HOOD *ET AL. V.* BOSTON CAR SPRING CO. *ET AL.*

Circuit Court, D. Massachusetts. March 1, 1889.

PATENTS FOR INVENTIONS—INFRINGEMENT—COATING METALS WITH RUBBER.

The invention described in letters patent of May 6, 1879, to Isaac Adams, Jr., for an improvement in coating metallic articles with rubber, consists in interposing between the metallic article and the rubber a thin film of any metal, preferably copper, which at the temperature of vulcanization has a considerable tendency to unite with the sulphur in the rubber. In view of the fact that the patent proceeds on the theory that the film must be very thin, and that copper is the best metal, because a firm cohesion may be obtained from a very thin film of it, and in view of the opinion on granting an injunction, (21 Fed. Rep. 67,) recognizing such to be the theory of the invention, *held,* that defendants are not in contempt by using an alloy of copper and zinc, which need not be thin.

In Equity. On motion for ah attachment for contempt.

T. W. Clarke, for complainants.

John L. S. Roberts, for defendants.

COLT, J. This is a motion for an attachment for contempt. The complainants contend that the defendants are violating an injunction order of this court. The question turns upon whether the defendants are using the Adams process for covering metallic articles with rubber, described in his patent of May 6, 1879, which patent has been sustained by this court, and the defendant adjudged to have infringed. 21 Fed. Rep. 67. In order to determine the scope of the Adams patent, it is well to refer to the opinion of Mr. Justice GRAY in this case. He begins by referring to the specification, which states that great difficulty has been experienced in making rubber adhere securely to metals, and that by the patented improvement a firm adhesion may be obtained. The invention consists in interposing between the metallic article and the rubber a film of any metal which, at the temperature of vulcanization, has a considerable tendency to unite with the sulphur always contained in the rubber compounds. Of the metals possessing such tendency, the films of which may be interposed, the most suitable are copper and silver, and of them copper is the easiest, as well as the cheapest, to apply. Lead and zinc may likewise be used; but there is greater difficulty in obtaining a suitable deposit of these metals for the interposing film. The opinion proceeds:

"The specification throughout insists upon the necessity of making the interposed film very thin. It states that the Dim must not be of the same metal as the article on which it is deposited; that it may be produced either by dipping or by electro-plating; that in covering iron, steel, or tin articles with copper, the method of dipping is preferable, and the article must be immersed in a weak solution of sulphate of copper just long enough to produce a bright, copper-colored deposit; and that, when the method of electro-plating is adopted, great care should be taken that too thick a film be not deposited, and a film

such as is known as coloring' or 'striking' is sufficient. * * * According to the evidence, the peculiar value of this invention consists in the very thin film of copper or other suitable metal which, in the process of vulcanizing,

is acted on by the sulphur contained in the rubber, so as to unite or combine with the sulphur, and be absorbed into the rubber, and to hold together the rubber and the metal which has been coated with the film, and make the rubber stick so fast to that metal that it cannot be forced off without tearing the rubber itself. If the film of copper is too thick, the whole of it is not absorbed into the rubber, and so much of it, modified by the action of the sulphur, as is not absorbed, has so little coherence that the rubber may be readily detached * * * Each of Sterne's three patents speaks only of brass, a compound of copper and zinc, as the metal to be deposited; and the complainants contend that even a very thin film of brass would, by reason of securing a less perfect adherence, differ from the invention of Adams, in which the film is of a single metal. But it is unnecessary to consider that point, because it is quite clear that neither of the Sterne patents contemplates or points out the necessity of making the film very thin, or gives any directions by which a person of competent skill would be led to make the film so thin as to produce the result described in and obtained by the patent of Adams."

The meaning of this decision seems to me to be clear. The Adams patent, as interpreted by the court, is not confined to copper alone, though that metal may be preferable, but the gist of the invention lies in pointing out the necessity of having the film very thin, and giving directions by which a person of competent skill would be led to make the film so thin as to produce the results described; and herein lies the main distinction between the Adams and the prior patents of Sterne. As shown by the record in the case and the opinion of the court, the theory which lies at the basis of the Adams invention is this: that in order to produce adhesion between the rubber and the metal the film of interposed metal must be *very* thin, and that copper produces the best film, because you obtain a firm cohesion from a very thin film of that metal. Now, it is clear to my mind that if the defendants continue to use the thin film of copper, or of any metal, in the manner described, and to produce the results obtained by the Adams patent, they are, under the decision and decree of this court, guilty of contempt.

But the difficulty of the complainants' position is this: the defendants do not deny that the Adams process may have merit, but they contend that rubber will adhere to an alloy of copper and zinc, and to iron plated therewith, no matter how thick the plating may be; and that it will not adhere to copper, nor to iron plated with copper, unless an exceedingly fine film is deposited. They further say that since the decision in this case they have not used a solution of copper, but of brass, or an alloy of copper and zinc.

If this position of the defendants be true, it undermines, to some extent at least, the great merit of the Adams patent. And I must say that upon the whole evidence before me, and an examination of the exhibits produced, the defendants have made out with a fair degree of certainty that the thin film called for by the Adams patent is not necessary when an alloy of copper and zinc is used; in other words, that cohesion under these

conditions does not depend upon the thickness of the plating. I am also of opinion that the defendants have shown by the weight of evidence, strengthened by circumstances and probabilities, that they do not

use the copper solution or the process contemplated by the Adams invention, but that they do employ ah alloy of copper and zinc which is deposited by the ordinary electro-metallurgical process, and not with a view, because not necessary, of obtaining the very thin film called for by the Adams patent. Upon the facts as they appear to me in this case, it is manifestly my duty to deny the present motion. Motion denied.