No. 731,732. PATENTED JUNE 23, 1903.

T. V. ALLIS.

METHOD OF MANUFACTURING THIN METAL SHEETS.

APPLICATION FILED MAY 14, 1902.

NO MODEL.

Fig. 1.

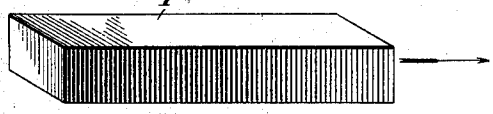


Fig. 2.

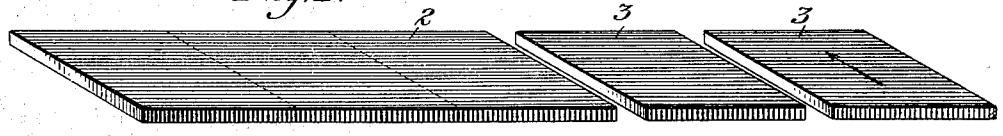


Fig. 3.

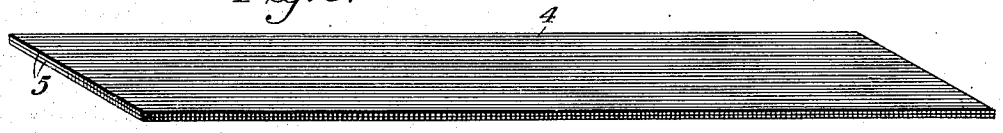


Fig. 4.

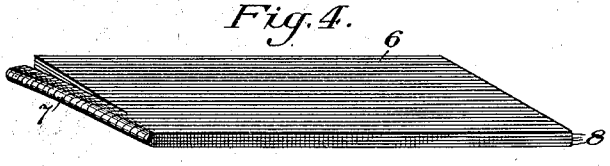


Fig. 5.

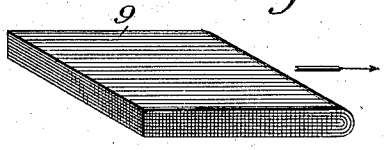
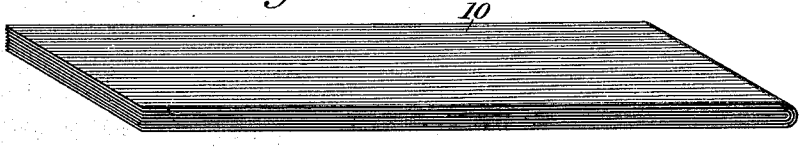


Fig. 6.



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THE NORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

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UNITED STATES PATENT OFFICE.

THOMAS V. ALLIS, OF BRIDGEPORT, CONNECTICUT.

METHOD OF MANUFACTURING THIN METAL SHEETS.

SPECIFICATION forming part of Letters Patent No. 731,732, dated June 23, 1903.

Application filed May 14, 1902. Serial No. 107,343. (No model.)

To all whom it may concern:

Be it known that I, THOMAS V. ALLIS, a citizen of the United States, residing at Bridgeport, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Methods of Manufacturing Metal Sheets, of which the following is a specification.

My invention is an improvement in the art of manufacturing black-plate and similar sheets of iron, steel, or other metals, and is designed to cheapen their production.

The invention will be more readily understood by reference to the accompanying drawings, in which the several figures (numbered 1 to 6) represent the various stages of the process.

In preparing the plates from which the piles are formed the ingot 1 is preferably rolled before it has lost its casting heat into long plates 2, Fig. 2, of three-sixteenths of an inch in thickness, more or less, and the desired width. These plates are then divided crosswise into sections 3, Fig. 2, the length of the sections being approximately the width of the packs to be rolled therefrom. These plates or sections 3 are reduced still thinner preparatory to their final rolling in packs in one of three ways, first, after heating by rolling them as thin as is economical in a pile, as at 4, Fig. 3; or said plates after being heated may be roughed singly, matched, and reduced together in twos at one heat; or after roughing the plates they may be made into piles of any desired number of plates, heated again, and rolled as thin as practicable at a single heat. It is desirable to open or temporarily separate the plates of a pile while hot, as this operation produces plates having smoother contact-surfaces. The number of plates in a pack must now be increased to give a final pack of sufficient thickness to permit reduction to thin sheets. The first step in this direction is to match a pair of these plates, as at 5, Fig. 3, and fold them back upon themselves, thus producing pack 6, Fig. 4, containing double the number of layers of plates.

A prominent feature of this invention is the coating of the plates comprising a pack with a material which will prevent undue adhesion during their reduction. The material which best fulfils this requirement is talc in some of its varied forms. The coating material in a finely-divided state is applied to the surface of the plates to be reduced either as a dry powder or in the form of a paint or wash. It now becomes necessary to separate the doubled packs into individual plates for convenience in applying the material. To accomplish this, the folded or "curled" end of a pack 7, Fig. 4, is sheared off, which separates the pack into individual sections 8 of practically the same length. The same result may be effected without folding the pack by severing it transversely at its center. There is now a number of plates which are covered with a thin film of the material above referred to. This material is of such nature that it adheres loosely to the plates and is easily displaced if the sheets shift on each other and expose the coatings to contact as the packs are handled during the process of manufacture. To prevent this shifting and preserve the thin even coating on all of the contact-surfaces of the plates in the pack and to give a pack having twice the number of layers of plates, the pack is folded back upon itself, producing the final pack 9, Fig. 5, of the requisite thickness for further reduction. Pack 9 is then heated and rolled to a finish, giving a product 10, Fig. 6, containing sheets of the required thickness.

While the method above described for producing the plates to be coated and doubled into packs for final reduction is both practical and economical, other means may be employed—as, for example, those followed in rolling skelp, nail-plate, shovel-steel, and like material.

Having thus described my invention, I claim—

The method of producing black-plate and similar metal sheets, which consists in coating metal plates with a material to prevent undue adhesion during their reduction, assembling them in a pack, folding the pack back upon itself to protect the coatings, heating said pack and reducing it while hot, as set forth.

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

THOMAS V. ALLIS.

Witnesses:
EUGENE A. BYRNES,
CLINTON P. TOWNSEND.