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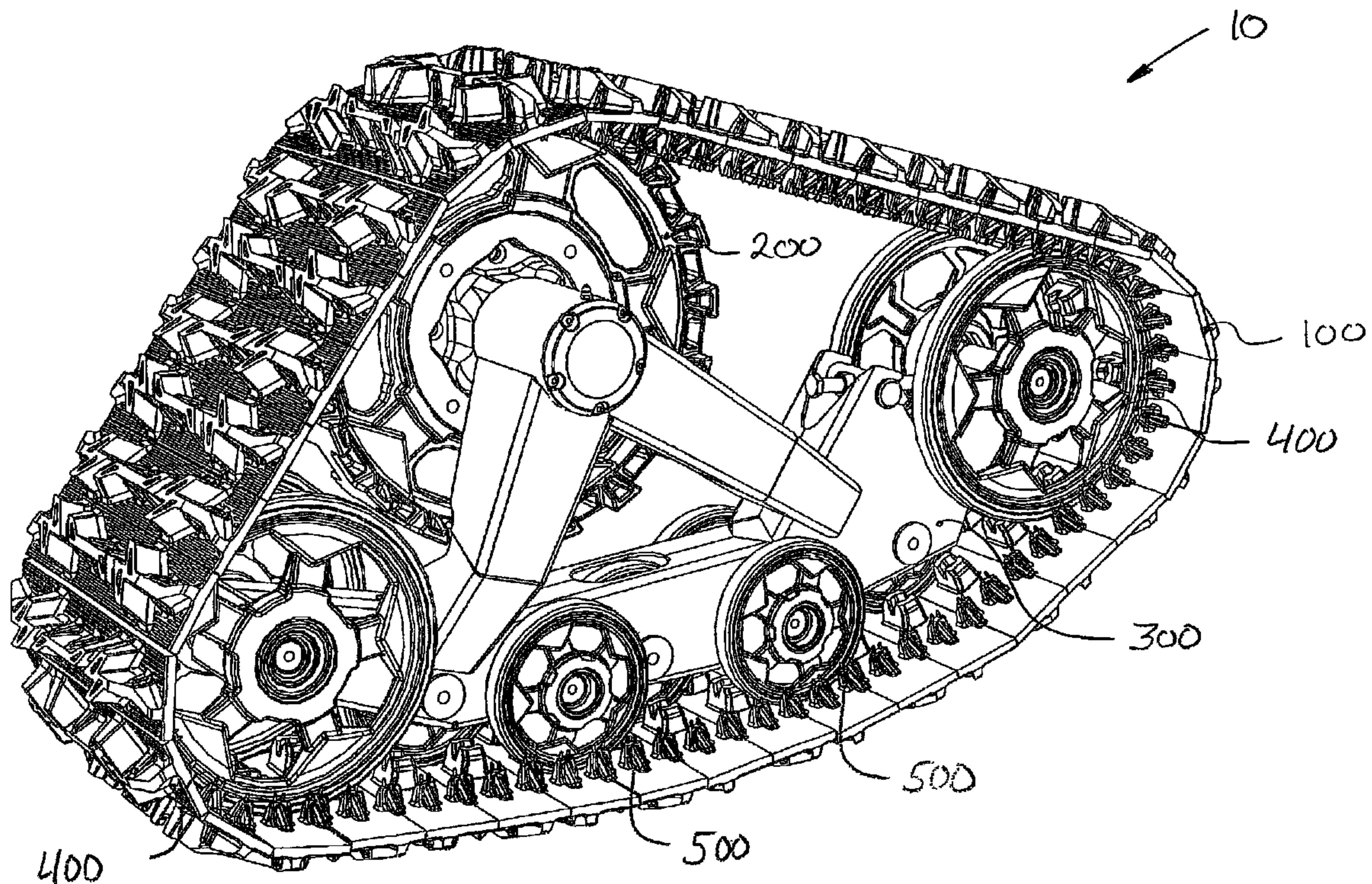
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(54) Titre : ENSEMBLE DE TRACTION

(54) Title: TRACTION ASSEMBLY



(57) Abrégé/Abstract:

The present invention generally provides a wheel replacing traction assembly which uses, for propulsion, a longitudinally extending endless track disposed around and cooperating with a sprocket wheel, idler and road wheels and a supporting frame. The traction assembly generally comprises three rows of longitudinally aligned road wheels; one outer row located on the outer side of the supporting frame, one inner row located on the inner side of the supporting frame and one central row located within the supporting frame. The road wheels of the central row are generally staggered with respect to the inner and outer rows. The front portion of the supporting frame is also provided with a track tensioning system which comprises a member which supports idlers wheels and which can be pivotally extended or retracted to tension the endless track.

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TRACTION ASSEMBLY

Abstract

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10 row located on the outer side of the supporting frame, one inner row located on the inner side of the supporting frame and one central row located within the supporting frame. The road wheels of the central row are generally staggered with respect to the inner and outer rows. The front portion of the supporting frame is also provided with a track tensioning system which comprises a member which supports idler wheels and which
15 can be pivotally extended or retracted to tension the endless track.

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Title of the Invention

[0001] Traction Assembly.

5 Cross-Reference to Related Applications

[0002] The present patent application claims the benefits of priority of commonly assigned U.S. Provisional Patent Application No. 61/023,260, entitled "Traction Assembly" and filed at the United States Patent and Trademark Office on January 24,
10 2008.

Field of the Invention

[0003] The present invention generally relates to traction assemblies used as wheel
15 replacements for wheeled vehicles.

Summary of the Invention

[0004] The objectives of the present invention are realized by generally providing an
20 improved traction assembly particularly adapted to replace the front and/or the rear wheels of a wheeled all-terrain vehicle (hereinafter "ATV").

[0005] More particularly, the traction assembly of the present invention generally comprises a sprocket wheel and a longitudinally extending endless track cooperating
25 therewith. The sprocket wheel is preferably fixedly attached by means known in the art to the traction axle (or the wheel hub) of the vehicle. The traction assembly also comprises a supporting frame on which idler wheels are mounted. These idlers wheels are preferably mounted at the extremities of the supporting frame. A plurality of road wheels can also be mounted along the supporting frame to increase the stability of the endless track.

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[0006] In accordance with an aspect of the present invention, the traction assembly is provided with three rows of substantially longitudinally aligned road wheels; one outer row disposed on the outer side of the supporting frame (Fig. 3), one inner row located on the inner side of the supporting frame (Fig. 4) and one central row located within the supporting frame (Figs. 5 and 6). The wheels of the central row are preferably staggered with respect to the wheels of the inner and outer rows.

[0007] In accordance with another aspect of the present invention, the traction assembly is provided with a track tensioning system for tensioning the endless track. The track tensioning system generally comprises a member having a first end pivotally connected at a first point at the front (or at the rear) of the supporting frame and a second end which supports a pair of idler wheels. The tensioning system also comprises a push-bolt assembly which extends between the second end of the member and a second point at the front (or at the rear) of the supporting frame which is distant from the first point (Figs 8 and 9).

[0008] By adjusting the push-bolt of the push-bolt assembly, the length of the push-bolt assembly changes, accordingly pushing or retracting the second end of the member onto which the idler wheels are mounted. Understandably, when the second end of the member is pushed away from the supporting frame by the push-bolt assembly, the tension in the track is increased whereas when the second end is retracted and pulled toward the supporting frame by the push-bolt assembly, the tension in the track is reduced.

[0009] If the push-bolt assembly is temporarily removed from the traction assembly, then the member, and therefore, the idler wheels mounted thereon, can be fully retracted, thereby providing sufficient space to install or remove the endless track.

Brief Description of the Drawings

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[0010] The above and other objects, features and advantages of the invention will become more readily apparent from the following description, reference being made to the accompanying drawings in which:

5 [0011] Figure 1 is a perspective view of an embodiment of the traction assembly of the present invention.

[0012] Figure 2 is a perspective view of the traction assembly of Fig. 1, without the endless track.

[0013] Figure 3 is an outer side view of the traction assembly shown in Fig. 2.

[0014] Figure 4 is an inner side view of the traction assembly shown in Fig. 2.

10 [0015] Figure 5 is a front view of the traction assembly shown in Fig. 2.

[0016] Figure 6 is a rear view of the traction assembly shown in Fig. 2.

[0017] Figure 7 is another perspective view of the traction assembly of Fig. 1, without the endless track.

15 [0018] Figure 8 is a close-up side perspective view of the tensioning system of the traction assembly of Fig. 1.

[0019] Figure 9 is a close-up top perspective view of the tensioning system of the traction assembly of Fig. 1.

Detailed Description of the Preferred Embodiment

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[0020] A novel traction assembly will be described hereinafter. Although the invention is described in terms of specific illustrative embodiments, it is to be understood that the embodiments described herein are by way of example only and that the scope of the invention is not intended to be limited thereby.

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[0021] Referring first to Fig. 1, the traction assembly 10 of the present invention generally comprises a longitudinally extending endless traction band 100 disposed around a sprocket wheel 200 and a supporting frame 300.

30 [0022] The traction band 100 is typically made from reinforced elastomeric material.

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[0023] The sprocket wheel 200 is configured to be fixedly mounted to the traction axle (or the wheel hub) of a vehicle (not shown) via securing nuts (not shown).

5 [0024] The supporting frame 300 of the traction assembly 10 is configured to be non-drivingly coupled to the sprocket wheel 200, typically via a bearing assembly known in the art. In accordance with the present invention, the supporting frame 300 supports idler wheels 400 respectively mounted at the fore and at the aft thereof and a plurality of road wheels 500 mounted therealong. The road wheels 500 are generally provided to increase the stability of the traction band 100 as the lower run thereof engages the ground.

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[0025] In accordance with an aspect of the present invention and as depicted in Figs. 3 to 7, the traction assembly 10 is provided with three rows of substantially longitudinally aligned road wheels 500; one outer row 510 disposed on the outer side of the supporting frame (Figs. 3, 5 and 6), one inner row 530 located on the inner side of the supporting
15 frame (Fig. 4, 5 and 6), and one central row 520 located within the supporting frame (Figs. 5, 6 and 7). In addition, as best shown in Figs. 3, 4 and 7, the road wheels 500 of the central row 520 are preferably staggered with respect to the road wheels 500 of the inner row 530 and of the outer row 510.

20 [0026] By having several parallel rows of road wheels 500, the traction assembly 10 provides better support and guidance to the lower run of the traction band 100. More particularly, the parallel rows provide more uniform support to the central portion and to the lateral portions of the traction band 100. In addition, the parallel rows provide improved guidance of the traction band 100 as each row prevents or reduces lateral
25 movements thereof.

[0027] In accordance with another aspect of the present invention and as depicted in Figs. 8 and 9, the traction assembly 10 is provided with a track tensioning mechanism 350 for tensioning the traction band 100. The track tensioning mechanism 350 generally
30 comprises a supporting member 360 having a first end 362 pivotally connected at a first point 364 at the front (or at the rear) of the supporting frame 300 and a second end 366

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which supports the front (or the rear) idler wheels 400. The tensioning mechanism 350 also comprises a push-bolt assembly 370 which extends between the second end 366 of the member 360 and a second point 368 at the front (or at the rear) of the supporting frame which is distant from the first point 364.

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[0028] By adjusting the push-bolt 372 of the push-bolt assembly 370, the length of the push-bolt assembly 370 changes, accordingly pushing or retracting the second end 366 of the member 360 onto which the idler wheels 400 are mounted. Understandably, when the second end 366 of the member 360 is pushed away from the supporting frame 300 by the
10 push-bolt assembly 370, the tension in the traction band 100 is increased whereas when the second end 366 is retracted and pulled toward the supporting frame 300 by the push-bolt assembly 370, the tension in the traction band 100 is reduced.

[0029] If the push-bolt assembly 370 is temporarily removed from the traction assembly
15 10 or completely retracted, then the member 360, and therefore, the idler wheels 400 mounted thereon, can be fully retracted, thereby providing sufficient space to install or remove the traction band 100.

[0030] While illustrative and presently preferred embodiments of the invention have been
20 described in detail hereinabove, it is to be understood that the inventive concepts may be otherwise variously embodied and employed and that the appended claims are intended to be construed to include such variations except insofar as limited by the prior art.

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Claims

- 1) A traction assembly and shown and described herein.

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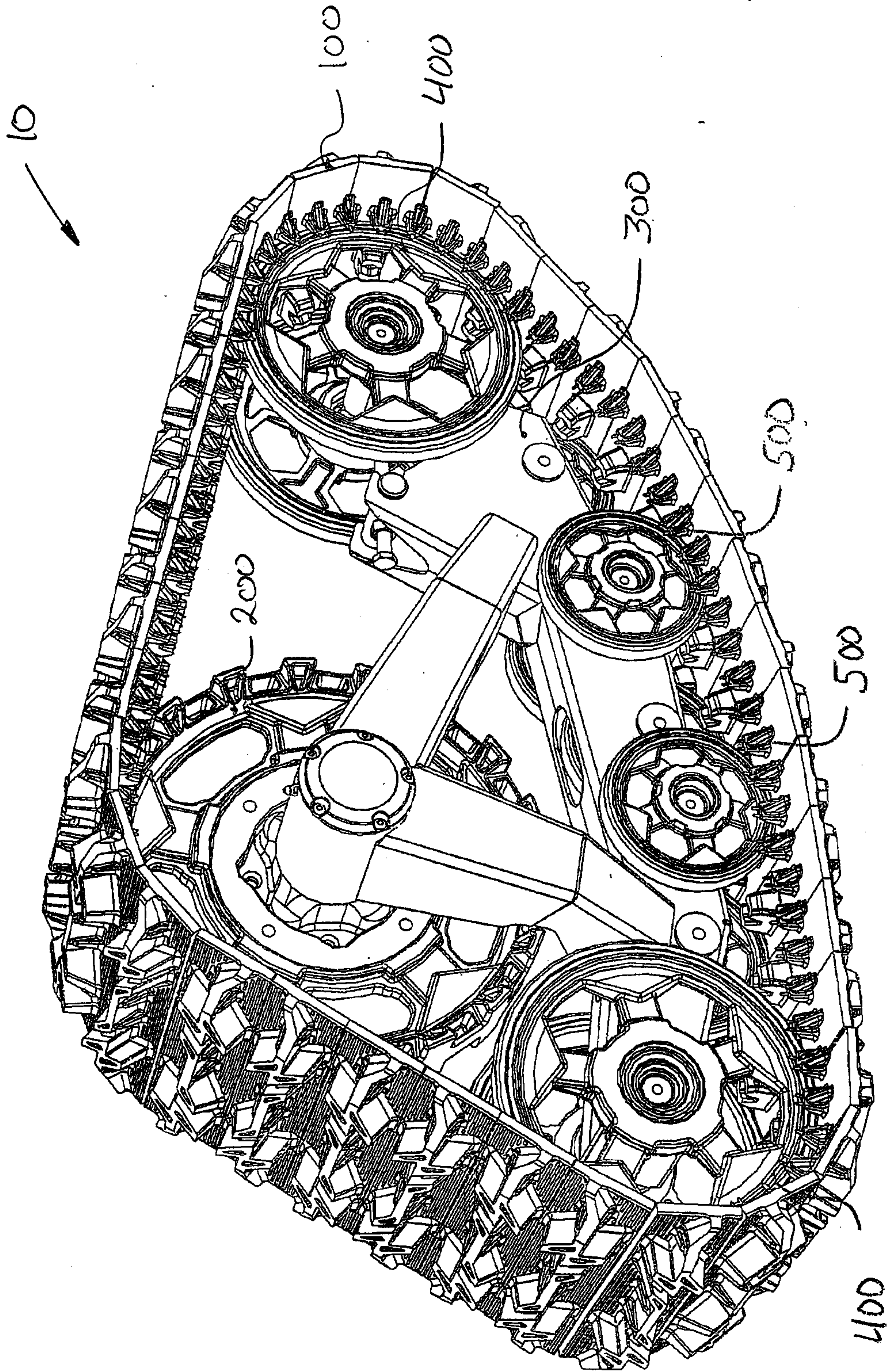


Fig. 1

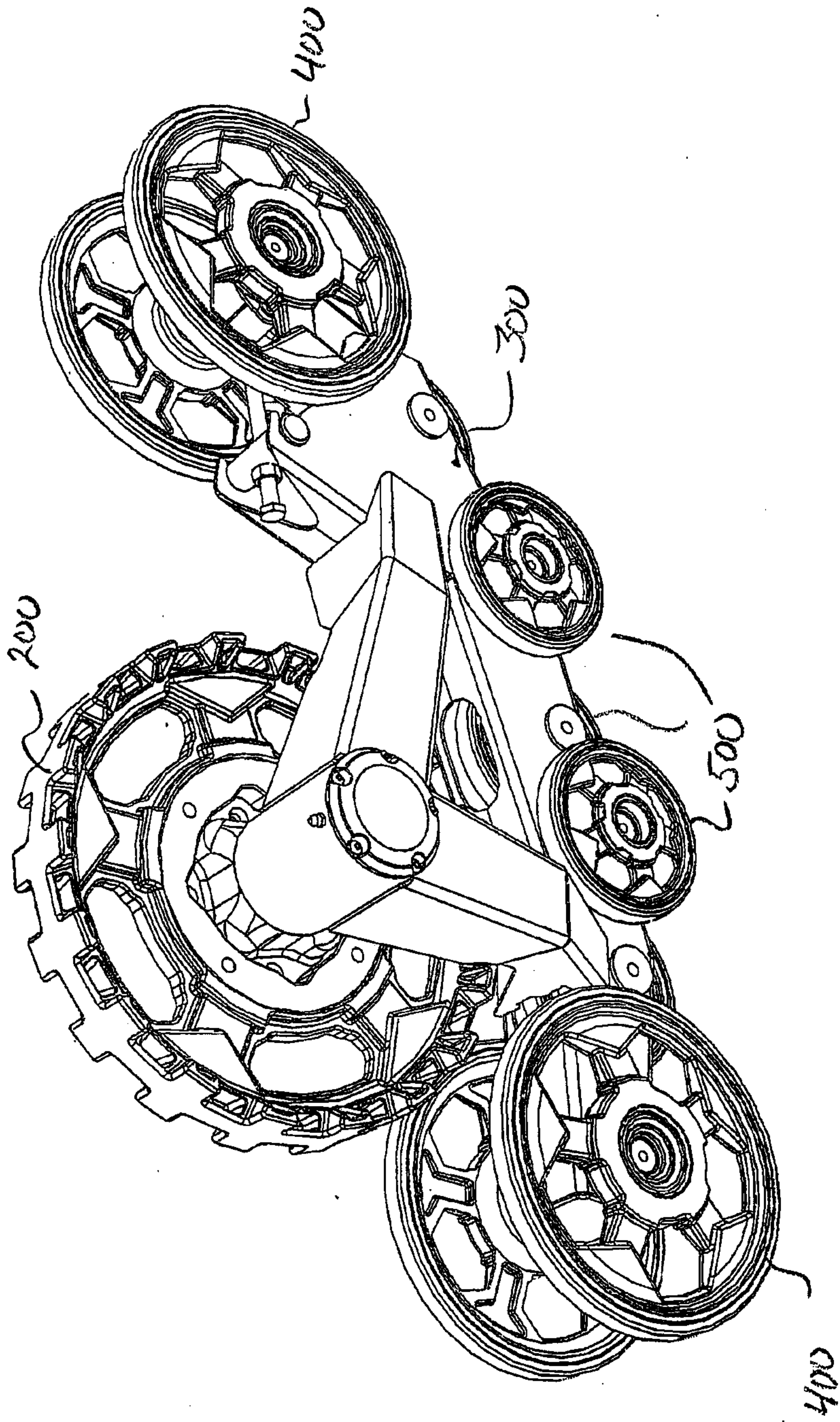


Fig. 2

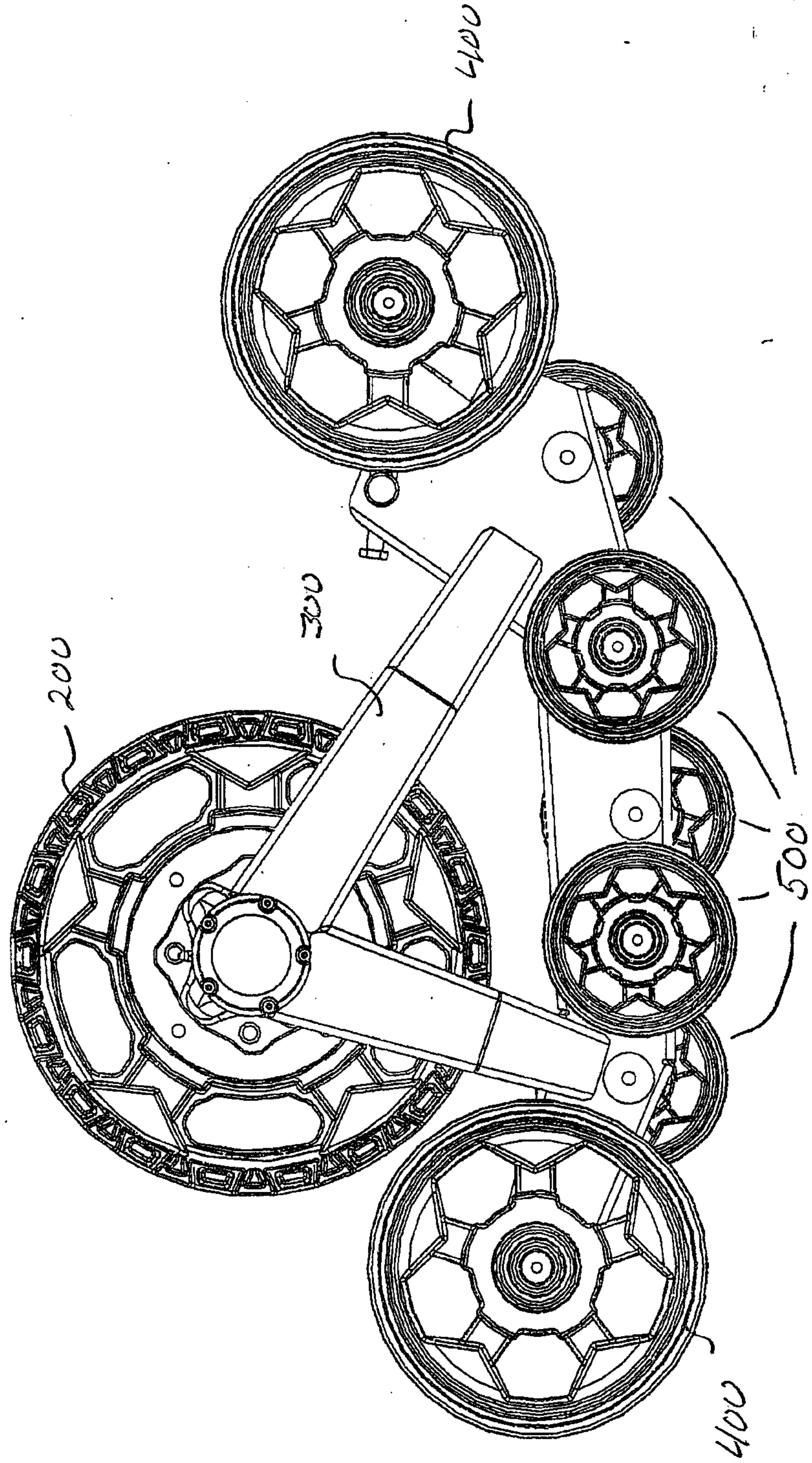
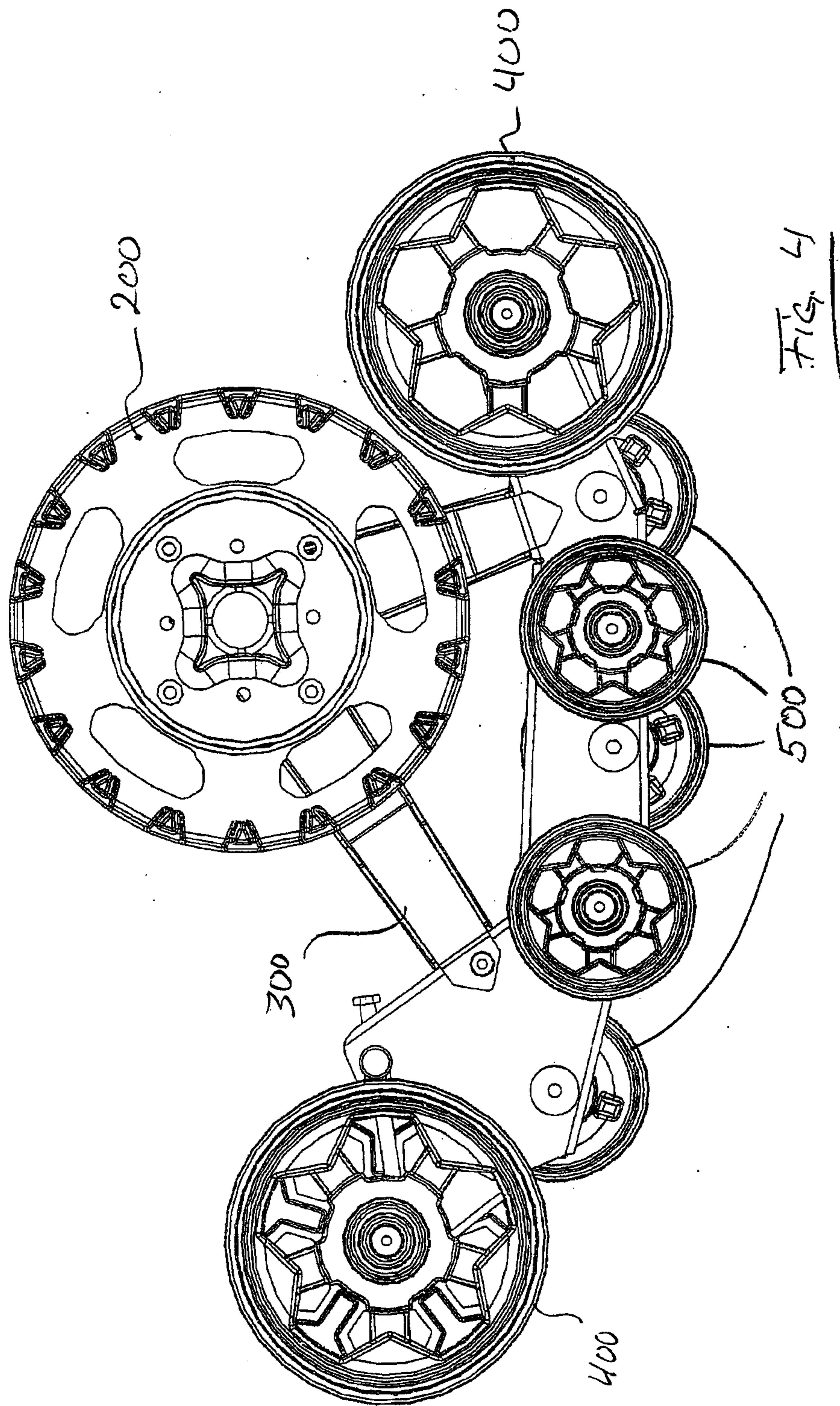


Fig. 3



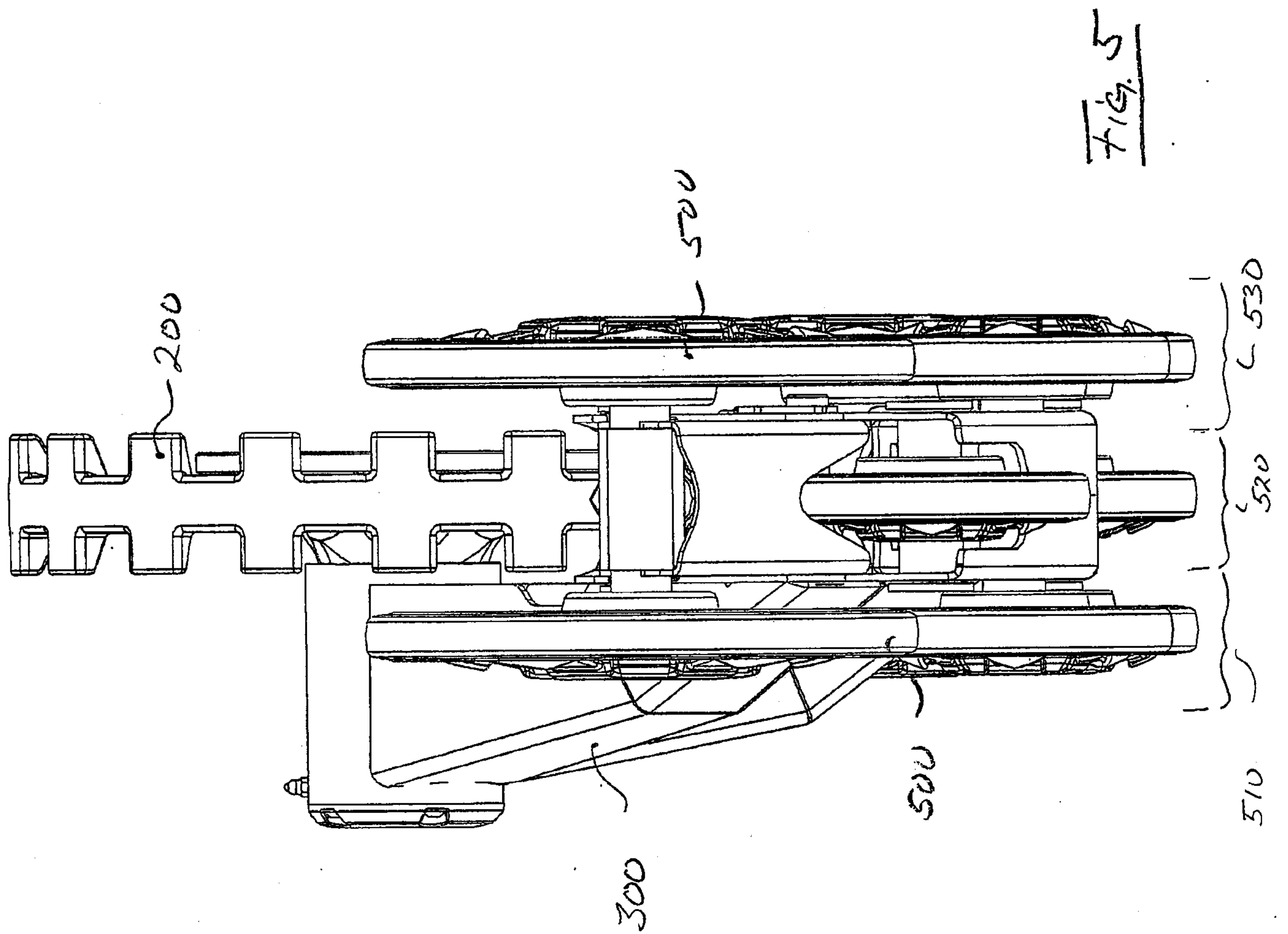
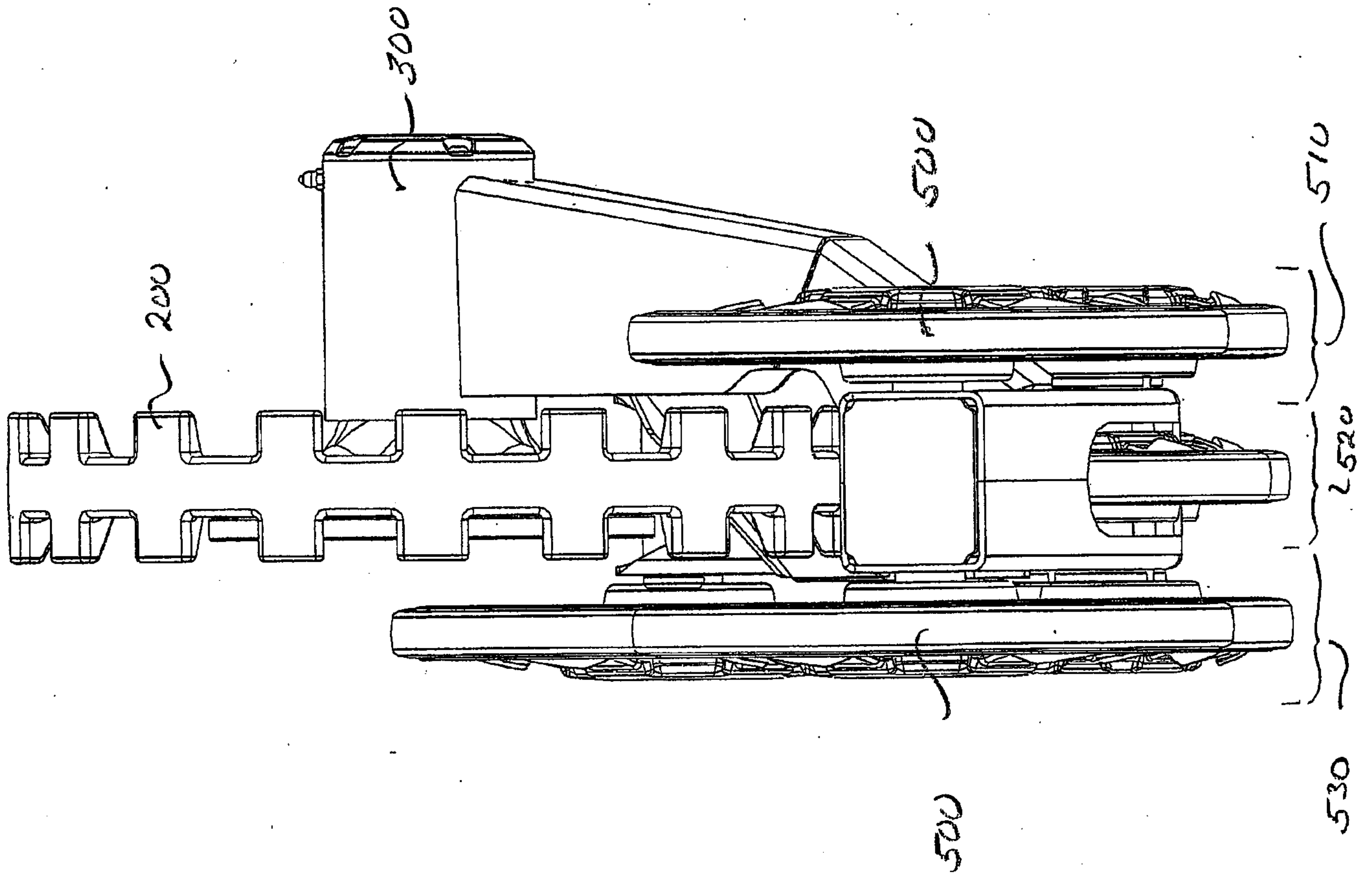


Fig. 6



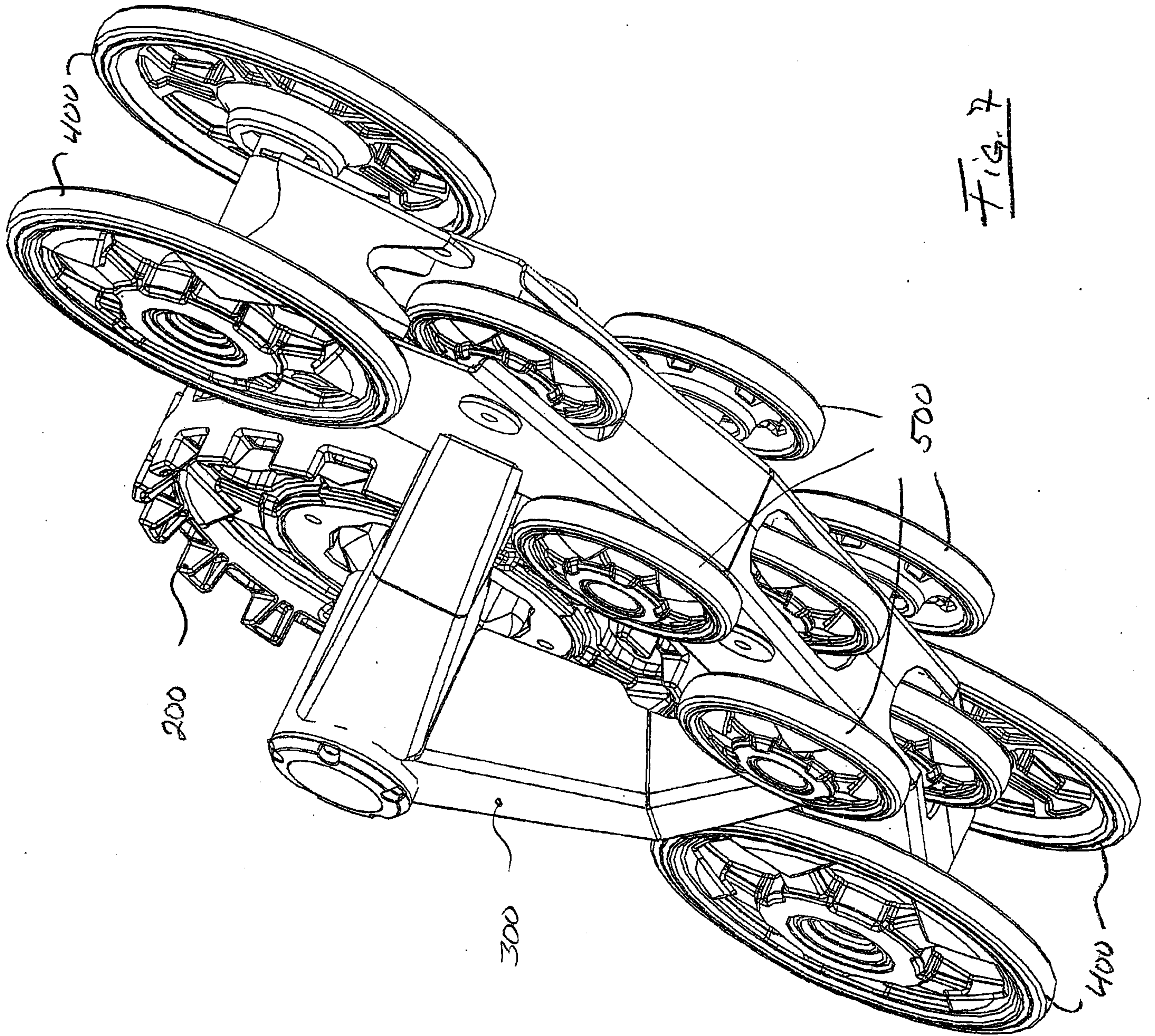


Fig. 7

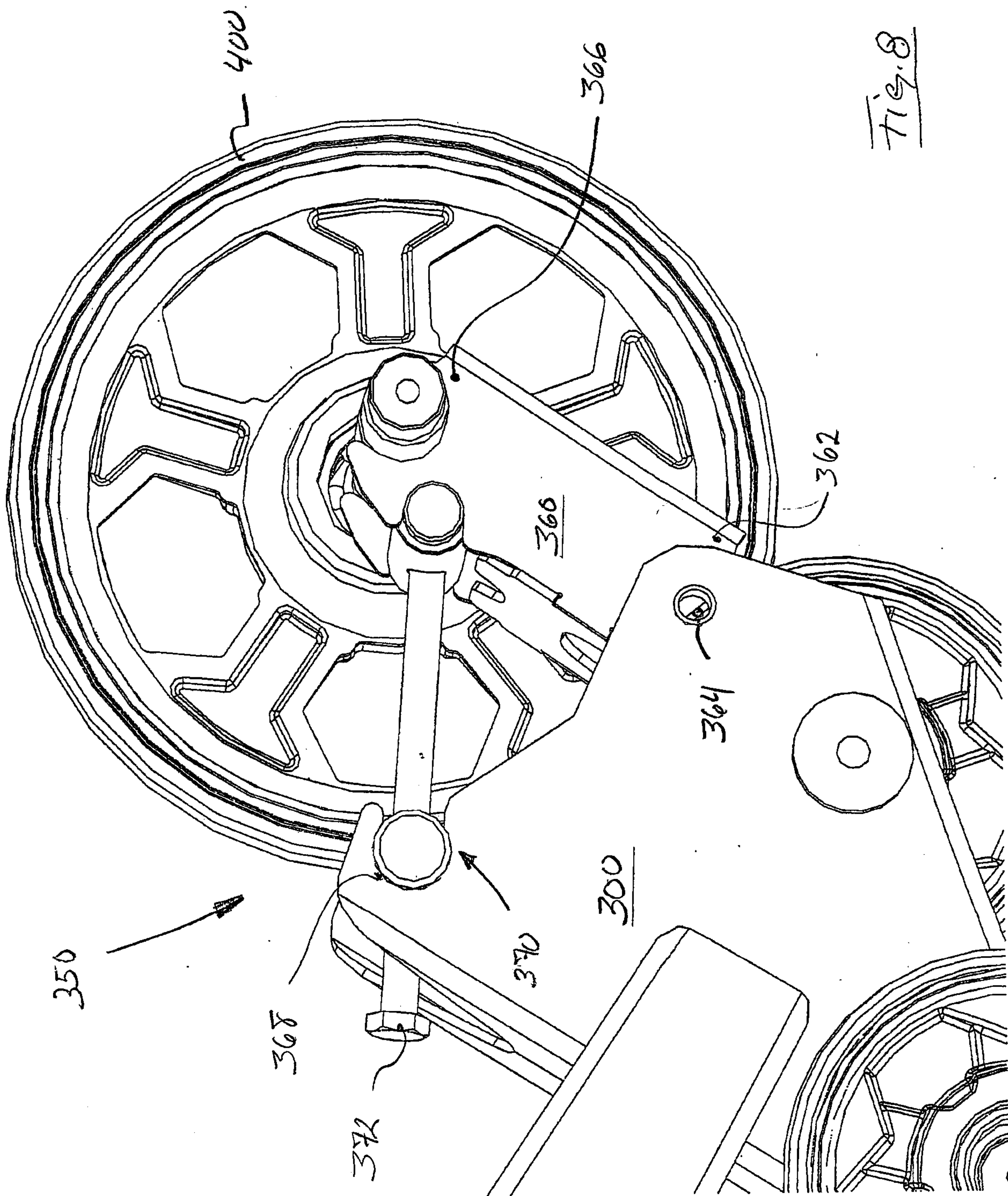


Fig. 8

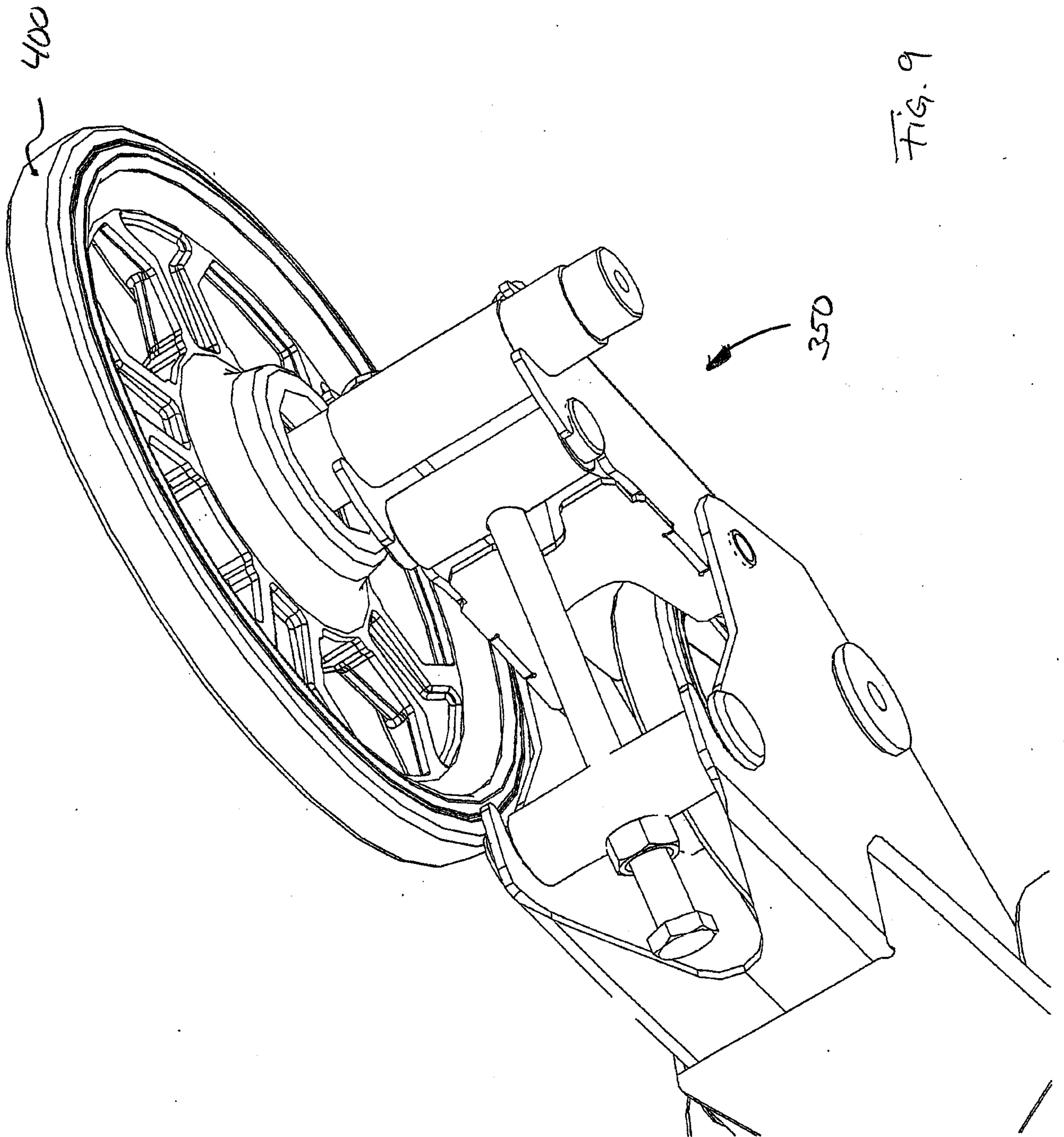


Fig. 9

