

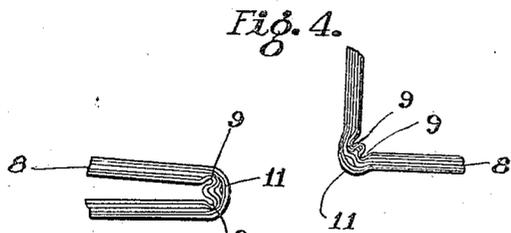
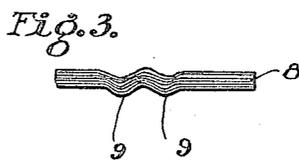
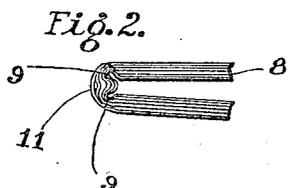
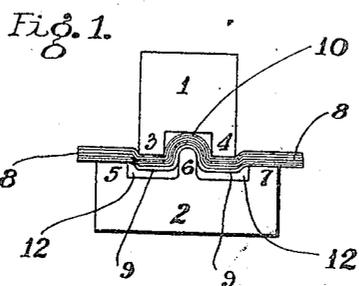
Feb. 5, 1924.

1,482,569

B. A. LANGE

BOX CORNER

Filed Jan. 16, 1922



Inventor:
Berthold A. Lange,
by Hugh H. Wagner, Atty.

UNITED STATES PATENT OFFICE.

BERTHOLD A. LANGE, OF ST. LOUIS, MISSOURI.

BOX CORNER.

Application filed January 16, 1922. Serial No. 529,525.

To all whom it may concern:

Be it known that I, BERTHOLD A. LANGE, a citizen of the United States, residing at the city of St. Louis, in the State of Missouri, have invented certain new and useful Improvements in Box Corners, of which the following is a specification.

This invention is a box-corner or joint, and, among other advantages, makes it unnecessary to use tape or strips of linen pasted to the sides or ends of boxes to form the corners and to unite together the pieces that form the side and ends.

This form of corner is intended for use where continuous material, such, for instance, as pasteboard, fiberboard, strawboard, or the like, is creased at intervals, preferably by machinery, to form the corners of boxes, and where the said material is fed continuously past dies that make the said creases.

It will be understood that the term "corners," as used herein, applies to such parts whether in a vertical or a horizontal plane—i. e., whether along what are usually called edges or what are usually called corners.

This invention strengthens the corners, because more tensile strength is retained in the creases that form the corners. This is due to the fact that this construction increases the number of bending lines in the material and the area of the bending surface and the flexibility and pliability of the material in the creases or corners, while, at the same time, there is a decrease of the depth of the creasing and of separation of plies in the material and of strain on the stock at the bend and adjacent to the bend and of breakage of fiber in the stock.

In the accompanying drawings forming part of this specification, in which like numbers of reference denote like parts wherever they occur,

Figure 1 shows the material gripped by a pair of dies in the formation of the crease;

Figure 2 illustrates the great flexibility of this joint without danger of breakage;

Figure 3 shows the same distended and similar absence of fracture;

Figure 4 depicts a box-corner embodying this invention; and

Figure 5 is the opposite of Figure 2 and similarly evidences the pliability of the crease for any useful purpose.

The dies 1 and 2 may be reversed or their direction changed. The alternation of the projections or jaws 3, 4, 5, 6, and 7 may be altered. The parts 3 and 4 may be placed on die 2, and the parts 5, 6, and 7 upon the die 1.

The material 8 may be fed in either direction. The number of the bends or creases 9 may be increased for special uses.

Preferably in forming the bends or creases 9, one or the other of the dies will move toward the other at an angle oblique toward the plane at which the material 8 approaches the dies. From this and the double crease 9 arises the principal merit of this invention, especially in conjunction with the third crease 10.

Made in this way, there is no weakening of the corner 11. Instead, more material is actually present in corner 11 than if there were only one bend or than if there were only one cup or depression 12 in die 2 or its equivalent. This abundance of material is due to the duplication of creases 9 and the presence of crease 10. Either without the other would measurably produce this result. So, also, will the oblique movement of one of the dies. The combination of all is preferred.

Having thus described this invention, I hereby reserve the benefit of all changes in form, arrangement, order, or use of parts, as it is evident that many minor changes may be made therein without departing from the spirit of this invention or the scope of the following claim.

I claim:

A pair of dies for creasing material therebetween to form box corners, one of said dies being provided with a die face presenting a pair of spaced projections defining a cup-shaped depression, said die being adapted to be moved toward the other die at an angle oblique to the plane of the material,

and the other die being provided with a die face presenting a plurality of projections defining relatively spaced apart cup-shaped depressions adapted to be entered by the said projections respectively, of the first-mentioned die, one of the said projections of the said other die being adapted to enter the cup-shaped depression of the said first-mentioned die, whereby the said material is creased with alternate bends and with an increase in material gathered at the intermediate bend. 10

In testimony whereof I hereunto affix my signature.

BERTHOLD A. LANGE.