

# UNITED STATES PATENT OFFICE.

RUFUS LEE HARDY, OF OMAHA, NEBRASKA, ASSIGNOR TO BERTHA A. HARDY, OF OMAHA, NEBRASKA.

## MEDICINE FOR HOGS.

No Drawing.

Application filed February 28, 1927. Serial No. 171,729.

This invention relates to compounds of sodium hydroxide, pine tar oil either natural or synthetic, turpentine, and a fluid extract of chenopodium. This compound is to be administered to hogs by mixing with the water, milk, slop, or wet or dry feed. It acts as an anthelmintic and also destroys all other forms of bacteria which causes various diseases of the hog.

The invention does not reside solely in the mere mixture of these ingredients but also comprises a process for mixing the same by which the various ingredients are so broken up and intimately associated with each other to form an emulsion that the various constituents thereof can be readily fed together with the regular feed of the hog without any objectionable results.

In preparing this compound a solution of sodium hydroxide is formed in the proportion of one part of sodium hydroxide to two parts of water, this making a relatively saturated solution. Six and one-half gallons of pine tar oil are placed in the steel tank equipped with an electric mixer which may revolve at a speed of about 100 revolutions per minute. While the electric mixer is working there is added to the pine tar oil therein about twelve and a half gallons of the saturated solution of sodium hydroxide prepared as indicated above. This is added at such rate that it requires about ten minutes to complete the addition of the sodium hydroxide and the electric mixer is then operated for about ten minutes longer.

Into this mixture there is then admitted six gallons of redistilled turpentine at such speed that twenty minutes will be required for the admission thereof. During this time the electric mixer is run at a speed of about 200 revolutions per minute. As a result of the above steps, the turpentine is broken up into very fine particles and mixed with the sodium hydroxide and pine tar oil in such intimate relation that the whole may be administered to animals without any of the objectionable results which would follow administration of pine tar oil or redistilled turpentine in their usual forms. Pine tar oil alone administered upon live cultures will not produce the desired result while if the redistilled turpentine is given separately in doses large enough to produce the desired effect, it will first blister the entire mucous

membrane lining the digestive tract and will not be absorbed into the blood. The intimate mixture of emulsion of these ingredients formed by the above described process can, however, be administered together with the usual feed without any harmful results whatever.

It has been found that the solution of sodium hydroxide and pine tar oil mixed as above even before the addition of the turpentine has valuable properties and will serve to kill many dangerous forms of bacteria. It is also to be noted that pine tar oil as a natural product contains quite a large number of separate chemical compounds, among which the following are the more important:

Toluene,  $C_7H_8$ ; xylene,  $C_8H_{10}$ ; mesitylene and pseudocumene,  $C_9H_{12}$ ; phenol,  $C_6H_5.OH$ ; cresol,  $CH_3.C_6H_4.OH$ ; creosol,  $C_8H_{10}O_2$ ; guaiacol,  $C_7H_8O_2$ ; phlorol,  $C_8H_{10}O$ ; methylcreosol,  $C_9H_{12}O_2$ ;

It is, therefore, evident that by mixing these various chemicals in the proportions in which they occur in pine tar oil, a synthetic pine tar oil may be produced which is a full equivalent of the natural form. The precise proportions of these various substances present in pine tar oil will vary considerably according to the samples of the oil and considerable latitude is possible in the formation of the synthetic oil. It is, therefore, to be understood that whereas the claims refer to pine tar oil, they are intended to include both the natural and synthetic forms.

After the steps above described of the process have been carried out there is added to the solution a fluid extract of chenopodium which is made by using redistilled turpentine as a solvent or menstrum and following the lines laid down by the usual authorities for the manufacture of fluid extract. The use of redistilled turpentine as a solvent to extract the active principle from the chenopodium seed is believed to be new.

This is particularly important since when the redistilled turpentine is used as a solvent instead of alcohol, the resulting fluid extract of chenopodium can be added to the above described emulsion of sodium hydroxide, pine tar oil and turpentine and will mix with the same perfectly.

It is to be understood that the figures above given as to the relative proportions of the ingredients, the time occupied in the various steps of the process, and the speed at which the electric mixer or its equivalent device is operated, may all be varied within reasonable limits without in any way departing from the spirit of the invention and that these figures are given as illustrative and not as limiting the invention. The process and its resultant product are described in the preferred form. Such variations as mentioned may be made and other ingredients may be added if desired for any purpose which does not modify the medicinal effect of the compound without departing from the spirit of the invention. It may also be noted that the compound formed as above described is very concentrated and must be greatly diluted before its actual use. In general the invention is to be re-

garded as limited by the scope of the appended claims.

I claim as my invention:

1. A composition of matter comprising caustic alkali, pine tar oil, and redistilled turpentine; all of these ingredients being finely divided and intimately mixed to form an emulsion, and a fluid extract of chenopodium extracted with redistilled turpentine.

2. A composition of matter comprising about two parts of a caustic alkali solution, one part of pine tar oil, and one part of turpentine; all of these ingredients being finely divided and intimately mixed to form an emulsion and a fluid extract of chenopodium extracted with redistilled turpentine.

In testimony whereof, I have hereunto subscribed my name.

RUFUS LEE HARDY.