

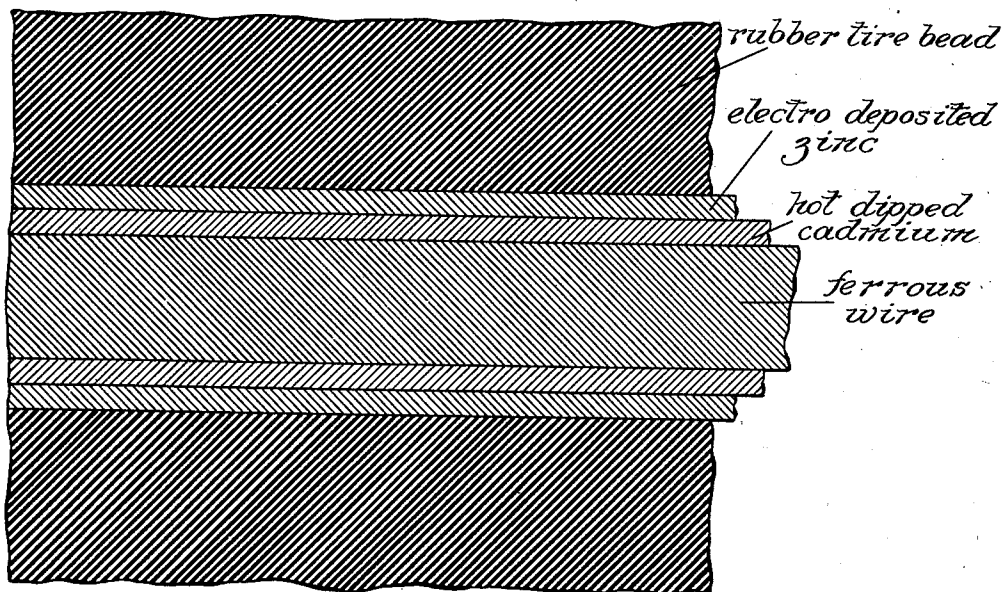
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METHOD OF COATING METAL

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METHOD OF COATING METAL

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653,549. Divided and this application Septem-
ber 8, 1934, Serial No. 743,281

6 Claims. (Cl. 91—70)

This invention relates to improvements in method of coating metal.

In the Crapo Patent No. 1,984,335, issued Dec-
11, 1934, is described a method of coating a fer-
rous article by hot-galvanizing it with zinc, and
over that depositing by some other method an
additional coating of zinc or a coating of cad-
mium.

It has now been discovered that a corrosion-
resisting coating may be produced which has con-
siderable advantage under certain circumstances,
particularly with respect to the type of corrosion
of which the salt spray is typical, by applying
a hot-dipped coating of cadmium, and then elec-
troplating a coating of zinc thereon.

The invention is particularly applicable to
coating strands of wire to be used in reinforcing
the bead of the tire. The wire when so used com-
monly acts as a tension-member, and is im-
bedded in a rubber or rubber compound. When
so used, the wire is exposed to corrosive and rust-
ing agents, particularly to moisture which may
seep into the tire.

The drawing shows in diagrammatic form an
embodiment of my invention.

In accordance with the invention, a metal, for
example wire suitable for use in tire beads, is
first hot-dipped to provide a coating of cadmium.
This may be done, for example, by dipping the
wire in hot molten cadmium. A coating of zinc
is then put over the first coat by electrolysis or
by electroplating, preferably by electroplating.

Not only does a double coating applied by the
above-mentioned method give very good cor-
rosion resistance, but it has been discovered that
the electro-coat tends to fill in the depressions
in the lower cadmium coat and thus produce a
uniform and smooth coating. This is wholly
unexpected.

If desired, copper or other suitable material
may be applied over the corrosive-resistant coat-
ing in order to increase the adhesiveness of the
wire to rubber. It is frequently desirable to
apply such a coating when wire is used as a rein-
forcement for a tire bead.

The new process herein described is especially
useful in procuring a coating of a desired and
uniform thickness. In practice, I give the wire
a hot coat first, and preferably I wipe this thin.

In the next step, when the coating is put on by
electroplating, the operation can be continued
to give exactly a desired thickness. At the same
time the coating acquires a smooth, uniform
character which is free from holes, defects, and
the like.

The foregoing description has been given for
clearness of understanding only, and no un-
necessary limitations are to be understood there-
from, but the appended claims should be con-
strued as broadly as permissible in view of the
prior art.

This application is a division of my co-pending
application Serial No. 653,549, filed January 25,
1933.

What I regard as new and desire to secure by
Letters Patent is:

1. The process of coating a ferrous article which
consists in applying to it by the hot-dip process
a coating of cadmium, and electrodepositing
thereon an outer coating substantially wholly of
zinc.

2. The method of coating a metal to increase
its corrosion resistance comprising first apply-
ing to it molten cadmium, and then applying
a second coating of zinc by electroplating over
the first coating.

3. The method of producing a ferrous tire-
bead reinforcement wire of uniform corrosion-
resistance which comprises first coating a ferrous
wire with cadmium by the hot-dip process, and
then electroplating zinc upon the hot-dipped
wire to produce a uniform coating of desired
thickness.

4. A coated ferrous article, comprising a fer-
rous base having a hot-dipped coating of cadmium
thereon, and over that an electrodeposited coat-
ing substantially wholly of zinc.

5. A coated ferrous wire, comprising a ferrous
base wire having a hot-dipped coating of
cadmium thereon, and over that an electrode-
posited coating substantially wholly of zinc.

6. A coated tire bead wire comprising a ferrous
base wire having a hot-dipped coating of cadmium
thereon, an electrodeposited coating substantially
wholly of zinc thereon, and having a coating of
rubber vulcanized thereto.

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