UNITED STATES PATENT OFFICE.

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POLISHING COMPOUND FOR FINISHING TABLE CUTLERY.

1,422,707. Specification of Letters Patent. Patented July 11, 1922.

No Drawing. Application filed October 21, 1920. Serial No. 418,546.

To all whom it may concern:

Be it known that I, GUSTAV F. HEMMING, a citizen of the United States, residing at New Haven, in the county of New Haven and State of Connecticut, have invented certain new and useful Improvements in a Polishing Compound for Finishing Table Cutlery; 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.

This invention relates to certain new and useful improvements in polishing compound for finishing table cutlery, more especially one-piece high grade steel knives, and it has for an object a compound which is employed to simplify and expedite the polishing operation through mechanical means rather than manual effort and labor.

This invention also resides in the utilization of waste products from knife polishing operations as the base for the improved polishing compound.

The present day method of finishing table cutlery knives consists, firstly, in grinding the blade in an automatic machine and hand-grinding the back, neck, bolster, rim and handle. Following this grinding, three separate and distinct hand polishing operations are required to remove the marks caused by the coarse grinding wheel, each operation being performed on a separate wheel. The first wheel is, of course, emery and is followed by finer grades of emery on the succeeding wheels to prepare the several parts of the knife for the final polishing operation called "glazing". For the glazing step, very fine emery is mixed with beeswax and tallow into a semi-solid cake which is held against the glazing wheel to coat or cover the latter therewith. Frequent application of the glazing cake to the wheel is essential since the friction of the knife against the rapidly rotating wheel causes more or less of this coating compound to fly off, and this escaped compound in large establishments, amounts to tons in a short time and is then thrown away as a waste product.

Attempts have been made to recover this waste product for further use in glazing but failed because it would not produce the same finished surface as the original compound but rather show more or less fine scratches which are clearly observable on a highly polished knife surface and which are due to the fine particles of steel intermingled with this waste product.

A further waste product, which has heretofore been thrown away, is obtained from the washing or cleansing step, the same occurring at the completion of each of the polishing operations, including the glazing, and consisting in cleaning the knives in kerosene, benzine, or like liquid, to remove the foreign matter and adhering particles of steel. This cleansing liquid soon becomes too foul for its purpose, and is thereupon discarded as useless.

To simplify and improve upon the former methods, the present method or process has been evolved, after many costly experiments, whereby all of the operations between the automatic grinding and the glazing are eliminated and a finer and more uniformly finished surface for glazing is obtained than is possible by means of the former three intermediate polishing operations.

The improved compound consists of the aforesaid waste products of the glazing compound, and the foul cleansing fluid. The waxy, gritty, glazing substance is mixed with the cleansing fluid, either the foul kerosene or benzine, or both, to about the viscosity of glycerin or liquid paste which will adhere to and yet flow over the surface of the knife. The ground knives are placed within a tumbling barrel and covered with this abrasive compound, and the barrel is then slowly rotated which action will cause the knives to slide over one another without coming into direct contact, steel to steel, and causing dents or nicks due to the protection afforded by said abrasive plastic. This sliding, tumbling movement of the knives over each other, acting against their plastic or semi-liquid covering but not penerating it, completely effaces the mark caused by the grinding wheel and leaves a surface having no definite grain lines or marks and which is rendered capable of taking a high polish by a slight contact with the glazing wheel. Obviously, this exceedingly simplifies the former method which incorporated the intermediate polishing operations that left grain lines requiring a more extended process in thus eliminating three intermediate and expensive polishing operations, and the superior results obtained by means of the improved abrasive waste products, would

indicate the decided advance in the polishing art over the former method.

The minute particles of steel which occur in both waste products and principally in the glazing waste, are most efficacious in removing the grinding marks and adding a polished surface to the cutlery. Experiments have shown that unless the ingredients of the waste products are used, i. e., the waste beeswax, tallow, emery, minute particles of steel, and benzine or kerosene or both, the polished effect is far inferior and extends over a longer period. Thus, a compound of fresh emery, beeswax, tallow, benzine, or kerosene, while too expensive for practical purposes, consumes a longer time to produce a surface far inferior to that produced by the waste compound. Iron particles or filings substituted for the steel will not answer the purpose since they fail to make an impression on high grade steel. The addition of benzine, gasoline, kerosene, or the like ingredients suitable for cutting the beeswax and tallow both failing to serve this purpose, reduce the mass to a plastic state for covering the cutlery with a protective coating. The improved polishing compound is not only inexpensive to procure, but also as to its use and function since a superior finish is obtainable in a shorter period with its use than is possible under the former hand polishing and grinding method.

What is claimed is:—

A polishing compound for use in a tumbling barrel consisting of the waste products resulting from 1st, the glazing of the steel cutlery with fine emery, beeswax, and tallow; and 2nd, the cleansing of the cutlery in a distillate.

In testimony whereof I affix my signature.

GUSTAV F. HEMMING.