

UNITED STATES PATENT OFFICE.

GOTTLIEB KOLB, OF MANNHEIM, GERMANY.

COMPOSITION FOR HARDENING STEEL.

SPECIFICATION forming part of Letters Patent No. 744,208, dated November 17, 1903.

Application filed March 17, 1902. Serial No. 98,703. (No specimens.)

To all whom it may concern:

Be it known that I, GOTTLIEB KOLB, a subject of the King of Württemberg, residing at Mannheim, in the Grand Duchy of Baden, German Empire, have invented a new and useful Composition for Hardening Steel, of which the following is a specification.

The subject of the present invention is a composition for hardening steel; and it consists of colophony, copper vitriol, prussiate of potash, and linseed-oil.

By treating steel of whatever kind with this composition a degree of toughness and hardness is imparted to it such as has hitherto been quite unattainable, and this is a point of the greatest importance, more especially in the manufacture of tools. Inferior cheap quality steel receives the above-named characteristics alike with fine high-priced steel, so that the latter can be replaced by an inferior kind. Burned steel if treated with the new composition again attains its original hardness and toughness. Indeed, it possesses these qualities in a higher degree than at first, so that it need no longer be discarded as waste material.

By means of the new composition an ordinary drill can be rendered so hard that the thickest glass and the hardest metals can be readily drilled with it without the tool being appreciably worn.

In preparing the new composition I min-

gle the already-mentioned ingredients to form a firm mass. The best proportions I find in general to be seven hundred grams of colophony, one hundred grams of copper vitriol, three hundred grams of prussiate of potash, and one hundred grams of linseed-oil.

Experiments show that the agent principally active in producing the desired result is the copper vitriol, which should be contained in the mixture as nearly as possible in the proportion stated. The proportions of the other individual ingredients may be slightly varied among themselves, according to the special circumstances of the case.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

The herein-described composition of matter for hardening steel and rendering it tougher; consisting of substantially seven hundred grams of colophony, one hundred grams of copper vitriol, three hundred grams of prussiate of potash and one hundred grams of linseed-oil, as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

GOTTLIEB KOLB.

Witnesses:

H. W. HARRIS,
JACOB ADRIAN.