

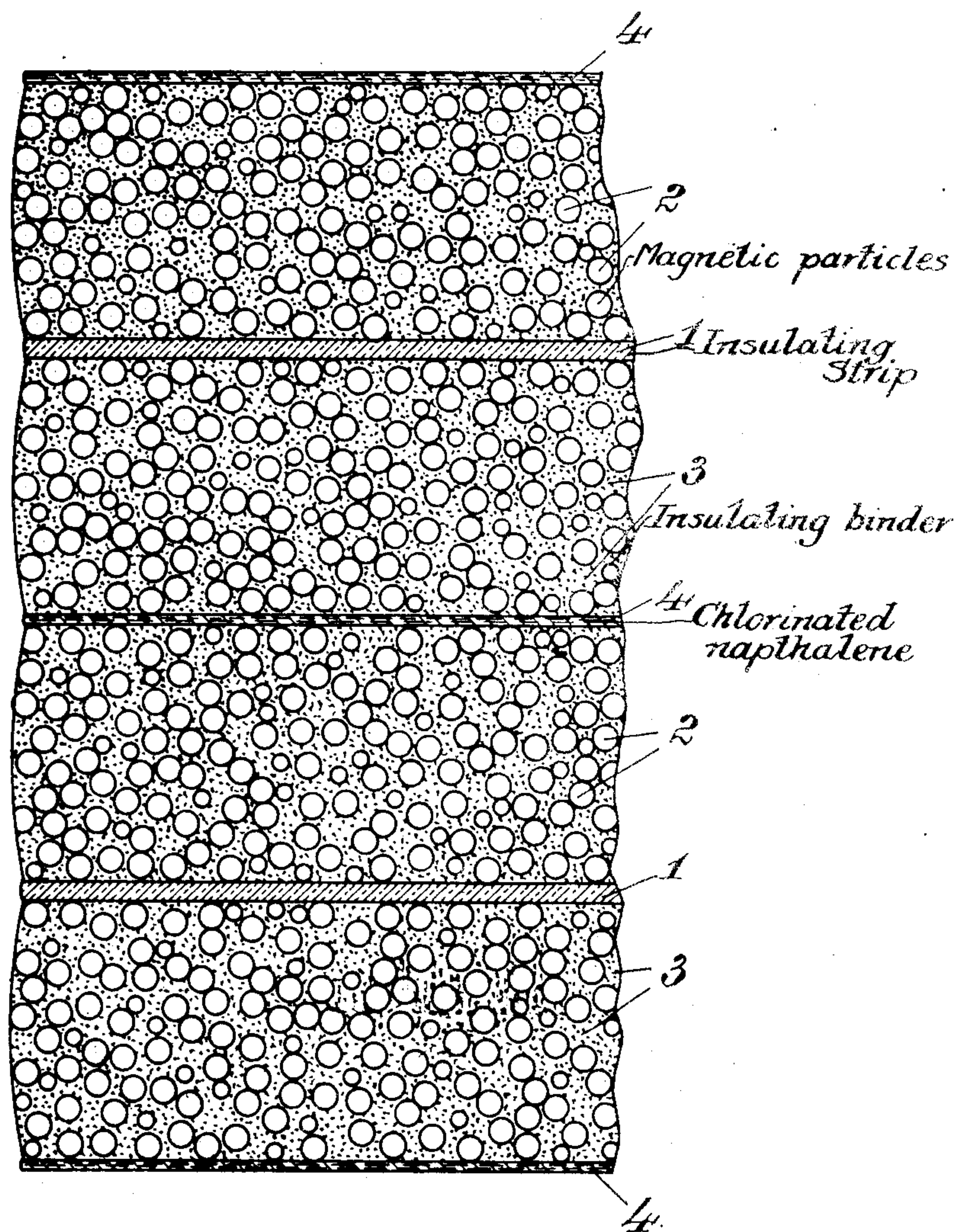
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ADHESIVE FOR MAGNETIC CORES FORMED OF MAGNETIC LAYERS

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ADHESIVE FOR MAGNETIC CORES FORMED
OF MAGNETIC LAYERS

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6 Claims. (Cl. 175—21)

This invention relates to an improvement in magnetic material comprising a plurality of laminæ, each formed of an insulating sheet coated with magnetic particles, said laminæ being united by an adhesive. Such laminated magnetic material is specially used for making magnetic cores for high frequency coils, as referred to in my prior application, Serial No. 637,156, filed October 10, 1932.

It is an object of my present invention to improve the mechanical and heat stability of said laminated magnetic material and to facilitate the working, more particularly the stamping, of same.

Another object of the invention is to facilitate the joining of the superposed magnetic layers.

According to this invention the magnetic material comprises a plurality of laminæ, each formed of an insulating sheet coated with magnetic particles, said laminæ being united by a solid chlorinated hydrocarbon having a melting point between 90° and 140° C.

The drawing shows greatly enlarged a partial cross section of a magnetic core constructed in accordance with my invention.

Each lamina comprises an insulating sheet 1 which is coated with a magnetic layer, comprising magnetic particles 2 and an insulating binder 3. A plurality of said laminæ are united by the adhesive 4, consisting of a solid chlorinated hydrocarbon, more particularly of a solid chlorinated naphthalene, having a melting point between 90° and 140° C.

In the practice of my invention I pass said laminæ, comprising a long strip of insulating sheet 1, such as paper, and a composite coating of magnetic material 2 and an insulating binder 3 on both sides of said insulating sheet 1, through a heated bath of said chlorinated solid naphthalenes thus obtaining a tenuous layer 4 of said naphthalene on both sides of said laminæ. A plurality of laminæ, which are so prepared, are then united under pressure. Due to the particular crystal structure of such adhesives, and their consequent high elasticity and toughness, the tenuous layers thereof will cause the laminæ to adhere to each other very tightly so that very solid plates are obtained, which will not tend to separate into the individual layers, as will often occur when using other adhesives. The plates so obtained may be stamped like sheet metal, producing no waste.

It is not necessary to use heat for joining the laminæ, although it may be useful in special cases to use heat additionally.

The magnetic cores are built up from superposed stampings cut from these plates, said stampings again being united by pressing. The tenuous layer of the adhesive, present on the surface of each stamping, will cause the stampings to adhere to each other without applying heat or an additional adhesive.

I claim:—

1. A magnetic material comprising a plurality of laminæ, each comprising an insulating sheet coated with magnetic particles, said laminæ being united by a solid chlorinated hydrocarbon having a melting point between 90° and 140° C.

2. A magnetic material comprising a plurality of laminæ, each comprising an insulating sheet coated with magnetic particles, said laminæ being united by a solid chlorinated naphthalene, which is liquid in hot state.

3. A magnetic material comprising a plurality of laminæ, each formed of an insulating sheet coated with magnetic particles mixed with an insulating binder, said laminæ being united by a solid chlorinated naphthalene, which is liquid in hot state.

4. A magnetic core comprising a plurality of laminæ, each formed of an insulating sheet coated with magnetic particles, mixed with an insulating binder, said laminæ being united by a solid chlorinated naphthalene, which is liquid in hot state.

5. A method for joining core laminæ of magnetic powder cores, made of insulating sheets coated on both sides with a layer of magnetic particles, comprising coating said laminæ with solid chlorinated naphthalenes which are liquid in hot state and joining said coated laminæ under pressure.

6. A method of forming magnetic core elements for high frequency use, which comprises applying a thin film of liquid chlorinated naphthalenes, which are solid at normal temperatures, to the surface of core laminæ made of insulating sheet coated with magnetic particles in an insulating binder, uniting a plurality of such coated laminæ under pressure to obtain a firmly united laminated plate, and stamping out the core elements from said laminated plate.

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