

(Model.)

S. C. CARY.

METAL STRAP FOR PACKING BOXES.

No. 388,629.

Patented Aug. 28, 1888.

Fig. 1.

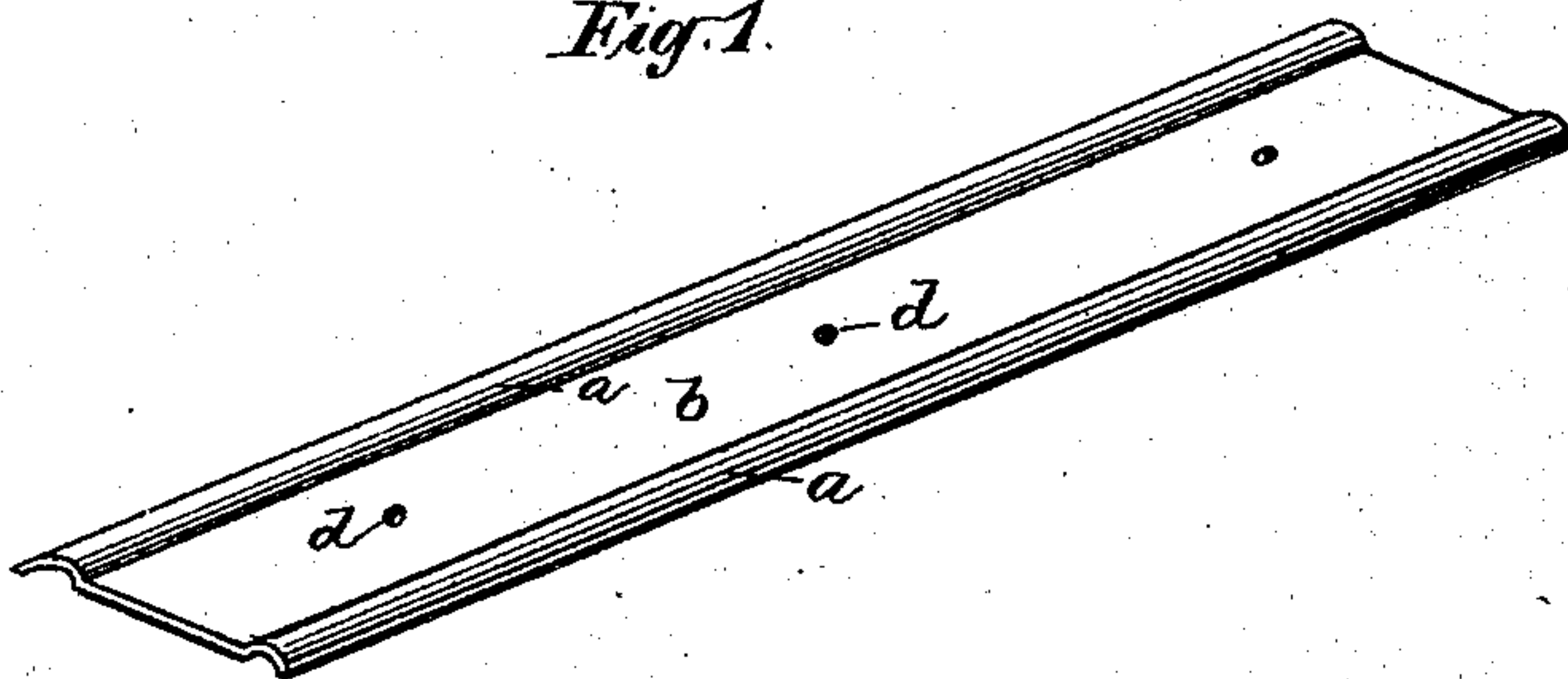


Fig. 2.

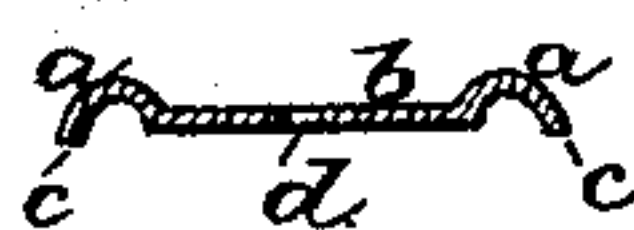
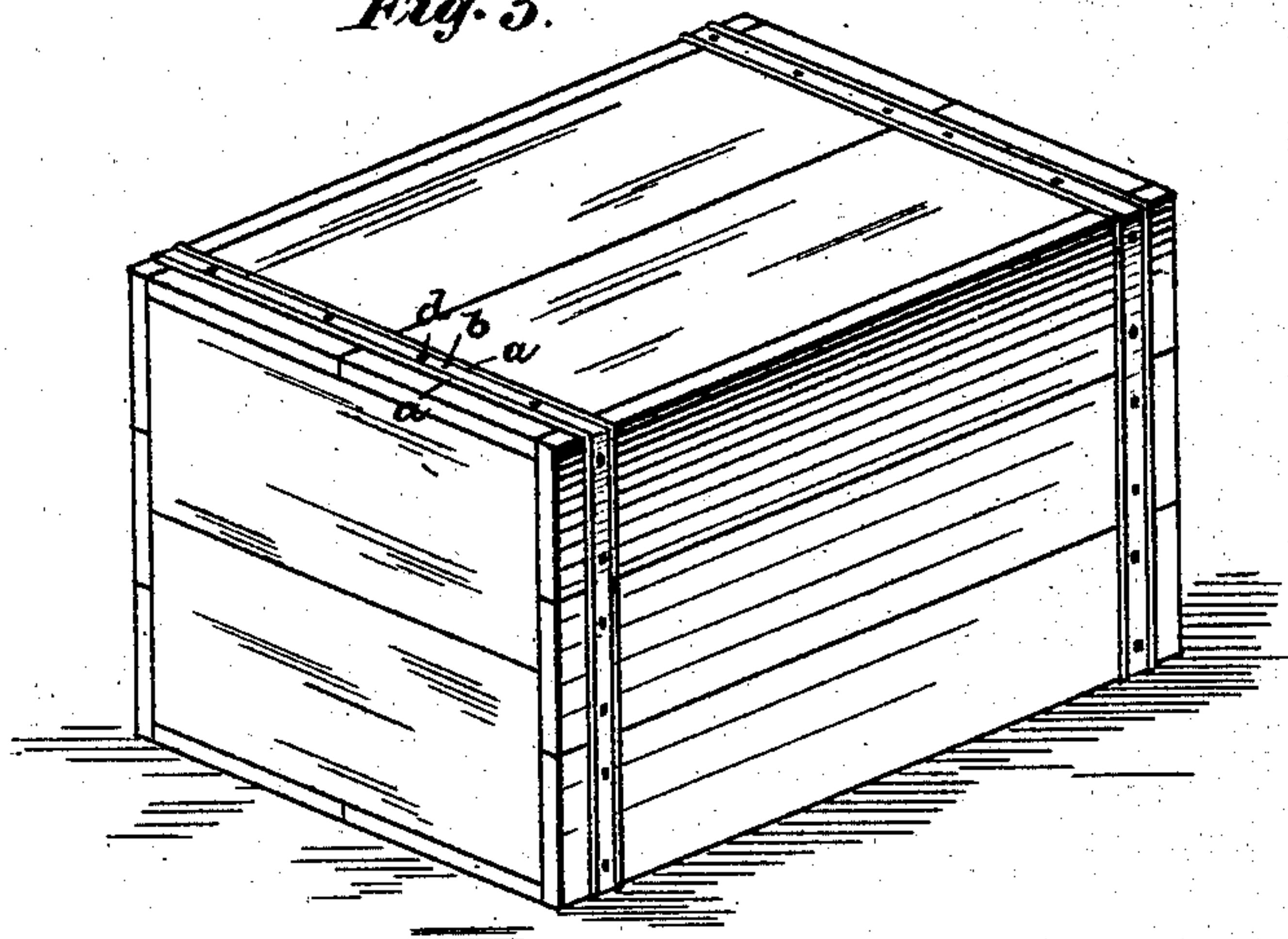


Fig. 3.



WITNESSES:

A. S. Fitch.

Henry Kiskling.

INVENTOR,

Spencer C. Cary.

BY *Wm. L. Fitch*

ATTORNEY.

UNITED STATES PATENT OFFICE.

SPENCER C. CARY, OF BALDWIN, NEW YORK.

METAL STRAP FOR PACKING-BOXES.

SPECIFICATION forming part of Letters Patent No. 388,629, dated August 28, 1888.

Application filed October 15, 1886. Serial No. 216,304. (Model.)

To all whom it may concern:

Be it known that I, SPENCER C. CARY, of Baldwin, county of Queens, State of New York, a citizen of the United States, have invented an Improved Metal Strap for Packing-Boxes, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification.

My invention relates to a metal band or strap for use in binding packing-boxes; and my invention consists in a box-strap composed of a metal band having longitudinal stiffening-corrugations along and immediately upon its edges, and which may be formed with its extreme edges turned or formed to project beyond its under side, all as hereinafter described, and as more at length recited in the claims.

Figure 1 is a view in perspective of a box-strap containing my invention, composed of a metal band with the longitudinal stiffening-corrugations along and immediately upon its edges. Fig. 2 is a cross-section of Fig. 1.

Fig. 3 shows a packing-case with my improved box-straps bound in place thereon.

In fabricating my invention I take an iron band or strap and form the longitudinal corrugations *a a* upon its edges, leaving the central portion, *b*, flat, and with the extreme edges of the band terminating at the bases of the respective corrugations on the outer sides thereof, as shown, so that the flat portion or web of the completed strap is wholly and only between the described corrugations. This may be done by passing the flat band between suitable rolls, one of which has circumferential ridges and the other opposed and corresponding depressions, so that the metal of the band is "struck" or carried into the depressions, and thus raised in a corrugation along the edges of the strap, as shown in Fig. 1, or by other suitable means by which the metal is thus struck up along the edges of the strap. I prefer to have the extreme edges of the strap turned or carried downward, so that they project somewhat below the under face of the strap, as shown at *c*, and this may be effected by the passage between the suitable rolls at the same time that the corrugations are formed, as above stated. Nail-holes *d* may be formed at intervals along the central web of the strap,

as shown, when making the strap in the described manner, and thus the labor and annoyance of punching the holes when the strap is applied to the box, as is customary, be avoided.

When my improved box-strap is applied to a packing-case, the objections now existing to metal straps as ordinarily formed are obviated. The edges will lie in close contact with the face of the box throughout its length, and when the downwardly-projecting edges *c* are provided these edges will enter somewhat into the surface of the box and assist in holding the strap closely to the box. The longitudinal corrugations will prevent the strap from buckling between the nails when they are driven, and the heads of the nails will be protected by said corrugations from contact with external objects. The nail-heads of flat box-straps being above the strap when seated often do damage by contact with other objects, or the nails become loosened by such contact or by blows upon the buckled portion of the strap between the nail-heads.

When the nail-holes *d* are not formed, the central web of the strap may be made so thin that the nails, when driven, will easily penetrate the web. The stiffening-corrugations will, when the strap is seated, bind it firmly to the box-surface.

I form the projecting ridges upon the edges of the strap, as shown, as corrugations struck in the metal of the band, rather than as solid rolled beads, for the reason that the former do not interfere with the proper flexibility of the band flatwise, as in being bent over the angle or corner of a packing-box, while the latter would so stiffen the band that its rigidity would be objectionable for the use for which it is intended.

I form the described stiffening-corrugations immediately upon the edges of the strap, as thereby the extreme edges of the metal band are in any event turned or inclined downwardly, and no portion of the band is left flat or outwardly turned along the edges outside the line of the corrugations.

I am aware that in the patent granted to me July 25, 1876, No. 180,198, there is shown a metal cleat which is secured upon the interior of a wooden box at the ends thereof, and which serves to strengthen the box structure

by binding the slabs forming the box ends together, and which cleat has ridges projecting above its outward face and extending longitudinally of the cleat; but the said ridges in
5 said cleat are formed and situated within or some distance back from the edges of the cleat, so that they are substantially along the central portion of the cleat, and the edges of the
10 cleat extend beyond the ridges on the outside thereof, constituting flat web portions along and upon each edge of the cleat. A metal band having longitudinal corrugations formed therein as the ridges are formed and located
15 in said cleat is not adapted for use as a box-strap, for the reasons that while the corrugations may protect the heads of nails driven through the strap between said corrugations, the flat edge projecting along each side of the
20 strap outside the corrugations is exceedingly liable to cut or injure the hands of the handlers of boxes to which the strap is applied, and the strap is also liable to break across the crowns of the corrugations at the bends or angles necessarily formed therein when the strap is turned
25 flatwise around the corners of boxes or cases. The corrugations, in order to effectively guard and protect the heads of the nails driven through the strap between them, must be of a height above the web of the strap which is
30 somewhat greater than or at least equal to the thickness of said nail-heads; and when corrugations of such effective height are formed longitudinally of a metal band along its central portion, or with a flat web along the edges of

the band outside of such corrugations, the
35 band, on being bent sharply around a box-angle, is liable, as stated, to break at the crowns of the corrugations, thus weakening it at the places on the box where the full tensile strength of the box-strap is most needed, and
40 at the same time producing rough and jagged projections of sharp metal at the box-corners, which are obviously very objectionable, so that a metal band thus formed possesses no effective and practical utility as a box-strap. The
45 metal band having stiffening-corrugations along and immediately upon the edges thereof, which I have herein described and shown as embodying my present invention, and to which it is my intention to limit my claims here-
50 under, obviates all the objections stated and constitutes an effective and practical box-strap.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. A metal box-strap provided with longitudinal stiffening-corrugations along and immediately upon its edges, substantially as and for the purpose set forth.

2. A metal box strap having longitudinal
60 stiffening-corrugations and its extreme edges downwardly turned to project beyond its under face, substantially as and for the purpose described.

SPENCER C. CARY.

Witnesses:

A. G. N. VERMILYA,
A. S. FITCH.