

UNITED STATES PATENT OFFICE.

WINSLOW R. PARSONS, OF CHICAGO, ILLINOIS.

COMPOUND FOR SMOOTHING AND POLISHING ARTICLES AND PARTS.

957,999.

Specification of Letters Patent.

Patented May 17, 1910.

No Drawing.

Application filed March 29, 1909. Serial No. 486,454.

To all whom it may concern:

Be it known that I, WINSLOW R. PARSONS, a citizen of the United States, and a resident of Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Compounds for Smoothing and Polishing Articles and Parts, of which the following is a full, clear, and exact specification.

This invention relates to improvements in compounds for smoothing and polishing articles and parts, respectively of steel and brass, or in part both, having angular and curved surfaces, and particularly the edges of which are more or less rough and have burs thereon, which burs must be removed before they can be smoothed or polished to render the parts and articles operative and marketable, as for example in attachments for sewing machines, such as hemmers in one or more pieces, the parts of rufflers, tuckers, embroiderers, screw driver parts, and any and all other small articles stamped from sheet steel or brass and also cast and forged parts of such articles. Prior to my invention the common practice has been and still is to first subject these articles to the action of a tumbling barrel in the presence of pieces of cast iron, steel filings, emery or other gritty substance for removing as far as may be the burs, but with the result that before the burs are removed the plain surfaces are scratched and the curved and deep surfaces are untouched, thereby requiring the removal of the articles from the tumbling barrel and finally smoothing and polishing by hand manipulation on emery wheels, buffers and the like.

The prime object of my invention is a compound which in the presence of the articles subjected to the operation of a tumbling barrel is adapted to remove the burs, smooth their surface and finally polish them within the confines of the tumbling barrel for immediate use or subsequent plating. In other words, the object of my invention is a bur removing, smoothing and polishing compound, capable of and adapted to be used in a tumbling barrel for smoothing rough articles and polishing smooth articles and parts not before possible in a tumbling barrel because of injury thereto and at the same time produce a higher state of smoothness and polish than has heretofore been produceable by the old hand manipulation.

In carrying out my invention I take a

tumbling barrel of any ordinary commonly used construction and fill it full with the articles and parts to be smoothed, including, if the articles are of steel, scraps, cuttings, filings or chopped up pieces of brass, variously shaped, the variety of form depending upon the shape of the articles and parts to be smoothed. For hemmers made in one piece and in which there are various angular and curved surfaces, angular and curved notches and edges, the brass pieces should be of such a size and form that they may in their tumbling project into and be rubbed against such surfaces and also angular corners without becoming locked or fastened therein, other pieces of brass being of such form as to engage and rub against the several flat surfaces, as will be readily understood by those skilled in the operation of tumbling barrels heretofore employed for a great variety of articles and parts. In practice the articles and parts to be smoothed and the brass pieces should be more or less uniformly mixed before or during their introduction into the barrel. To the metal articles so distributed in the barrel I then add an abrasive material of a fineness that will cut the burs and smooth the several surfaces and not coarse enough to scratch any of the surfaces, and this with or without first mixing the abrading material with a neutral oil. For such articles or parts as occur in sewing machine rufflers and other similar small articles stamped out of sheet steel I preferably employ a 180 emery but may employ other abrasives adapted for producing said cutting without scratching, varying the abrasive materials as the metals are hard or soft, thick or thin. When using a tumbling barrel of a capacity of about eight gallons, filled full as before described, four fifths of an ounce of about No. 180 emery and about one pint of neutral oil is used. Any neutral oil may be employed, that is to say any oil substantially free from acid in order that all of the edges and surfaces may be smoothed without injury to the metals, such as is liable to occur by use of an oil in which there is an acid. It will, however, be no substantial departure from my invention to somewhat increase or diminish the quantity of oil and amount and size of the abrasive material, so long as the cutting may take place without scratching the articles and parts, and that the quantity of oil be not too great in proportion to

the amount of abrading material employed. In practice it is however found that when oil and emery are in about the proportions above stated the burs are removed and the articles and parts perfectly smoothed throughout to the highest degree, or in other words by operating the tumbling barrel continuously for about two days' time, it will be found that the articles and parts are entirely free of burs and other roughness of surface. It should however be borne in mind that as the stocks of the articles are thicker and their edges rougher the longer should be continued the operation of the tumbling barrel, and a greater quantity of abrasive material used, and that on the other hand the thinner the stock of which the articles or parts are composed the length of time of the operation of the tumbling barrel is correspondingly shorter. After removing the burs and smoothing the articles and parts, as above described, they are thoroughly cleansed of emery, oil and dirt in the usual manner, and are then polished to the highest possible degree that their surfaces are capable of, for which purpose a neutral oil is introduced, but no emery, the tumbling barrel being then operated from one to three days depending upon the desired degree of polish, that is to say for receiving a nickel plating or being used without such a plating, for it will be understood that all of the surfaces of the article or part is so very smooth before the polish, that while the highest degree of polish may be desirable when not nickel plated a less degree of polish will produce a surface sufficient for perfect nickel plating.

For securing the best possible results in the polishing operation, the tumbling barrel should be filled or substantially filled full with the articles or parts and the pieces of brass for reducing their movement against the barrel and against each other to a degree which will prevent any possibility of their being scratched or indented either by

blows against the barrel or from striking against each other, but at the same time the movements of the steel parts and brass pieces should be sufficiently free to produce a sliding rubbing movement between the articles or parts and the pieces of brass for obtaining a perfect polish without any possibility of any part of their surface being scratched or marred. It should also be observed that the smoothing and polishing effect of pieces of brass upon steel has the same effect upon the brass, and that, therefore, my invention includes the use of pieces of steel for polishing brass articles and parts, and that there are many instances in which both brass and metal articles may be polished without the employment of waste pieces of either of these materials, and furthermore owing to the peculiar abrading and smoothing of these two differing materials when opposed to each other in a tumbling barrel both brass and steel articles or parts may be subjected to the action of a tumbling barrel in the absence of waste of either and the result will be the same even though single articles may be composed in parts both of brass and steel.

Having described my invention what I claim and desire to secure by Letters Patent of the United States is:—

1. A compound for smoothing and polishing metal articles and parts, the base of which consists of pieces of brass and oil.
2. A compound for smoothing and polishing metal articles and parts consisting of pieces of brass and a neutral oil.
3. A compound for smoothing and polishing metal articles and parts consisting of pieces of brass, oil and an abrasive material, substantially as described.

In witness whereof, I have hereunto set my hand and affixed my seal, this 25th day of Mar. A. D. 1909.

WINSLOW R. PARSONS. [L. s.]

Witnesses:

JNO. G. ELLIOTT,
F. E. BROM.