

T. COVENTRY.
GEARING.

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987,049.

Patented Mar. 14, 1911.

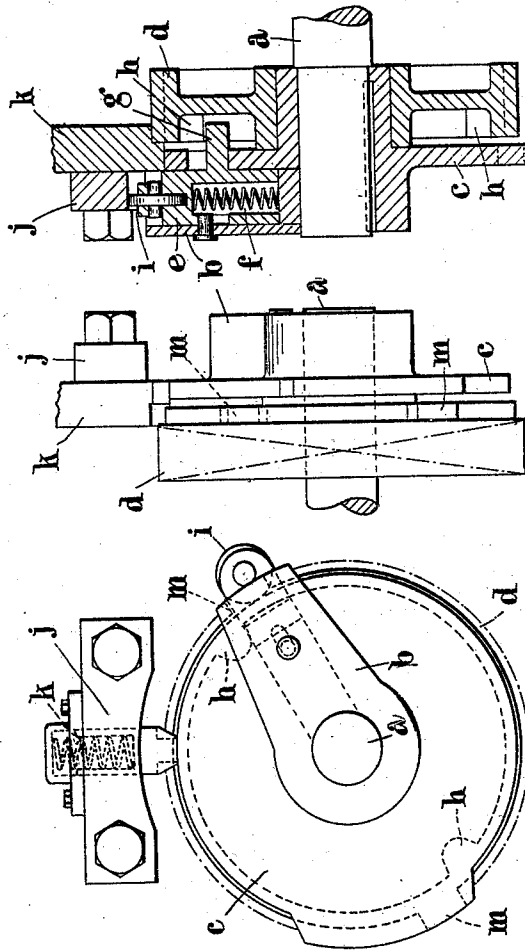


Fig. 3.

Fig. 2.

Fig. 1.

WITNESSES
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UNITED STATES PATENT OFFICE.

THEODORE COVENTRY, OF SALFORD, ENGLAND, ASSIGNOR TO SMITH & COVENTRY, LIMITED, OF SALFORD, ENGLAND.

GEARING.

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Specification of Letters Patent.

Patented Mar. 14, 1911.

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To all whom it may concern:

Be it known that I, THEODORE COVENTRY, a subject of the King of Great Britain and Ireland, residing at Gresley Iron Works, Salford, in the county of Lancaster, England, have invented new and useful Improvements in Gearing, of which the following is a specification.

This invention relates to gearing and has for its object to provide an improved form of gearing for imparting intermittent rotary movements to a driven member, the gear being particularly adapted for use upon bevel wheel and like gear cutting machines, such as described in patent specification No. 668772, for actuating ratchet trains which rotate the blank a distance equal to the pitch of the teeth being formed after each operative movement of the cutting tools, and feed the same forward so as to increase the depth of cut of the tools.

My invention comprises the improved combinations and arrangements of parts hereinafter described and claimed.

Referring to the accompanying sheet of explanatory drawings:—Figure 1 is a front elevation and Fig. 2 an end elevation looking from left to right of Fig. 1 showing a form of gear constructed in accordance with my invention. Fig. 3 is a sectional end elevation, looking from right to left of Fig. 1, but showing the parts in slightly different positions.

The same reference letters in the three views indicate the same parts.

The driving shaft or member *a* has a part *b*, hereinafter termed the driver, keyed thereon, a cam disk *c* being formed integrally with said driver. The latter is adapted to impart intermittent rotary movements to the spur wheel *d*. The driver comprises a sliding piece *e* which is normally retained in its outermost position by the coil spring *f*. A projection *g* formed upon *e* is adapted, when in its service position, to engage one or other of two shoulders or lugs *h* upon the spur wheel *d*, see Fig. 1. When said sliding piece *e* is moved against its spring *f*, due to the roller *i* engaging a fixed contact piece or surface *j*, the projection *g* clears the shoulder or lug *h* with which it is in engagement, and allows of the spur wheel *d* being brought to rest. To insure that the spur wheel *d* shall come to rest immediately it is freed from engagement by the driving

projection *g*, I provide in combination with the cam disk *c*, a spring pressed plunger *k*, one portion of which rides upon the said cam disk, while the other portion is adapted to engage one or other of two projections *m* upon the turned down edge of the spur wheel *d*.

The method of operation of the aforesaid parts is as follows:—With the parts in the position shown at Figs. 1 and 2, the projection *g* upon the driver is in engagement with one of the lugs or projections *h* upon the spur wheel *d* so that the latter is being rotated. The plunger *k* is clear of both the projections *m* upon *d*. When however the parts have been moved to the position shown at Fig. 3, in which the roller *i* engages the surface of *j*, the projection *g* clears the projections *h* and simultaneously the plunger *k* engages one of the parts *m*, so bringing the wheel *d* to rest. The driver *b* now rotates without the spur wheel *d* for half a revolution. When the projection *g* again approaches one of the projections *h*, the cam surface of the disk *c* raises the plunger *k* so freeing the projection *m* on the wheel *d* in preparation for the rotation of the latter by *g*. As the driver rotates and carries the wheel *d* with it, the cam surface of *c* moves from beneath *k*, so leaving the latter ready to meet one of the projections *m* on the wheel *d* immediately the latter is released from the driver.

By the employment of an intermittent driving gear constructed as before described for imparting rotary and feed movements to the blank in a gear cutting machine after each operative stroke of the cutting tools, it is found possible to speed up the running of said machine while insuring perfect accuracy in its work.

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

1. In combination, a spur wheel having projections upon its side face, a rotatable driving element having a projection thereon, a spring holding the latter projection in its service position for engaging the projections upon said spur wheel, a roller upon said driving element, a stationary element engaging said roller for moving the driving projection into its out-of-service position and free from the driven projections, a cam disk formed integrally with said driving

element, and a plunger riding upon said cam disk and capable of engaging said spur wheel, as set forth.

2. In combination, a spur wheel having
5 two projections at diametrically opposite points both upon its side face and upon its peripheral surface, a rotatable driving element having a projection thereon, a spring holding the latter projection in its service
10 position for engaging the projections upon said spur wheel side face, a roller upon said driving element, a stationary element engaging said roller for moving the driving projection into its out of service position

and free from the driven projections, a cam 15 disk formed integrally with said driving element, and a spring pressed plunger riding upon said cam disk for engaging the peripheral projections on said spur wheel, as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses. 20

THEODORE COVENTRY.

Witnesses:

ARTHUR HUGHES,
CHARLES CONRAD.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
