

W. B. TEMPLETON.
GEARING.
APPLICATION FILED OCT. 11, 1909.

1,143,558.

Patented June 15, 1915.

Fig. 1.

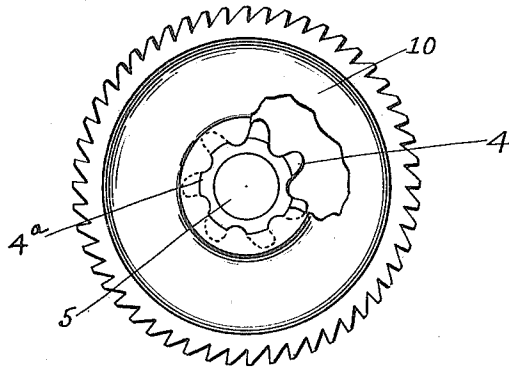


Fig. 2.

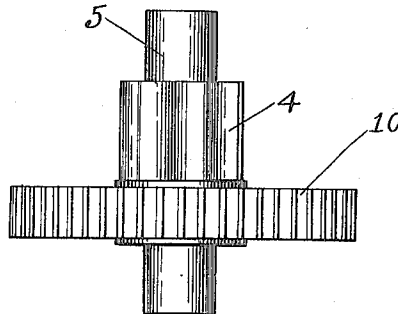
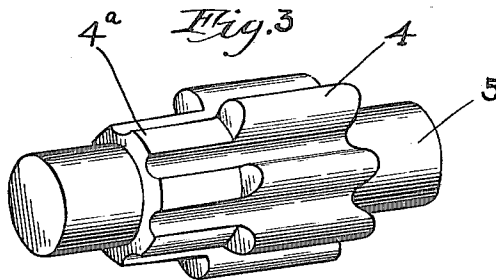


Fig. 3.



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UNITED STATES PATENT OFFICE.

WALTER B. TEMPLETON, OF CHICAGO, ILLINOIS.

GEARING.

1,143,558.

Specification of Letters Patent.

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Application filed October 11, 1909. Serial No. 522,061.

To all whom it may concern:

Be it known that I, WALTER B. TEMPLETON, a citizen of the United States, residing in Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Gearing, of which the following is a specification.

This invention relates to improvements in gearing, and, although it may be applied to various uses, it is particularly well fitted for use in connection with lifting jacks such as described in U. S. Letters Patent No. 1,025,218, granted to me May 7, 1912, on application filed August 22, 1910, Serial No. 578,312, which was a divisional application of this, my original application.

Among the salient objects of the invention as applied to lifting jacks are, to provide a construction in which the ratchet member takes the form of a wheel and the latter is united with a gear which, in turn, operates the lifting bar, the union of the ratchet wheel with the gear shaft and gear being of such character that the parts are practically as strong as though forged from a single piece; and to provide a construction of the character last referred to which may be made very economically and with great exactness.

The invention consists in the matters hereinafter described and more particularly pointed out in the appended claims.

In the accompanying drawings—Figure 1 is an elevation showing the ratchet member and pinion united together, part of the ratchet wheel being broken away to show the teeth of the pinion; Fig. 2 is a plan view of Fig. 1, and Fig. 3 is a perspective view of the pinion member.

Referring to the drawings, 10 represents one of the members to be connected together which, in the case of a lifting jack of the type referred to, takes the form of a ratchet wheel to which the lifting force is applied in order to rotate the same through suitable pawl mechanism.

In the figures 4 represents the pinion member which it is desired to key rigidly to the member 10, and in the case of a lifting jack of the type referred to I prefer to form this pinion member 4 integrally with a shaft 5, the projecting ends of which are adapted to rotate in suitable bearings, not shown.

Describing now the manner in which the members 10 and 4 are securely keyed together, it will be noticed that the teeth of

the pinion 4 are of the spur type and consequently formed with their surfaces parallel to the axis of the shaft 5. Referring to Fig. 3 it will be noticed that I have turned off one end of the pinion 4 so as to form a fluted cylinder portion 4^a, the flutings of which are the lower portions of the grooves between the turned-off teeth of the pinion. In order to connect the pinion 4 with the ratchet wheel 10 it is obviously necessary to form corresponding reversely shaped grooves or flutes in the bore of the ratchet wheel 10, these being clearly shown in Fig. 1. The reduced end of the pinion member 4 is then driven into the hub of the ratchet wheel and the reduced tooth extensions 4^a which fit into the corresponding axial grooves formed in the hub of the ratchet wheel 10 constitute an extremely rigid driving connection between the two members which is particularly well fitted to resist the shocks and abuse so often encountered in such mechanisms as lifting jacks.

It is obvious that the reduction in diameter of the key portion of the pinion may be effected either before or after the teeth are cut in the pinion; or in certain cases the pinion member may be constructed by forming the entire part as shown at one operation, such as by casting or any other approved method.

It will be obvious that the details of construction may be somewhat modified without departing from the invention and without exercise of more than ordinary mechanical skill. Therefore, I do not wish to be limited in the use of the invention, except as specified in appended claims.

I claim as my invention:

1. A driving connection between mechanical parts comprising a main shaft and a gear concentric and rigid therewith, a bearing or seat member integral with said gear, arranged upon said shaft at one end of the gear, of generally cylindric form, of a maximum diameter approximately equal to the pitch line diameter of the gear and provided with a series of key grooves formed as continuations of, and in conformity with, the inner portions of the channels between the gear-teeth, and another element apertured, fitted upon, and accurately conforming to, said grooved seat member.

2. A driving connection between mechanical parts comprising a main shaft and a gear concentric and rigid therewith, a bearing or

seat member integral with the gear and provided with a series of key grooves formed as continuations of and in conformity with the radial inner portions of the channels between the gear teeth, and another element
5 apertured, fitted upon, and accurately conforming to said groove seat.

3. A driving connection between mechanical parts, comprising a spur gear, a seat
10 member integral with the gear and provided with a series of key grooves formed as con-

tinuations of and in conformity with the radial inner portions of the channels between the gear teeth, another element suitably apertured, fitted upon, and conforming
15 to said grooved seat member, and means for rotatably supporting said gear.

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Witnesses:

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