

UNITED STATES PATENT OFFICE.

TIMOTHY D. JACKSON, OF BROOKLYN, NEW YORK.

IMPROVEMENT IN ALLOYS FOR SHEET METAL.

Specification forming part of Letters Patent No. 5,895, dated October 31, 1848.

To all whom it may concern:

Be it known that I, TIMOTHY D. JACKSON, of Brooklyn, in the county of Kings and State of New York, have discovered a new Alloy of Metals and Method of Compounding the Same for a Sheet Metal; and I do hereby declare the following to be a full, clear, and exact description of the materials employed by me in the said manufacture.

The nature of my invention consists in the discovery of a method of compounding certain metals, and the forming of an alloy thereof possessing peculiar properties, and capable of being rolled into sheets and suitable for the manufacture of various articles of utility, susceptible of being cut with dies or worked in the stamping-machine. The peculiar properties referred to as contained in the discovery are great hardness combined with extreme ductility and strength; and the articles to which I find this metal well adapted to the manufacture of, and to which I intend mainly to apply it, are bell-cranks and other like fittings used in the erection of bell machinery in dwelling-houses and like places. Being led by much experience in this business to attempt the discovery of some material by which I should escape the difficulties and uncertainties of the previous modes, and in order to contrast the advantages obtained by my discovery, which has been well attested, I shall state that I believe this is the first metal from which a wrought bell-crank could ever be made which would operate successfully, for the reason that sheet-brass, composition, or copper of sufficient thickness to stand the strain of the work they are to be put to cannot be worked in the cutting-press, there being no dies known which will resist the force requisite to the operations. The bell-cranks hitherto used consist, for the most part, of cast-brass, and then when made heavy enough to stand well are clumsy and cumbersome in their operation, and when used in extensive ranges—such as in the fixtures of hotels and the like—require frequent lubrication with fatty substances. This on the one hand attracts vermin of all sorts, and on the other causes frequent derangement of the operation of the bells by causing several cranks to adhere to

each other when the fats used become corroded and thick, and I have known half a dozen bells to be rung by the pulling of a single cord, thus creating confusion and uncertainty in the signals, and finally are liable to frequent fracture from their brittleness. The alloy discovered by me avoids all these difficulties, as it is capable of being rolled into very thin sheets, and these can be cut by dies into the required shapes for bell-furniture, possessing at the same time lightness and strength and other advantages of wrought metal. The composition likewise requires no lubricating substances to be applied, from the fact of its containing a large dose of tin.

The materials employed by me in making this alloy and the manipulations in forming it are as follows:

Take of copper, sixty-four ounces; zinc, twenty-two to twenty-six ounces; india-tin, one to four ounces. The copper is then reduced in a crucible or melting-pot and the temperature carried to the highest point or points of ebullition. Then add the zinc, stir well, and bring the temperature up again as high as before. The tin is now to be added, stirring well, raise again the temperature, as before. Then pour off through a brush-broom into a tub of cold water. Singular as this last may seem, yet after repeated trials I have found it necessary. Take the metal now and return to the melting-pot, reduce it once more, care being taken to keep it in a state of low fusion; then run it into pigs or bars suitable for the rolling-mill. This metal must be annealed each time it passes between the rollers.

I do not claim alloying copper, zinc, and tin simply; but

I claim—

The application of the manipulations employed for compounding an alloy of metals in the proportions and of the materials herein mentioned for a new sheet metal which shall be capable of being wrought in the cutting-press with dies, &c., substantially as herein set forth and described.

TIMOTHY D. JACKSON.

Witnesses:

JOSEPH P. PIRSSON,
J. L. KINGSLEY.