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The patent describes a lubricating material for metal surfaces under severest duties. The lubricating component^{and} is water soluble, resistant to cold temperatures and prevents corrosion of the metal surfaces. The compound is made up of a mixture of Di- and Tri-ethanol amine soaps, or-esters of unsaturated high molecular weight fatty acids.

It has been known for some time that Triethanol amine salts or esters may be employed as lubricants. However, these types of lubricants are not suited for use on such elements as machine gun parts or torpedo launching devices. However, for these machines just mentioned mixtures of Di and Triethanol amine soaps or-esters of unsaturated high molecular weight fatty acids may be used very satisfactorily. The soaps or esters of the mixed amines have a lower setting point than the esters or soaps of the individual amines. The mixed soaps or esters have very good lubricating properties. The good lubricating properties are not lost at very intense cold temperatures, and remain even should the soaps or esters be mixed with oil and water to form an emulsion, or with alcohols, hydrocarbons, or vegetable or mineral oils. The preparation of the soaps is done by stirring the Di and Tri-ethanol amine into the fatty acids at a temperature of 40°-50°C. The formation of the esters takes place at 150°-250°C in presence of a suitable catalyst, such as zinc dust for instance. In both cases such quantities of materials are employed so that the final product is neutral or very faintly alkaline. In order to produce compounds containing the esters and the soaps, the ester is compounded first according to the method outlined and then the soap is formed at 40-50°C as indicated. A product of excellent lubricating properties for the purposes as outlined earlier is found in a mixture of the salts or respectively the Monoesters of Ricinoleic - or Oleic Acid - this mixture is obtained by letting the said acids react with a mixture of 40 parts of Diethanolamine and 60 parts of Triethanolamine. This mixture possesses a very low setting point. It should be mentioned that the Lactate of the Monolinoleic acid ester in combination with 40 parts of Diethanol amine and 60 parts of Triethanol amine is suited also for these lubricating tasks.

CLAIMS.

1. Water soluble, cold resistant and non-corrosive lubricants for machine parts under severeworking conditions; the lubricants consist of a mixture Di-and Triethanol amines which have formed their respective soap or esters.
2. Lubricants made from a mixture of 40 parts of Di and 60 parts of Triethanolamine and unsaturated ^{high} molecular weight fatty acids.

DEUTSCHES REICH

Urkunde

über die Erteilung des Patents

und die in der angefügten Patentschrift dargestellte Erfindung ist in dem gesetzlich vorgeschriebenen Verfahren dem Großdeutschen Reich, vertreten durch

ein Patent gemäß § 30, Abs. 5 des Patentgesetzes ohne Bekanntmachung und ohne Eintragung in die Patentrolle erteilt worden.

Das Patent führt die Bezeichnung

Reichspatentamt

Deutsches Reich



Reichspatentamt

Patentschrift

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Deutsches Reich

vertreten durch das Oberkommando der Kriegsmarine
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