

PATENT SPECIFICATION

(11)

1 330 369

DRAWINGS ATTACHED

(21) Application No. 34729/71 (22) Filed 23 July 1971

(31) Convention Application No. 67 703

(32) Filed 4 Aug. 1970 in

(33) Japan (JA)

(44) Complete Specification published 19 Sept. 1973

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G3T A10C1 A2C

C3P 2A 2C20D1 2C20D3 2H3 2HY

F2B 13B2B 1B



(54) A GASKET FOR A TIMEPIECE

(71) We, KABUSHIKI KAISH SUWA SEIKOSHA, a Japanese company, of 3-4, 4-chome, Ginza, Chuo-ku, Tokyo, Japan, do hereby declare the invention for which we

5 pray that a patent may be granted to us, and the method by which it is to be performed to be particularly described in and by the following statement:

This invention relates to a gasket suitable 10 for use in timepieces, for example watches or clocks.

Hitherto, synthetic rubbers, particularly polyacrylonitrile rubbers, have been used to prepare gaskets for timepieces. Such gaskets, 15 however, have been found to possess drawbacks. In particular, it has been found that the coefficient of friction between such gaskets and the adjacent metal parts of the timepiece is high and, moreover, increases 20 with the passage of time.

In the past, in order to remedy this defect, silicone grease was applied to the surface of the gaskets. Such treatment does, initially, 25 reduce for example, the initial torque required to turn the crown of the timepiece. However, the remedy is not of a sufficiently permanent nature; the silicone grease applied gradually dissipates and, consequently, it is difficult to maintain satisfactory 30 lubrication of the gaskets.

The present invention ensures prolonged satisfactory lubrication of gaskets and timepieces.

According to one aspect of the present 35 invention there is provided a gasket suitable for use in a timepiece, the gasket including from 3% to 10% by weight of di-2-ethylhexyl sebacate. Di-2-ethylhexyl sebacate has the formula $C_6H_{13}(COOC_6H_{13})_2$ and is 40 referred to hereinafter as DOS.

According to a further aspect of the present invention there is provided a timepiece having a gasket as recited in the preceding 45 paragraph.

When DOS is incorporated into the poly- [Price 25p]

mer matrix of the gasket in excessively high amounts, the forming characteristics of the polymer deteriorate and, after forming, the gasket tends to lose shape. It has been 50 found that the inclusion of up to a maximum of 10% by weight of DOS is very suitable in overcoming these difficulties.

When DOS is incorporated in the above specified amounts, it is found that the initial 55 coefficient of friction of the gasket is substantially reduced. Moreover, the gasket is found to possess self-greasing characteristics which enable the lubrication effect to be maintained for a long period. Furthermore, 60 the turning torque required to rotate the crown is minimised; resistance to cold of the gasket material is improved; and, in particular, a crown and rotatable bezel so gasketed can be rotated smoothly.

The gaskets to which the present inven- 65 tion is particularly suited are illustrated in the accompanying drawing, in which:

Figure 1 is a cross-sectional view of a gasketed crown of a timepiece; and

Figure 2 is a cross-sectional view of a 70 gasketed rotatable bezel of a timepiece.

In Figure 1, the crown 1 of a timepiece is shown rotatably seated and positioned in a sleeve 2 by means of a coaxial annular sliding crown gasket 3. 75

In Figure 2, a rotatable bezel 10 is slidably seated on a rotatable bezel gasket 13 which is, in turn, seated on the bezel 11 of the case body.

The sliding crown gasket 3 and the rotatable bezel gasket 13 both contain from 3% 80 to 10% by weight of di-2-ethylhexyl sebacate.

WHAT WE CLAIM IS:

1. A gasket suitable for use in a timepiece the gasket including from 3% to 10% by weight of di-2-ethylhexyl sebacate. 85

2. A gasket according to claim 1 which is a sliding crown gasket. 90

Price 75p

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(54) A GASKET FOR A TIMEPIECE

(71) We, KABUSHIKI KAISH SUWA SEIKOSHA, a Japanese company, of 3-4, 4-chome, Ginza, Chuo-ku, Tokyo, Japan, do hereby declare the invention for which we pray that a patent may be granted to us, and the method by which it is to be performed to be particularly described in and by the following statement:

This invention relates to a gasket suitable for use in timepieces, for example watches or clocks.

Hitherto, synthetic rubbers, particularly polyacrylonitrile rubbers, have been used to prepare gaskets for timepieces. Such gaskets, however, have been found to possess drawbacks. In particular, it has been found that the coefficient of friction between such gaskets and the adjacent metal parts of the timepiece is high and, moreover, increases with the passage of time.

In the past, in order to remedy this defect, silicone grease was applied to the surface of the gaskets. Such treatment does, initially, reduce for example, the initial torque required to turn the crown of the timepiece. However, the remedy is not of a sufficiently permanent nature; the silicone grease applied gradually dissipates and, consequently, it is difficult to maintain satisfactory lubrication of the gaskets.

The present invention ensures prolonged satisfactory lubrication of gaskets and timepieces.

According to one aspect of the present invention there is provided a gasket suitable for use in a timepiece, the gasket including from 3% to 10% by weight of di-2-ethylhexyl sebacate. Di-2-ethylhexyl sebacate has the formula $C_{24}H_{48}(COOC_2H_{17})_2$ and is referred to hereinafter as DOS.

According to a further aspect of the present invention there is provided a timepiece having a gasket as recited in the preceding paragraph.

When DOS is incorporated into the poly-

mer matrix of the gasket in excessively high amounts, the forming characteristics of the polymer deteriorate and, after forming, the gasket tends to lose shape. It has been found that the inclusion of up to a maximum of 10% by weight of DOS is very suitable in overcoming these difficulties.

When DOS is incorporated in the above specified amounts, it is found that the initial coefficient of friction of the gasket is substantially reduced. Moreover, the gasket is found to possess self-greasing characteristics which enable the lubrication effect to be maintained for a long period. Furthermore, the turning torque required to rotate the crown is minimised; resistance to cold of the gasket material is improved; and, in particular, a crown and rotatable bezel so gasketed can be rotated smoothly.

The gaskets to which the present invention is particularly suited are illustrated in the accompanying drawing, in which:

Figure 1 is a cross-sectional view of a gasketed crown of a timepiece; and

Figure 2 is a cross-sectional view of a gasketed rotatable bezel of a timepiece.

In Figure 1, the crown 1 of a timepiece is shown rotatably seated and positioned in a sleeve 2 by means of a coaxial annular sliding crown gasket 3.

In Figure 2, a rotatable bezel 10 is slidably seated on a rotatable bezel gasket 13 which is, in turn, seated on the bezel 11 of the case body.

The sliding crown gasket 3 and the rotatable bezel gasket 13 both contain from 3% to 10% by weight of di-2-ethylhexyl sebacate.

WHAT WE CLAIM IS:

1. A gasket suitable for use in a timepiece the gasket including from 3% to 10% by weight of di-2-ethylhexyl sebacate.

2. A gasket according to claim 1 which is a sliding crown gasket.

Price 75p



3. A gasket according to claim 1 which is a rotatable bezel gasket.
4. A gasket substantially as hereinbefore described with reference to the accompanying drawings.
5. A timepiece having a gasket as claimed in any preceding claim.

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