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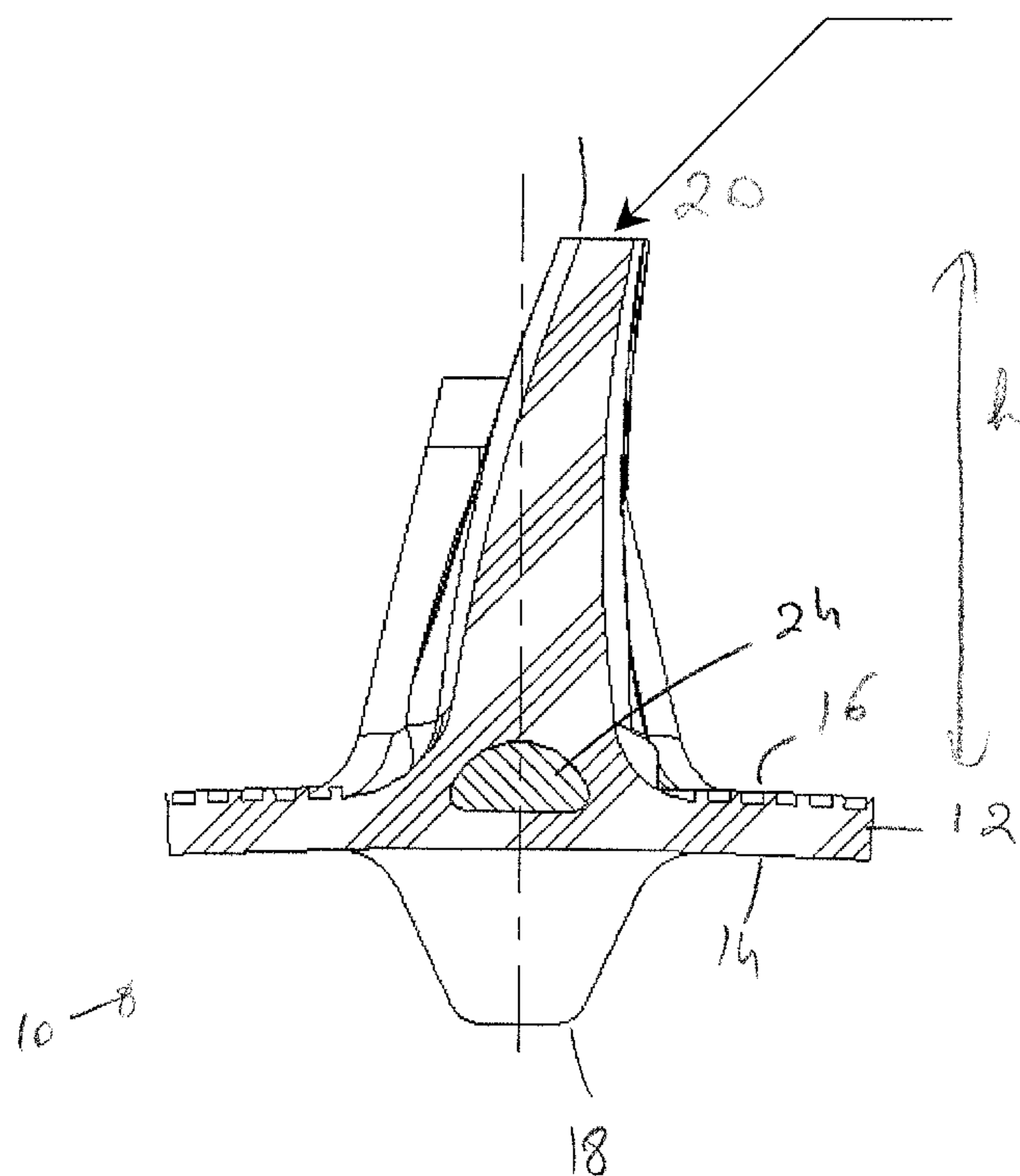
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(54) Titre : PROFIL DE CHENILLE

(54) Title: ENDLESS TRACK BELT PROFILE



(57) Abrégé/Abstract:

The present invention provides an endless track belt profile allowing an enhanced ground traction of a track when driven by the transmission system of the vehicle. In particular, the profile of the present invention presents a curve or a series of curves in a longitudinal section thereof. Alternatively, the profile of the present invention comprises a mid profile sustained by side profiles.

ABSTRACT OF THE DISCLOSURE

The present invention provides an endless track belt profile allowing an enhanced ground traction of a track when driven by the transmission system of the vehicle. In particular, the profile of the present invention presents a curve or a series of curves in a longitudinal section thereof. Alternatively, the profile of the present invention comprises a mid profile sustained by side profiles.

TITLE OF THE INVENTION

ENDLESS TRACK BELT PROFILE

FIELD OF THE INVENTION

[0001] The present invention pertains to an endless track for use on a snowmobile. More specifically, the present invention is concerned with endless track belt profile.

BACKGROUND OF THE INVENTION

[0002] The propulsion system found on heavy duty vehicles consists of a pair of longitudinally spaced apart wheel structures which are arranged on opposite sides of the vehicle chassis which is driven by a pair of endless, substantially inextensible belts, each having an inner surface and an outer surface. The inner surface is provided with a series of longitudinally spaced members which guide the track relative to driving and tracking wheels forming part of the wheel structures. The outer surface of the belt is formed of a plurality of longitudinally spaced tread members that provide traction to the vehicle when travelling on various ground conditions. Thus, the outer surface of the track may be formed with a series of integral profiles having various configurations to provide traction to the snowmobile.

[0003] Therefore, a track is usually formed of a body of elastomeric material, the outer surface of which displays a series of transverse profiles that provide traction for the snowmobile as it travels over ground, especially snow or ice, while the inner surface of the track displays a series of integral lugs, which are contacted by sprocket wheels that drive the snowmobile track in rotation.

[0004] These endless belts, although inextensible, are subject to bending as they engage the necessary supporting wheels such as drive and idler wheels or rollers. As the belt passes around and contact these wheels, they are subject to stress and it is noted that the greatest stress occurs at the base of the tread member or its junction with the top surface of belt. Belt slitting is also noted whenever the construction of the belt consists of a tread member and a guide member in the same vertical plane.

[0005] It appears that there is still a need in the art for endless track belt provided with a geometry allowing to reduces the stress exerted on the belt, especially during its bending occurrence when driven, and allowing to optimize a pressure distribution over the belt profiles.

OBJECTS OF THE INVENTION

[0006] An object of the present invention is therefore to provide an improved endless track belt profile.

[0007] Other objects, advantages and features of the present invention will become more apparent upon reading of the following non-restrictive description of specific embodiments thereof, given by way of example only with reference to the accompanying drawings.

BRIEF DESCRIPTION OF THE DRAWINGS

[0008] In the appended drawings:

[0009] Figure 1 is a fractional side view of a profile according to an embodiment of the present invention ; and

[0010] Figure 2 is an fractional elevational view of a profile according to another embodiment of the present invention.

DESCRIPTION OF SPECIFIC EMBODIMENTS

[0011] Generally stated, the present invention provides a profile for an endless track belt that allows an improved ground traction of the track when driven by the transmission system of a vehicle such as a snowmobile for example.

[0012] Turning to Figure 1 of the appended drawings, a profile according to a first embodiment of the present invention will now be described.

[0013] A track 10 typically comprises endless drive belt 12 trained around drive sprockets or wheels (not shown) for driving the belt 12 in an endless path.

[0014] The belt 12 has an inner face 14 and an outer face 16, which, as it passes along a lower run of the belt 12, engages a surface (not shown) to be traversed. The inner track surface 14 is provided with spaced drive lugs 18 which are spaced along the length of the inside of the belt 12 for engaging the drive wheels (not shown) as usual.

[0015] The outer track surface 16 typically displays a series of transversally extending ground engaging profiles 20 extending from a center of the track 10 to outer edges thereof; each profile 20 defines a non-uniform shape having greater width in an area of the outer surface which is located in vertical registry with the rolling path on the inner surface thereby optimizing

pressure distribution over the profiles 20 when the track 10 is in use.

[0016] The profile may be made of a rubber material and provided with reinforcing rods 24 usually extending transversally of the track 10 within the profile 20.

[0017] The endless belt 12 may be made of flexible rubber or flexible rubber reinforced to strengthen the track, as is well known in the art. Typically, conventional tracks include, embedded in the rubber material of the body of the belt 12 and in the region of the profiles 20, such reinforcing rods 24, either metallic or plastic, to provide transverse rigidity to the track 10.

[0018] According to the present invention, a height h of the profile 20 presents a curve or a series of curves in a longitudinal section thereof, in such a way as to allow a backward flapping effect of the profile 20, thereby providing enhanced ground traction to the track 10 when driven by the transmission system of the vehicle (not shown). In particular, such a profile is found to allow compacting snow, for example, which assists the vehicle into uplifting and extracting itself from heavy snow.

[0019] As illustrated in Figure 2, a profile 50 according to another embodiment of the present invention is formed of a mid profile 52 and of side profiles 54, 56.

[0020] The mid profile 52 is of generally trapezoidal shape, with a top surface 62 having a massive rectangular shape to provide maximum traction.

[0021] The side profiles 54, 56 have a generally conical shape, with a massive base thereof on the belt 12 and a smaller base 60 projecting outwards. They are longitudinally located on each side of the mid profile 52, with their massive bases 58 sandwiching the mid profile 52 in such a way as to strengthen the mid profile 52, in particular supporting it and preventing it from an excessive folding thereof when engaging the surface to be traversed (not shown). Although the side profiles 54, 56 are illustrated in this example as being of a lesser height than the mid profile 52, it is to be understood that they may be of an height, since their main function is to stand as supporting columns on each side of the mid profile 52.

[0022] People in the art will appreciate that the side profiles 54 and 56 also reduce premature wearing and damage of the mid profile 52, thereby increasing the traction performance of the latter.

[0023] Obviously, the different features of the present invention, namely a profile which height presents a curve or a series of curves in a longitudinal section thereof in such a way as to allow a backward flapping effect of the profile, thereby providing enhanced ground traction to a track; and the provision of side profiles as supporting columns on each side of a mid profile may be used separately or in combination on a track, so as to achieve enhanced traction performance thereof.

[0024] Although the present invention has been described hereinabove by way of specific embodiments thereof, it can be modified, without departing from the spirit and nature of the subject invention as described herein.

CLAIMS

1. A profile for a track belt which height presents at least one curve in a longitudinal section thereof.

2. The profile according to claim 1, further comprising side profiles on each side of a mid profile.

3. A track for a tracked vehicle, comprising:
an outer track surface; and
a series of transversally extending ground engaging profiles extending from said outer track surface;

wherein each one of said series of transversally extending ground engaging profiles has a decreasing width from said outer track surface outwards.

4. The track according to claim 3, wherein each one of said series of transversally extending ground engaging profiles has a height h presenting at least one curve in a longitudinal section thereof.

5. The track according to claim 3, wherein each one of said series of transversally extending ground engaging profiles is formed of a mid profile and of side profiles longitudinally located on each side of the mid profile.

6. The track according to claim 5, wherein said mid profiles are of a generally trapezoidal shape, with a top surface thereof having a massive rectangular shape, and said side profiles have a generally conical shape, with a massive base thereof on the outer track surface and a smaller base projecting outwards therefrom.

7. The track according to claim 6, wherein said massive base of said side profiles supports the mid profile and prevents the mid profile from an excessive folding thereof when engaging a surface to be traversed.

8. The track according to anyone of claims 3 to 7, wherein each one of said series of transversally extending ground engaging profiles comprises a reinforcing rod extending transversally in relation to the outer track surface.

9. The track according to anyone of claims 3 to 8, wherein each one of said series of transversally extending ground engaging profiles is made of a rubber material.

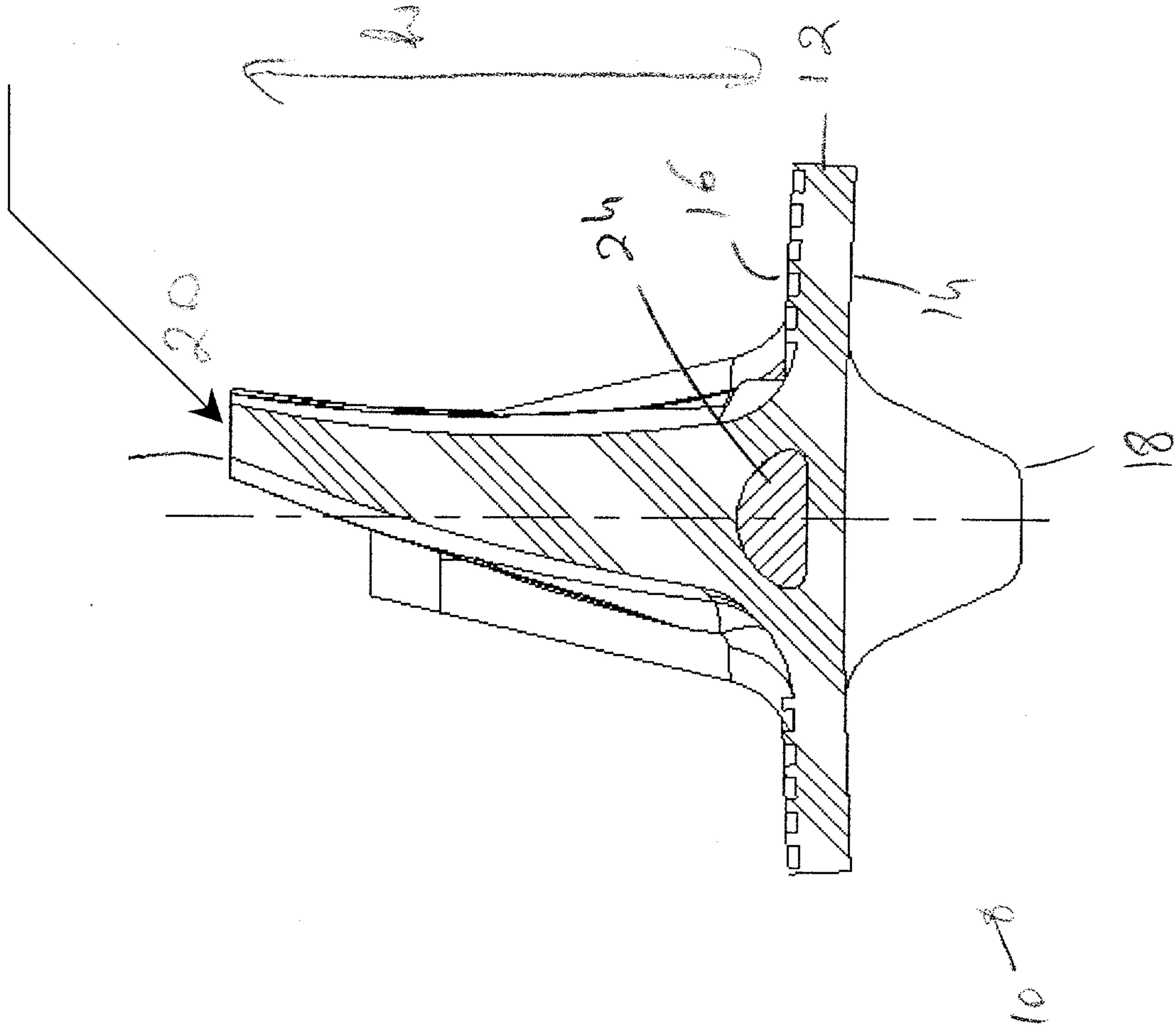
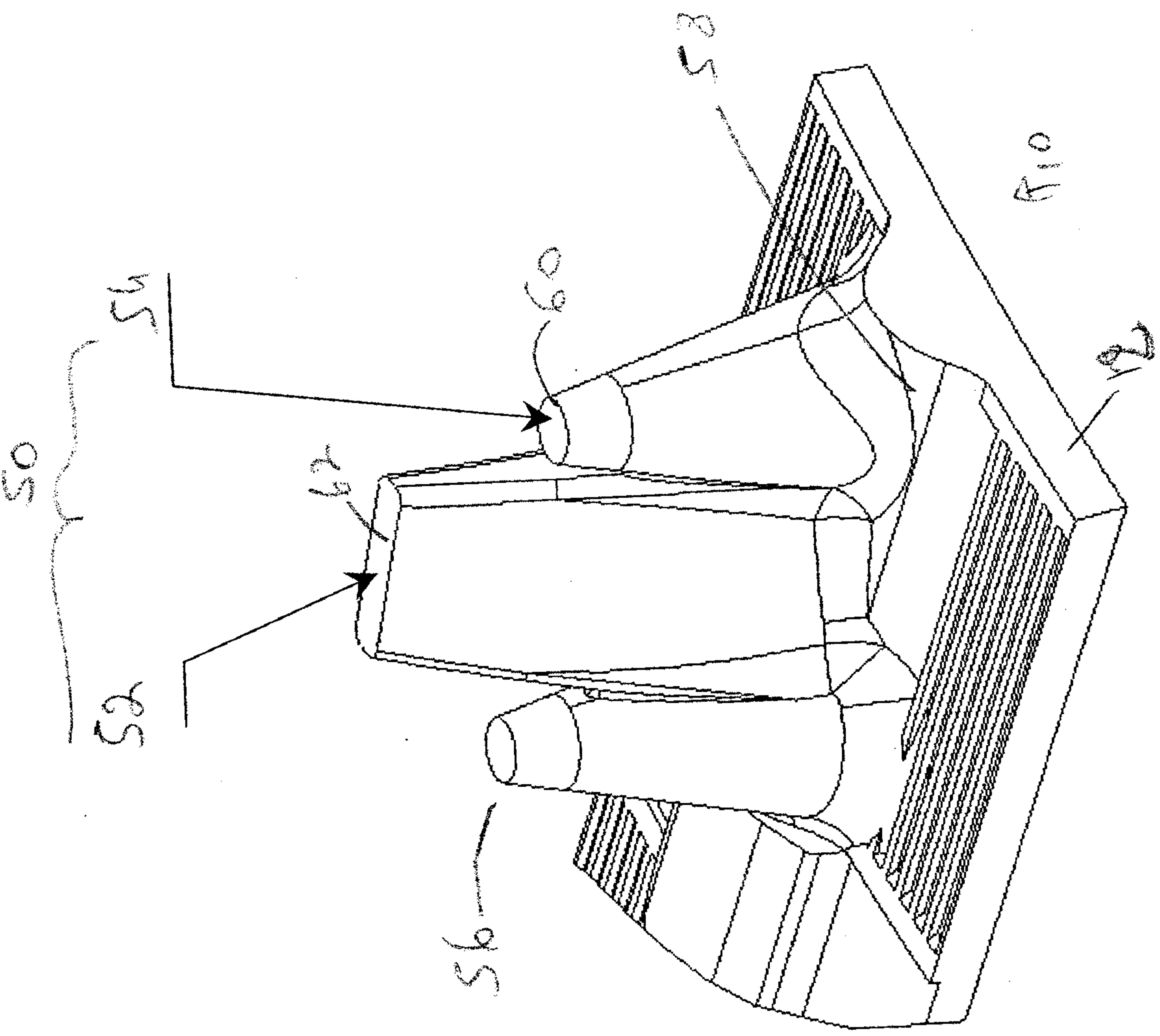


Figure 1

Figure 2



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