UNITED STATES PATENT OFFICE.

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COMPOSITION ADAPTED FOR MAKING CATALYZERS.

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To all whom it may concern:

Be it known that I, CARLETON ELLIS, a citizen of the United States, and a resident of Montclair, in the county of Essex and State of New Jersey, have invented certain new and useful Improvements in Composition Adapted for Making Catalyzers, of which the following is a specification.

This invention relates to a composition intended for use in the production of catalytic material especially such as may be employed in the hydrogenation of fatty oils. The invention embraces a compound of nickel or other suitable metallic body of a non-catalytic nature ground in or mixed with an oil vehicle and capable of yielding catalytic material on heating, with or without the introduction of a reducing gas.

The invention is especially directed to the production of a composition containing nickel hydrate, nickel carbonate, cobalt carbonate and the like, preferably free from sulfates, incorporated with mineral oil, petroleum jelly, molten wax and the like, such hydrocarbons being preferably free from sulfur, to form a concentrate or putty containing preferably not more than twenty to fifty per cent. of oil or other hydrocarbon vehicle calculated on the amount of the nickel compound employed. In other words preferably a greater amount of the nickel compound is used than the oil vehicle.

When nickel hydrate or nickel carbonate is heated in an oil vehicle to a temperature of 350° reduction takes place with the formation of catalytic material. The fineness depends to a considerable extent on the fineness of the original nickel carbonate or hydrate. When nickel carbonate is preserved for a considerable time or shipped over long distances it is likely to cake and become too coarse for direct use in making catalyzer. According to the present invention the nickel compound is preferably ground in an oil vehicle such as petroleum jelly in order to secure that high degree of fineness which arises from grinding in an oil medium and at the same time eliminate losses by formation of dust. The material when ground in oil does not cake on standing and may be shipped over long distances and to hot climates without deterioration. By using a mineral oil practically no change takes place in the vehicle on standing.

Other oils such as fatty oils may be used in some cases but have a tendency to become rancid which may be objectionable especially with certain compounds of nickel.

Organic salts of nickel also may be employed such as nickel acetate, oxalate or formate. In such cases it is possible either to use a dry salt or one which contains water of crystallization and even some occluded moisture. Such compounds when ground in paraffin oil become very fine and retain that degree of fineness indefinitely. Approximately twenty to thirty per cent. of the paraffin oil may be employed.

The composition is preferably made up as stated by grinding the nickel compound with only just enough oil to produce a product of the consistency of putty or slightly thinner. This may be packaged in cans or casks for shipment. When using it is thinned with an additional amount of oil which may be fatty oil if desired and heated to the decomposition point with or without the introduction of hydrogen or other reducing gas. If prepared by heating in mineral oil to a cracking temperature it is preferable not to have any fatty oil present but to add a sufficient amount of mineral oil to give the necessary fluidity for carrying out the heating operation. The catalyzer so obtained may be passed through a filter press to remove the excess oil or the mixture of catalyzer with the oil may be added directly to the fatty oil to be hydrogenated, provided of course the presence of a small amount of mineral oil in the fatty oil is not objectionable.

The invention is particularly directed to the use of basic compounds of nickel such as nickel carbonate or nickel hydrate incorporated with, and preferably ground with a hydrocarbon vehicle preferably a mineral oil free from sulfur employing a minor proportion of the latter so as to yield a plastic mass or concentrate of the character of putty and the invention includes a putty-like composition comprising a basic compound of nickel.

What I claim is:—

1. A composition adapted for yielding catalyzer on heating which comprises a basic compound of nickel ground with a lesser amount of oil.

2. A composition adapted for yielding catalyzer on heating which comprises nickel carbonate ground with a lesser amount of oil.

3. A composition adapted for yielding catalyzer on heat treatment which comprises a mixture of finely divided nickel carbonate in a hydrocarbon vehicle, the proportion of the latter being less than the proportion of nickel carbonate.

4. A putty of nickel carbonate and a substantially fixed vehicle.

5. A putty comprising a substantially fixed vehicle and a basic compound of nickel adapted on heating to yield catalytic material.

6. A putty comprising a substantially fixed vehicle and a compound of nickel adapted on heating to yield catalytic material.

7. A soft plastic mass comprising an oily vehicle and a salt of nickel adapted on heating to yield catalytic material.

CARLETON ELLIS.