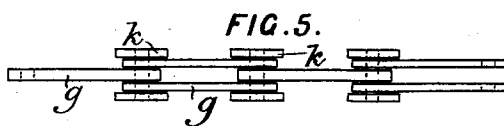
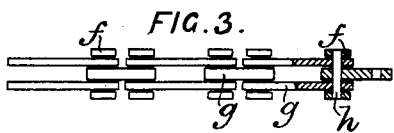
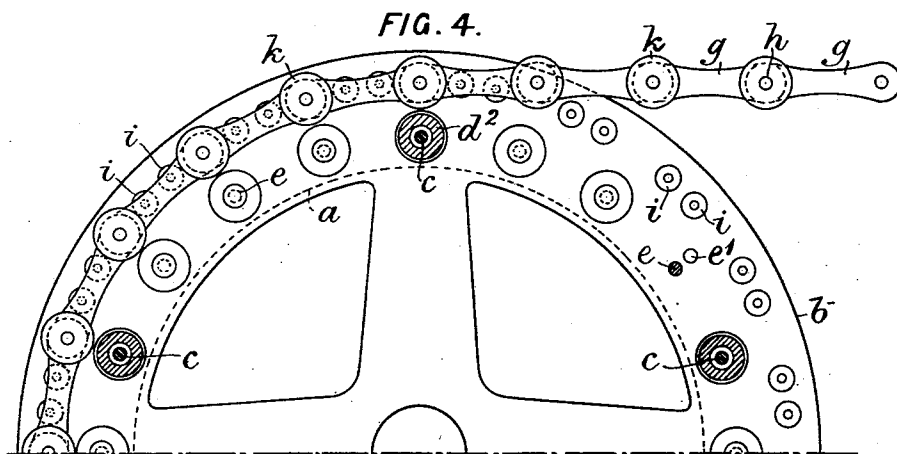
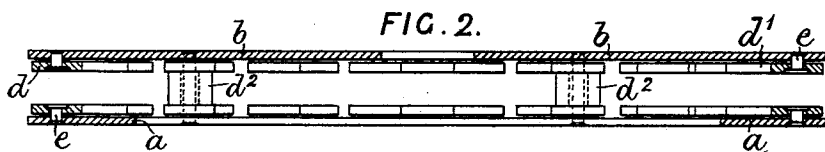
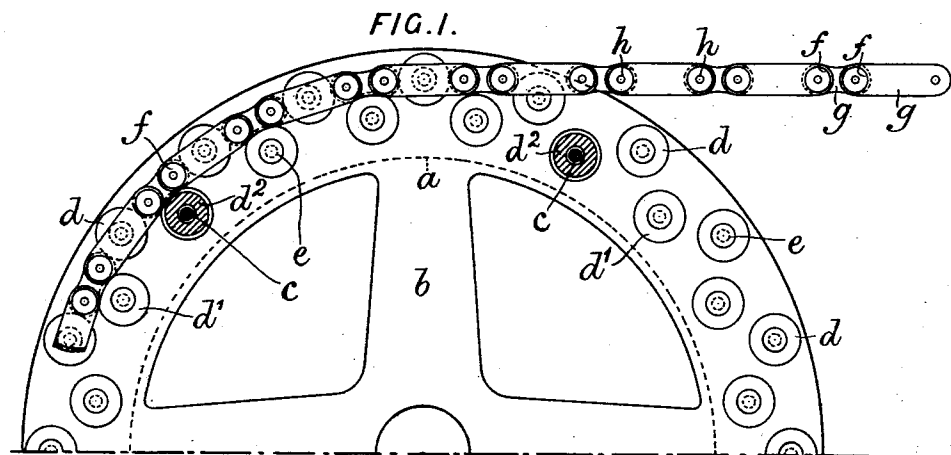


(No Model.)

T. HEWETT.
CHAIN GEARING.

No. 588,064.

Patented Aug. 10, 1897.



Witnesses

J. B. Keefe

Dennis Sumby

Inventor

Thomas Hewett

by James L. Norrie

Attorney

UNITED STATES PATENT OFFICE.

THOMAS HEWETT, OF LONDON, ENGLAND, ASSIGNOR OF ONE-HALF TO
THOMAS KERRISON BELLIS, OF SAME PLACE.

CHAIN-GEARING.

SPECIFICATION forming part of Letters Patent No. 588,064, dated August 10, 1897.

Application filed April 12, 1897. Serial No. 631,778. (No model.)

To all whom it may concern:

Be it known that I, THOMAS HEWETT, engineer, a subject of the Queen of Great Britain, residing at 6 Jeffrey's Square, in the city of London, England, have invented certain new and useful Improvements in Chain-Gearing, of which the following is a specification.

This invention has reference to an improved construction of chain-gearing, whereby considerable frictional contact of the parts is avoided and driving power is applied to better advantage.

In accordance with this invention the chain-wheel is provided with rolls carried by pins or rivets from the rim, so that when corresponding rolls on the chain come into contact with the rolls on the wheel they form a rolling bed or bearing, thereby reducing the amount of frictional contact between the engaging parts, as fully described in the following description, reference being had to the accompanying drawings.

In the drawings, Figure 1 is a view in side elevation of one-half a wheel, the ring *a* being shown by dotted lines and two of the sleeves *d*² and the studs or rivets *c* being shown in section. Fig. 2 is a sectional plan view of the wheel. Fig. 3 is a plan view, partly in section, of the chain shown in Fig. 1. Fig. 4 is a like view to Fig. 1 of an alternative form of my improved chain-gearing, and Fig. 5 is a plan view of a portion of the chain as shown in Fig. 4.

The wheel shown in Fig. 1 is made up of a ring *a* and disk *b*, connected together by rivets or studs *c* at intervals. Arranged on the inner or adjacent faces of the rims *a* and *b* are two sets of rolls respectively indicated by the letters *d* and *d'*. Said rolls are journaled on rivets *e*, fixed in said rims, as most clearly shown in Fig. 2, the rolls *d* being arranged in a circle near the periphery of the rims and the rolls *d'* being arranged in a smaller circle concentric with the first-named circle. There are two such sets of rolls *d* and *d'* journaled on each rim, the axes of the rolls on one rim corresponding with the axes of the rolls on the other rim. The pitch circle of the outer rolls *d* is coincident with the pitch

or center line of the chain as it passes around the wheel. The inner rods *d'* form a rolling path or bed for the rolls on the chain. Where the connecting-studs *c* are placed, each stud carries two rolls *d'*, with a sleeve *d*² between them to serve as a distance-piece.

In the chain shown in Figs. 1 and 3 the rolls *f* are in twin or double sets, and in use only the rearward rolls operate to pull or are operated to be pulled by the rolls of the wheel, the forward rolls (according to the direction in which the chain is traveling) serving as idle-rolls to prevent backlash and ease the engagement of the contacting parts, especially when such are being driven at a high rate of speed. I construct this chain by connecting one and then two links *g* alternately and passing rivets *h* through the three links, the same rivet serving to carry the rolls *f*. The pitch length is made up of a single and a double link.

In the alternative form of chain-gearing shown in Figs. 4 and 5 the twin or double sets of rolls are placed on the wheel instead of on the chain. *i i* are twin or double sets of rolls on the wheel engaging with rolls *k* on the chain, so that according to whatever direction the chain is traveling in the rearward rolls of each pair pull or are pulled by the rolls of the chain, and the forward rolls act as "idle-rolls" to prevent backlash and promote ease of engagement of the contacting parts.

In place of the outer and inner sets of rolls on the wheels being arranged alternately in single order, or in twin or small pairs for the outer set and in single order for the inner set, they may be arranged in twin sets or pairs for both sets or for either set—outer and inner sets or outer or inner sets.

Suitable means of adjustment are provided, so that slackness of the chain or wearing of the parts may be taken up by altering the positions of the rolls on the wheel, as by the provision of extra holes or supports for their axes; as shown at *e'*, where one of the rolls *d* is omitted the better to admit of these holes being seen.

Having now particularly described and as-

certained the nature of my said invention and in what manner the same is to be applied, I declare that what I claim is—

1. The combination with a wheel having two
5 parallel rims and two sets of rolls journaled
on the inner adjacent faces of said rims, one
set of said rolls being arranged in a circle
near the periphery of the rims and the other
set of rolls being arranged in a smaller circle
10 concentric with the first-named circle, and a
chain carrying antifriction-rolls arranged to
enter between the outermost rolls of the wheel
and having a rolling support on the inner-
most of said rolls, substantially as described.
- 15 2. The combination with a wheel having two
parallel rims *a* and *b* and two sets of rolls *d*
and *d'* journaled on rivets *e* fixed in said rims,
one set of said rolls *d* being arranged in a cir-
cle near the periphery of the rims and the
20 other set of rolls *d'* being arranged in a smaller
circle concentric with the first-named circle,
and a chain consisting of alternate double
and single links *g* pivoted together at their
ends and carrying twin sets of rolls *h* arranged

to enter between the rolls *d* and having a roll- 25
ing support on the rolls *d'*, substantially as
described.

3. The combination with a wheel having two
parallel rims and two sets of rolls journaled
on the inner adjacent faces of said rims, one 30
set of said rolls being arranged in a circle
near the periphery of the rims and the other
set of rolls being arranged in a smaller circle
concentric with the first-named circle, a chain
carrying antifriction-rolls arranged to enter 35
between the outermost rolls of the wheel and
having a rolling support on the innermost of
said rolls, and means for adjusting the rolls
on the wheel-rims to compensate for wear,
substantially as described. 40

In testimony whereof I have hereunto set
my hand in presence of two subscribing wit-
nesses.

THOMAS HEWETT.

Witnesses:

ALFRED GEORGE BROOKES,
ERNEST JOHN HILL.