

## UNITED STATES PATENT OFFICE

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## ANÆSTHETIC

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My invention relates to improvements in hyp-  
notic compounds, particularly analgesics and  
anæsthetics. In the administration of anæ-  
sthetics or analgesics, particularly for obstetrical  
operations, the usual practice has been to await  
until a certain amount of dilation of the cervix  
has taken place before administering the particu-  
lar anæsthetic. It is common knowledge that the  
labor pains prior to the aforesaid dilation are  
excruciating but may be relieved by the use of  
morphine or similar narcotics. However, such  
administrations are apt to have an undesired  
effect upon the patient and the child and does not  
always serve the intended purpose.

It is therefore one of the objects of my inven-  
tion to provide a hypnotic compound which may  
be administered to the patient in the first stage  
of labor to permit uterine contractions and relieve  
the initial pains as well as the pains in the other  
stages of labor.

Still another object of my invention is to pro-  
vide an anæsthetic which may be easily and safely  
administered to the patient and which tends to  
eliminate the nervous condition which sometimes  
accompany the administration of anæsthetics.

Another object of my invention is to provide an  
anæsthetic which may be administered during the  
first stages of labor and which is sufficiently last-  
ing in its effects to maintain the patient under  
its analgesic influence throughout the entire deliv-  
ery.

Still other objects and uses of my new com-  
pound will become apparent from the following  
description thereof.

I am aware that ether and oil with quinine have  
been heretofore administered to the patient by  
rectal instillation for obtaining analgesia; how-  
ever, as previously stated, this administration  
cannot be applied with success to the patient un-  
til after the first stages of labor have passed be-  
cause of the short duration of its effect. I am  
also aware that barbiturates have been used with  
inhalation anæsthetics. I believe the use of the  
barbiturates in the manner which I am about to  
disclose, is distinctly new. There are at the pres-  
ent time, a number of commercial barbiturates,  
some of which better suit themselves than others,  
to my particular compound. Among the more  
useful barbiturates I have used are the following:

Nembutal (acid form)—ethyl (1-methyl butyl)  
barbituric acid.

Neonal—n-butyl ethyl barbituric acid.

Allonal—allyl isopropyl barbituric acid plus  
amidopyrine.

Dial—diallyl barbituric acid.

Phanodorn — cyclohexenyl ethyl barbituric  
acid.

Amytal—isoamyl ethyl barbituric acid.

Ipral (acid form)—ethyl isopropyl barbituric  
acid.

Pernokton—secondary butyl bromallyl barbi-  
turic acid.

Phenobarbital—phenyl ethyl barbituric acid  
(Luminal).

Barbital—diethyl barbituric acid (Veronal).

In actual use, the patient is first given enemas  
until the return is clear, after which the barbi-  
turic preparation is instilled. The instillation of  
the barbituric compound may be preceded by an  
ounce of plain oil, also vaseline is applied to the  
anus to prevent possible irritation should the  
compound be expelled. A slow uniform rate of  
instillation is established and the mixture per-  
mitted to enter the colon between uterine con-  
tractions.

The compound may include a mixture of  
mineral oil, ether, quinine and a barbiturate. The  
oil used may be either a mineral oil or vegetable  
oil such as olive oil. However, mineral oil is pre-  
ferred as it does not tend to turn rancid. It is  
also to be understood that the proportions of  
the ingredients in the compound may be varied  
to procure different degrees of anæsthesia.

I have observed in my various experiences that  
the solution can be made either with or without  
the aid of solvents other than the ether. In  
some ether the alcohol content is relatively high  
and therefore the quinine is more expeditiously  
put into solution. I also find that the quinine  
may be more quickly put into solution by using a  
small amount of other solvents, such as ethyl  
alcohol, and when so used, I find that approxi-  
mately three fluid drams of ethyl alcohol in a  
four fluid ounce solution of the compound is suffi-  
cient for all purposes of solubility.

I have found that a mixture of 1½ ounces  
mineral oil, 2½ ounces ether, 20 grains quinine  
alkaloid, together with a mixture of two barbitu-  
rates which are known to the profession as  
nembutal (acid form) and neonal, which barbi-  
turates are ethyl (1-methyl butyl) barbituric  
acid, and n-butyl ethyl barbituric acid respec-  
tively, in the proportion of 8 grains nembutal  
(acid form) and 5 grains neonal produce a very  
satisfactory result. I find that a combination  
of two or more barbiturates as described is some-  
times desirable. The effect is not additive but  
due to the synergetic action between the two bar-  
biturates, each barbiturate enhances the action  
of the other, causing a substantially different

effect than is found from the use of either one alone. In the foregoing example ethyl (1-methyl-butyl) barbituric acid is representative of a quick acting barbiturate which takes effect very shortly after administration, whereas the other is representative of a relatively slow acting barbiturate which in this instance may involve twice as much time before it becomes effective. This mixture may be administered as previously described and is particularly adaptable for analgesia during childbirth. Upon instillation of the above dosage, the average patient is susceptible to from 10 to 18 hours of complete amnesia and analgesia.

A compound made in accordance with my invention, from which the quinine is omitted may also be used for surgery. A particular combination for such use may be  $2\frac{1}{2}$  ounces ether,  $1\frac{1}{2}$  ounces mineral oil and 10 grains of nembutal. It is very apparent that the increased proportions of the barbiturate will give more complete anesthesia. The dosage may be regulated according to body weight, a patient weighing 130 pounds or over receiving the full 4 ounce mixture; those between 100 and 130 pounds receiving approximately  $\frac{3}{4}$  of the contents and those under 100 pounds receiving  $\frac{1}{2}$  of the contents.

In actual use it has been found that the patient usually becomes drowsy within 30 minutes and gradually goes into a deep slumber. In time, (1 hour) most patients can be aroused but with great difficulty and the uterine contractions appear to be accelerated rather than interfered with. The dosage of the barbiturates may in some cases be regulated in such a manner that a supplemental anesthesia may be required. The use of a compound as described, eliminates the use of drugs which may seriously affect the baby or patient. It will also reduce the post operative need of narcotics. The pulse, respiration and blood pressure are not materially affected. The blood loss is not affected. Uterine contractions are not interfered with and the patient has no recollection of labor pains. No undesirable after effects have been observed.

Having thus described my compound and its method of use, I am aware that the exact proportions of the various ingredients may be varied, and should be varied to suit different cases, but

that such variation is well within the precepts of the invention and such as may be understood to those experienced in such matters and does not depart from the spirit of my invention nor the scope of the appended claims.

I claim:

1. A hypnotic compound for rectal instillation comprising a solution of oil, ether and a barbiturate.

2. A hypnotic compound for rectal instillation comprising a mixture of oil and ether and an oil and ether soluble barbiturate.

3. A hypnotic compound for rectal instillation comprising a mixture of mineral oil and ether and an oil and ether soluble barbiturate.

4. A hypnotic compound for rectal instillation comprising a mixture of mineral oil and ether and a barbiturate.

5. A hypnotic compound for rectal instillation comprising a mixture of oil, ether and two or more of the barbiturates.

6. A hypnotic compound for rectal instillation comprising a mixture of oil, ether and oil and ether soluble barbiturates.

7. A hypnotic compound for rectal instillation comprising a mixture of oil, ether, and ethyl (1-methyl butyl) barbituric acid and n-butyl-ethyl-barbituric-acid.

8. A hypnotic compound for rectal instillation comprising a mixture of mineral oil, ether and ethyl (1-methyl butyl) barbituric-acid.

9. A hypnotic compound for rectal instillation comprising a mixture of mineral oil, ether and n-butyl-ethyl-barbituric-acid.

10. A hypnotic compound for rectal instillation comprising a mixture of mineral oil, ether and ethyl (1-methyl butyl) barbituric-acid and n-butyl-ethyl-barbituric-acid.

11. An analgesic comprising a mixture in the proportions—mineral oil  $1\frac{1}{2}$  ounces, ether  $2\frac{1}{2}$  ounces, and ethyl (1-methyl butyl) barbituric-acid 8 grains and n-butyl-ethyl-barbituric-acid 5 grains.

12. A hypnotic compound for rectal instillation comprising a mixture of mineral oil, ether, secondary-butyl-bromallyl barbituric acid and allyl-isopropyl-barbituric acid.

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