

UNITED STATES PATENT OFFICE.

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ALCOHOL, ALCOHOL-CONTAINING MIXTURES, AND SIMILAR LIQUIDS.

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This invention relates to alcohol, alcohol-containing mixtures and similar liquids intended more particularly for use as fuel and for other industrial uses.

5 Fuel alcohol, spirits of wine, benzol-alcohol mixtures and similar liquids exert a corrosive action on metals, leading in practice to the destruction of the metal, the discoloration of the liquid and more particularly to the formation of flaky and powdery products of corrosion of the metal. For example, the use of alcohol and alcohol mixtures as fuels for motors is very considerably affected by the fact that such corrosive action leads to injury of the storage tanks of liquid fuel stores, the fuel tanks of vehicles, the choking of the strainers of motor vehicles by the products of corrosion and to the putting out of action of parts of the carburetor.

20 Many attempts have been made to overcome these corrosion phenomena, the origin of which is not exactly known. Small additions of ammonia and olein have, for example, been tried. It was found, however, that these additions do not act or at least act to an insufficient extent.

30 The present invention is based upon the observation that salts of benzoic acid are capable of counteracting the corrosive action of such liquids to a surprising extent.

The method in accordance with the invention comprises therefore the addition to alcohol, alcohol-containing mixtures and similar liquids, of salts of benzoic acid, preferably in a proportion of less than one per cent.

35 Normally a proportion of 0.2 to 0.3 of a salt of benzoic acid will be sufficient for the purpose.

40 Where, for example, in accordance with the invention to commercial alcohol there is added 0.2 to 0.3 per cent of sodium benzoate, a product is obtained which will possess little or no corrosive action upon zinc, iron and copper.

45 If, for instance, into a body of commercial alcohol containing this proportion of sodium benzoate, zinc, iron and copper articles are immersed and maintained in contact one with the other they will not be affected at all, even after being left there for several weeks, whereas the same alcohol under exactly the same conditions but without this

addition would after twenty-four hours be discoloured and metal articles immersed therein would be corroded, solid corrosion products being contained in the liquid.

Having now described my invention, what I claim as new and desire to secure by Letters Patent is:—

1. The method of counteracting the corrosive action of alcohol, alcohol containing fuels and mixtures containing not more than 10% of water which comprises adding to such liquids a benzoic acid salt of a base having an alkaline re-action.

2. The method of counteracting the corrosive action of alcohol, alcohol containing fuels and mixtures containing not more than 10% of water which comprises adding to such liquids benzoic acid salts of a base having an alkaline re-action in a proportion of less than 1 per cent.

3. The method of counteracting the corrosive action of alcohol, alcohol containing fuels and mixtures containing not more than 10% of water which comprises adding thereto benzoic acid salts of a base having an alkaline re-action in a proportion of not less than 0.2 or more than 0.3 per cent.

4. The method of counteracting the corrosive action of alcohol, alcohol containing fuels and mixtures containing not more than 10% of water which comprises adding thereto a small proportion of sodium benzoate.

5. The method of storing alcohol, alcohol containing fuels and mixtures containing not more than 10% of water in metallic containers so as not to corrode the container which consists in adding to the liquid a benzoic acid salt of a base having an alkaline re-action.

6. The method of storing alcohol, alcohol containing fuels and mixtures containing not more than 10% of water in metallic containers so as not to corrode the container which consists in adding to the liquid benzoic acid salts of a base having an alkaline re-action in a proportion of less than 1 per cent.

7. The method of storing alcohol, alcohol containing fuels and mixtures containing not more than 10% of water in metallic containers so as not to corrode the container

which consists in adding to the liquid benzoic acid salts of a base having an alkaline re-action in a proportion not less than 0.2 or more than 0.3 per cent. tainers so as not to corrode the container which consists in adding to the liquid a small proportion of sodium benzoate. 14

- 5 8. The method of storing alcohol, alcohol containing fuels and mixtures containing not more than 10% of water in metallic con- In testimony whereof I have signed my name to this specification.

WALTER OSTWALD.