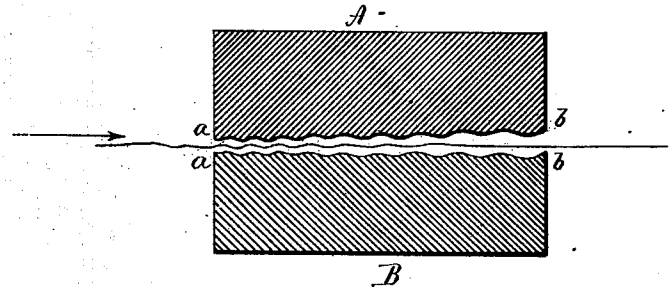
(No Model.)

G. E. SOMERS.

Method of Straightening Sheet Metal.

No. 236,853. **Patented Jan. 18, 1881.**



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GEORGE E. SOMERS, OF WATERBURY, CONNECTICUT.

METHOD OF STRAIGHTENING SHEET METAL.

SPECIFICATION forming part of Letters Patent No. 236,853, dated January 18, 1881.

Application filed August 5, 1880. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. SOMERS, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new Method of Straightening Sheet Metal; and I do hereby declare the following, when taken in connection with the accompanying drawing and the letters of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawing constitutes part of this specification, and represents a sectional view of the dies.

This invention relates to an improvement in the method of straightening sheet metal. Various devices have been resorted to to remove from sheet metal the short bends which unavoidably occur therein in the manufacture of the article. In some cases the metal has been rubbed by mechanical devices; in others it has been drawn through between rolls arranged after the manner of a common wire-straightener. In either case a very considerable amount of power is required to do the work, and the surface of the metal is frequently defaced.

The object of this invention is to overcome the difficulties existing in the methods heretofore practiced; and it consists in the method hereinafter described, and the dies for performing the same.

A pair of dies, A B, are prepared, their meeting surfaces correspondingly grooved, the series of grooves being in the form of a waved line or succession of curves gradually increasing in extent from one side to the other—that is to say, beginning with a short curve at *a*, the curves enlarging until the extreme curve is formed at the opposite edge, *b*, the projecting portions rounded; but the depressed portions need not necessarily correspond to the projecting portions, because it is only the projecting portions that are to operate. These dies are in length made sufficient to take in the sheet of metal required to be straightened. The two dies are preferably arranged the one stationary, the other in a reciprocating holder—as, for instance, in a common power-press or other equivalent mechanism; but both may be made to reciprocate, if desired. The arrangement of the dies, however, must be such that the projections on the one are arranged to strike between the projections on the other, and the face of the two parts must be inclined to each other—that is to say, that the corrugations or ribs will bend the sheet as it enters, and at the opposite edge the ribs will just strike the opposite surfaces, as shown in the drawings. Preferably the sheet enters at the finer corrugations, but it may enter from the opposite edge; but in either case the dies are arranged relative to each other, as above mentioned, and so that the ribs at one edge necessarily bend the sheet, while the ribs at the other edge do not pass beyond the plane of the flat finished surface of the sheet. The line drawn through between the dies represents the sheet. Thus arranged, the sheet metal is passed between the dies when in operation, and so as to strike the metal, one series of ribs or projections on one side, and the other series of ribs or projections upon the other side, but between the ribs on the opposite side. A single impression would slightly corrugate the metal corresponding to—that is to say, the corrugations be nearly full at the entering-edge, but completely die out at the opposite edge of the dies—the ribs of the dies; but as the metal is drawn slowly through between the dies the varying positions of the ribs, or shortening of the same, make it impossible that the blows can come in the same relative position upon the sheet; hence, by this constant succession of blows as constantly varying the curve, serves to deliver the sheet metal from the dies in a perfectly flat and smooth condition.

As the straightening is produced without the usual drawing of the sheet, the friction of such drawing is entirely avoided. The power required to impart the reciprocating movement to the dies is very much less than that required for the usual drawing.

While it is preferred that the ribs or corrugations should be gradually increased in extent, so as to make varying distances between the blows struck, a very good result, and much better than by any previous device, is accomplished by arranging the ribs or corrugations equidistant from each other. I therefore do not wish to confine this invention to the varying or gradually-increasing distance between the ribs.

I claim—

The herein-described method of straighten-

ing sheet metal, consisting in passing the sheet to be straightened between a pair of dies, one or both of which have a reciprocating movement toward and from the other, and provided with a series of ribs, the ribs on the one part intermediate between the ribs on the other part, the ribbed face of the two parts inclined to each other, so that the ribs at the entering side bend the sheet, while the ribs at the other edge do not pass beyond the plane of the flat finished surface of the sheet, substantially as described.

GEO. E. SOMERS.

Witnesses:
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