

# UNITED STATES PATENT OFFICE.

JAMES J. FAULKNER, OF MEMPHIS, TENNESSEE, ASSIGNOR TO THE STANDARD COTTON SEED COMPANY, OF ARKANSAS.

PROCESS OF COATING IRON OR OTHER METALLIC SUBSTANCES WITH EMERY.

SPECIFICATION forming part of Letters Patent No. 557,065, dated March 24, 1896.

Application filed January 31, 1896. Serial No. 577,603. (No specimens.)

*To all whom it may concern:*

Be it known that I, JAMES J. FAULKNER, a citizen of the United States, residing at Memphis, in the county of Shelby and State of Tennessee, have invented certain new and useful Improvements in Processes of Coating Iron or other Metallic Substances with Emery or an Emery Compound; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in abrading materials; and it consists in an improved process of coating iron or other metallic substances with emery or an emery compound, which will be hereinafter fully described and particularly set forth in the claims.

The object of my invention is to provide a process of coating iron or other metallic substances with emery or an emery compound in such a manner that the emery or emery compound will not become separated from the surface upon which it forms a coating when used under operative conditions which result in raising the iron or other metallic substance to which the emery or emery compound is attached to a high degree of temperature.

The processes which have been heretofore developed in the art have for the most part not enabled iron or other metallic substances to be coated with emery or an emery compound in a sufficiently substantial manner to permit the completed article to be used in machines which run at high speeds, and in which the abrading-surfaces exert so violent an abrading action as to result in their being heated to a high temperature. I have discovered this to be the case in the construction and operation of machines for delinting cotton-seed. In these machines a revolving abrading-surface is employed, which operates within an inclosing casing, and in which its action scours the lint from the surface of the cotton-seed fed into the inclosure in which the abrading operation is taking place.

During the course of the delinting opera-

tion the abrading-surfaces are frequently raised to a temperature closely approximating 400° Fahrenheit, and I have been unable by the use of the processes now known in the art to secure emery or an emery compound to iron or other metallic substances sufficiently firmly to enable the same to be used in practical operation.

The process which forms the subject of this application has been devised with special reference to coating the abrading-surfaces of a cotton-seed delinter with emery or an emery compound, thus obviating the necessity of the use of the holding devices which are now employed to secure emery-blocks to the revolving abrading-surfaces. My process may, however, be used for the coating of iron for use in other types of machines or for use in any manner in which the completed article may profitably be employed.

The essential feature of my process consists in heating the iron or other metallic substance and dipping it into thickened linseed-oil or Japan varnish, so as to cause the formation thereupon of a gum or coating before coating the same with the emery or the emery compound which is to be used.

My process is carried out in the following manner:

First. Heat the iron or other metallic substance which is to be coated to a temperature of about 200° Fahrenheit.

Second. Dip the heated iron into boiled or thickened linseed-oil. The oil is preferably also heated, though this is not essential, as the heat of the iron will be sufficient to cause the film of oil which adheres thereto to become rapidly heated. This results in the formation on the surface to be coated of a thick gum.

Instead of using linseed-oil Japan varnish may be used, or any other substance possessing like characteristics. If desired, also oxide of iron, lampblack, ground silicate, alabastine, flour of emery, plumbago, or other substances possessing power to emit the gases generated in the baking may be mixed with the linseed-oil or Japan varnish before the heated iron is dipped into the same. This re-

sults in the coating of the iron with an emery compound instead of simply emery, as in the ordinary carrying out of my process.

5 Third. Sprinkle emery on the heated iron until the surface is completely covered with the same.

10 Fourth. Bake the emery-coated iron for about six hours at a temperature preferably not exceeding 200° Fahrenheit. If the temperature be raised markedly above this point, the oil which adheres to the surface of the iron is apt to become decomposed and lose the qualities which render it suitable for this process.

15 Fifth. Redip the iron into the thickened linseed-oil or other like substances, as stated in the second step of the process.

20 Sixth. Sprinkle emery on the heated iron as in the third step of the process. This operation is to be continued until the coating of emery has obtained the desired thickness, and then

25 Seventh. Bake the completed article for from twelve to thirty-six hours at a temperature which is gradually increased from 200° Fahrenheit to about 400° Fahrenheit. This will insure the complete hardening of the emery or emery compound upon the iron.

30 The coating of emery or of an emery compound upon the iron or other like substance which is thus obtained possesses great tenacity and firmness, and will not become separated from the iron or other metallic substance.

Having thus fully described my invention, 35 what I claim as new, and desire to secure by Letters Patent, is—

1. That improvement in the art of coating iron and other metallic substances with emery or an emery compound which consists in: 40 first, heating the iron or other metallic substance to be coated; second, dipping the heated iron into an oil, such as linseed-oil; third, sprinkling emery upon the coated surface; fourth, baking the coated surface until the 45 emery coating becomes hard, substantially as described.

2. The herein-described process of treating iron and other metallic substances with emery or an emery compound, which consists in: 50 first, heating the iron or other metallic substance; second, dipping such heated iron into an oil, such as linseed-oil; third, sprinkling emery upon the heated iron; fourth, baking the coated surface at a low degree of tem- 55 perature until the emery coating has become sufficiently hard to adhere to the metallic surface; fifth, redipping the iron in linseed-oil; sixth, sprinkling the emery upon the redipped surface; and seventh, baking the coated sur- 60 face until the emery coating has become hard.

In testimony whereof I affix my signature in presence of two witnesses.

JAMES J. FAULKNER.

Witnesses:

J. F. HUDSPETH,  
HUGH B. CULLEN.