(19) Europäisches Patentamt
European Patent Office
Office européen des brevets

(11) Publication number: **0 149 011**
A1

(12) EUROPEAN PATENT APPLICATION

(21) Application number: **84111922.5**

(22) Date of filing: **04.10.84**

(51) Int. Cl.⁴: **C 11 B 1/12**
C 11 B 13/00

(30) Priority: **07.10.83 SE 8305543**

(43) Date of publication of application:
24.07.85 Bulletin 85/30

(84) Designated Contracting States:
AT DE FR GB NL SE

(71) Applicant: **Ottenholm, Tor Axel Ingvar**
Kavallerigatan 7 nb
S-194 33 Upplands Väsby(SE)

(72) Inventor: **Ottenholm, Tor Axel Ingvar**
Kavallerigatan 7 nb
S-194 33 Upplands Väsby(SE)

(74) Representative: **Jacobsson, Rune et al,**
JACOBSSON & BILLBERG PATENTBYRA AB Box 21113
S-100 31 Stockholm 21(SE)

(54) A method for producing oil from animal feet and/or hooves.

(57) A mixture of animal feet and/or hooves and water is in an air-tight, pressure-resistant container subjected to high-frequency electrical energy. After a certain time the mixture of fat and water now obtained as a bouillon-like mixture is discharged from the container and is supplied to a separator for separation of the fat from the water. The separated fat in the form of oil is thereafter supplied to a filtering apparatus for removal of particularly stearine. If desired, chemicals are finally added and a chemically clean, durable oil is obtained as a final product.

EP 0 149 011 A1

0149011

A METHOD FOR PRODUCING OIL FROM ANIMAL FEET AND/OR HOOVES

The present invention relates to a method for producing oil from animal feet and/or hooves.

Feet and hooves have previously been destroyed as being of no value together with other waste from the animal bodies. In those cases it has been a wish to utilize also this waste, the waste has been heated together with water by means of wapor. After pressing a technical fat has been obtained and a waste product for use as manure. The technical fat is not clean and becomes rancid after a relatively short time. Moreover, it stiffens already at a few degrees above zero. A possible area for using such a fat has e.g. been within the detergent industry. It is, however, for the above mentioned reasons impossible to use such a fat for instance within the food-stuff industry or on the whole instead of mineral oils.

By a method according to the present invention, on the other hand, a chemically clean oil is obtained from animal feet and/or hooves which can be used instead of high-class mineral oils. Moreover, the obtained oil has high lubrication qualities, which can make it appropriate to use in i.e. watches, gyro compasses and the like. A further essential quality of the oil is the high viscosity. It maintains without further treatment its fluid condition within the range $\pm$ 10-15^{o}C. The oil produced according to the invention is furthermore essentially cheaper than mineral oil.

In order to obtain this chemically clean oil from animal feet and/or hooves having the above mentioned qualities the present invention is characterized by the method steps

to feed high-frequency electrical energy through a mixed mass consisting of animal feet and/or hooves and enclosed in an air-tight pressure-resistant container,

to discharge from the container a mixture of fat removed from the feet and/or the hooves and water,

to separate the fat from the water,
to filtrate the fat separated in the form of oil for removal of stearine therefrom.

In the cases a more durable oil is desired, chemicals are, according to the invention, added to the oil obtained after filtration.

A method according to the invention for obtaining oil from animal feet and/or hooves can be carried out in the following manner.

The feet and/or hooves are packed in an air-tight, sufficiently pressure-resistant container, a so called autoclave, of e.g. polyesther, and the autoclave is filled with water such that it covers the feet and/or hooves.

The water and the feet and/or hooves contained in the autoclave are heated with high-frequency (e.g. 27.12MHz or 13.56MHz), to preferably 100-130^{o}C.

In a heating by subjecting the mixture in the autoclave to high-frequency energy the mixture constitutes principally of a dielectric in a capacitor aimed to find the positions with their negative side towards the positive electrode in the high-frequency autoclave and vice versa. Owing to the fact that the polarity of the electrodes is changed with an appropriate frequency the molecules are brought into vibration. This means a heating of the mixture. The required HF-energy is dependent on the volume of the autoclave. The guiding value is about 1KWh/l.

A bouillon-like solution of water and fat is discharged from the container after a sufficient heating time and is transferred to a separator for obtaining fat without water. The water-free fat is thereafter supplied to a filtering apparatus of appropriate configuration, e.g. a multi-layer filter with filter

plates, for removal of particularly stearine from the fat in the form of oil. Due to this filtration the viscosity of the oil is permanently increased and the oil can for instance be maintained in fluid condition within the temperature range ± 10-15°C. After the filtration the oil can be refined in order to make it appropriate to use in certain applications. Moreover, in order to obtain a highly durable oil appropriate chemicals can be added to the oil.

The final product obtained from a treatment of animal feet and/or hooves as described above is a chemically clean oil which for instance can be used instead of mineral oils of high grade, e.g. for use within the food-stuff industry. Moreover, the oil has high lubrication qualities, which makes it appropriate to use in connections where such qualities are required, e.g. in watches or gyro compasses. The initial products and the manufacturing process are comparatively cheap and an essentially cheaper oil than conventional mineral oils is obtained.

C L A I M S

1. A method for producing oil from animal feet and/or hooves, c h a r a c t e r i z e d b y the method steps
to feed high-frequency electrical energy through a mixture of animal feet and/or hooves and water contained in an air-tight pressure-resistant container,
to discharge from the container a mixture of fat and water removed from the feet and/or hooves,
to separate the fat from the water,
to filtrate the fat separated in the form of oil for removal of stearine from the fat.

2. A method according to claim 1, c h a r a c t e r i z e d i n that the oil after the filtration is refined.

3. A method according to claim 1 or 2, c h a r a c t e - r i z e d i n that chemicals are added to the filtrated oil and the filtrated and refined oil, respectively.

European Patent Office

EUROPEAN SEARCH REPORT

0149011
Application number

EP 84 11 1922

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl 4)
A	FR-A- 519 907 (G.D. ROGERS) * Abstract 1,3 *	1	C 11 B 1/12 C 11 B 13/00
A	DE-B-1 060 354 (G. STACHE) * Claim 1; column 2, lines 21 - 26 *	1	
A	US-A-1 930 169 (H.O. HALVORSON et al.) * Claim 1; column 1, lines 8-14, 28-31 *	1	

TECHNICAL FIELDS SEARCHED (Int. Cl.4)

C 11 B
C 09 H

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
THE HAGUE	11-01-1985	PEETERS J.C.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
Y : particularly relevant if combined with another document of the same category
A : technological background
O : non-written disclosure
P : intermediate document

T : theory or principle underlying the invention
E : earlier patent document, but published on, or after the filing date
D : document cited in the application
L : document cited for other reasons

& : member of the same patent family, corresponding document

EPO Form 1503 03 82