
the mill, each of these belts engaging the pul- 60
leys E and M upon its appropriate side of the
mill, these belts also to engage pulleys upon
a driving-shaft below the mill, (not shown in
the drawings;) P, two tightening-pulleys, one at
each side of the mill, these pulleys being in 65
the same plane with the pulleys F and L; Q,
two belts, herein designated the “slow belts,”
one at each side of the mill, each of these belts
engaging the pulleys F, L, and P upon its ap-
propriate side of the mill, as clearly shown in 70
in the drawings; R, adjusting - screws, one at
each side of the mill, to serve in effecting the
adjustment of the tightening-pulleys P, and S
pivoted arms serving as the adjustable rocking
supports for the tightening-pulleys. 75

The two pivots J may be independent of each
other at each side of the mill-frame, or, if de-
sired, they may be formed of a single pivot-
shaft extending clear across the mill-frame, as
indicated by dotted lines at T in Fig. 3. 80

The idle-shafts K may be independent short
shafts at each side of the mill, or they may be
formed of a single shaft extending across
through the mill-frame, as indicated by dotted
lines at U in Fig. 3. 85

The pulleys L and M may be made fast to
the idle-shafts and the shafts may be free to
revolve in their supports, or these pulleys may
be free to revolve on the shafts; but in either
case the two pulleys L and M at each single 90
side of the mill must be so connected with each
other that they will revolve together.

By inspecting Figs. 1 and 2 it will be seen
that the idle-shafts K in being adjusted by the
screws N rise and fall in a path substantially 95
parallel to the two leaves of the fast belts O,
which engage the pulleys M. It will there-
fore be obvious that the raising and lowering
of the idle-shafts will tend to loosen or tighten
the fast belts. It will also be seen that the path 100

through which the idle-shafts move is substantially at right angles to the two leaves of the slow belts Q, which engage the pulleys L. It will therefore be obvious that as the idle-shafts are raised and lowered the tension of the slow belts Q is not altered. It is thus seen that the raising and lowering of the idle-shafts may be utilized in altering the tension of the fast belts without interfering with or being interfered with by the slow belts. It is also obvious that the slow belts may have their tension altered by the proper adjustment of the tightening-pulleys B without interfering with or being interfered with by the fast belts. It should also be obvious that the strains exerted upon the belts will be identical at each side of the mill, thus causing a uniform working action at each end of the rolls.

I have filed another application bearing the Serial No. 233,571. Whatever is claimed in said application is hereby disclaimed, so far as the present application is concerned.

I claim as my invention—

1. A roller-mill comprising a frame, two pairs of rolls, each having a fast roll and a slow roll, a pulley upon the same end of each fast roll, a pulley upon the same end of each slow roll, an idle-shaft below the rolls, two pulleys on such idle-shaft in the same plane, respectively, with the pulleys on the slow and fast rolls, a tightening-pulley between said idle-shaft and the rolls and in the same plane with the pulleys on the slow rolls, a belt engaging the pulleys on the slow rolls, said tightening-pulley, and one of said pulleys on the

idle-shaft, and a belt engaging the other of said pulleys on the idle-shaft and the two pulleys on the fast rolls, and an adjustable support for the idle-shaft arranged to move said idle-shaft in a path substantially parallel with engaging portions of one of said belts, and substantially at right angles with the engaging portions of the other belt, combined and arranged for operation substantially as and for the purpose set forth.

2. A roller-mill comprising a frame, two fast rolls, a pulley at each end of said fast rolls, two slow rolls, a pulley at each end of said slow rolls, idle-shafts supporting two pulleys at each side of the mill in the same plane, respectively, with the pulleys on the fast and slow rolls, a tightening-pulley at each side of the mill in the same plane with the pulleys on the slow rolls, belts at each side of the mill engaging the slow roll pulleys, the tightening-pulleys, and the appropriate ones of the idle-shaft pulleys, belts at each side of the mill engaging the fast-roll pulleys and the appropriate ones of the idle-shaft pulleys, and means, substantially as described, for adjusting the idle-shafts in a path substantially parallel to the engaging portions of two of said belts, and substantially at right angles to the engaging portion of the other belts, combined and arranged for operation substantially as and for the purpose set forth.

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Witnesses:

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L. T. KEMON.