

No. 748,022.

PATENTED DEC. 29, 1903.

P. S. SMITH.
FORM BLOCK FOR BOX COVERING MACHINES.

APPLICATION FILED MAR. 30, 1903.

NO MODEL.

Fig. 1.

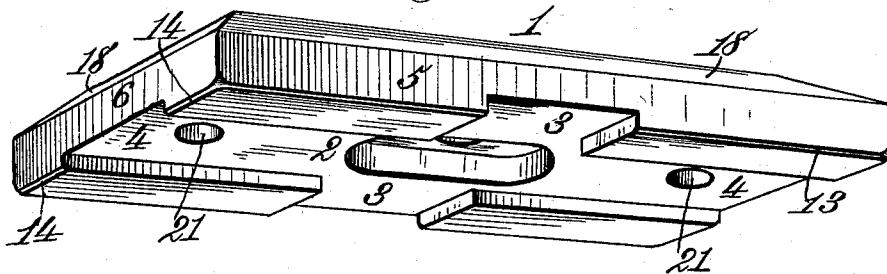


Fig. 2.

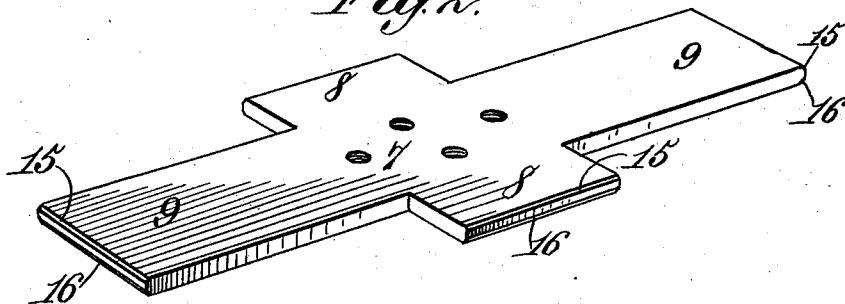
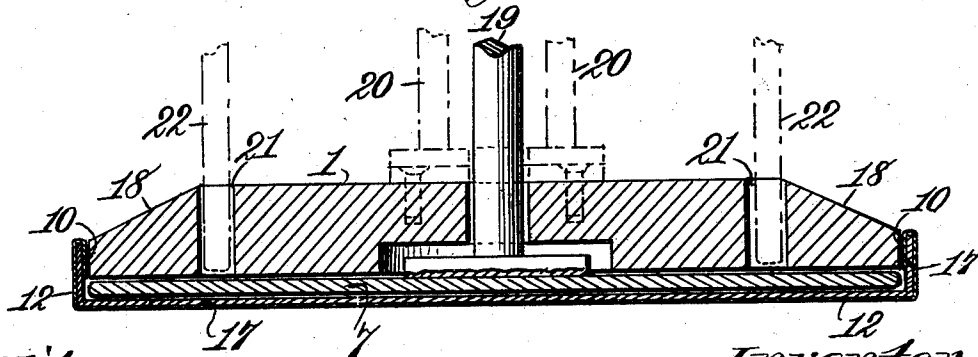


Fig. 3.



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UNITED STATES PATENT OFFICE.

PHILIP S. SMITH, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR OF THREE-FOURTHS TO J. STODDELL STOKES, OF MOORESTOWN, NEW JERSEY, HARRY B. SMITH, OF BROOKLYN, NEW YORK, AND WINFIELD SCOTT SMITH, OF PAWTUCKET, RHODE ISLAND.

FORM-BLOCK FOR BOX-COVERING MACHINES.

SPECIFICATION forming part of Letters Patent No. 748,022, dated December 29, 1903.

Application filed March 30, 1903. Serial No. 150,183. (No model.)

To all whom it may concern:

Be it known that I, PHILIP S. SMITH, a citizen of the United States, residing at Philadelphia, in the county of Philadelphia and State of Pennsylvania, have invented new and useful Improvements in Form-Blocks for Box-Covering Machines, of which the following is a specification.

My present invention relates to certain new and useful improvements in form-blocks for box-covering machines, and is designed for use more especially in connection with machines of the type shown and described in my prior patent, No. 691,329, dated January 14, 1902, although the same may be applied to machines of other construction. In my aforesaid patent a box-form is shown and described comprising two blocks superposed one upon the other, mechanism being provided to separate the blocks at a certain stage of the covering operation to permit the edge-tuck-in fingers to tuck or fold the wings or flaps of the covering-blank over the edges of the box. After this operation the upper block (which has been temporarily held above the lower block and out of the box) is caused to descend and again enter the box to tuck down the folded edges of the blank and cause them to be firmly affixed to the inside of the box. Briefly stated, this is the general operation of the machine, from which it will be apparent that the object of employing the two blocks is to permit the edge-tuck-in fingers to fold the covering-blank over the edges of the box while the blocks are separated and to cause the upper block to fold the tucked-over edges of the blank down into the box. The form-block shown and described in my said patent meets substantially every requirement except where very shallow or "thin" boxes are to be covered; but in such cases the form-blocks must of necessity be made correspondingly thin, and as these blocks are usually made of wood they are not as durable as they should be, and, furthermore, the thin board from which they are made is liable to warp and get out of shape, which ma-

terially interferes with the operation of the covering devices, resulting in work that is not as desirable and satisfactory as it should be. Again, where very shallow boxes are made and relatively thick blocks are employed (especially where the lower block is of the required thickness to render it sufficiently strong and durable) said lower block itself almost completely fills the shallow box and does not give sufficient room for the upper block to enter the box to permit it to perform its function of folding down the edges of the covering-blank. It is to fulfil these requirements and to render the machine capable of covering shallow boxes in the best possible manner that I have devised the form-block constituting the subject-matter of this application, and while I have shown here only one embodiment of the invention I do not wish to be understood as limiting myself to the specific construction of blocks shown, as these may be varied within the scope of the appended claims without departing from the spirit of the invention.

Briefly and generally stated, the invention comprises a "form" for box-covering machines consisting of two blocks adapted to be superposed one upon the other, one of said blocks having a recess or cavity to receive the other block, so that when the blocks are in their superposed position the combined thickness of the two blocks will be less than their combined maximum thickness when separated.

Further, the invention comprises a form consisting of two blocks adapted to be superposed one upon the other, the upper block having a recess or cavity in its under side, portions of which recess extend outward to the sides or edges of the block, and the lower block being shaped to enter the recess in the upper block and having portions which extend outward in line with or substantially with the sides or edges of said upper block.

The invention comprises other features of novelty, which will be more clearly set forth in the following specification.

In the detailed description which will now be given reference will be made to the accompanying drawings, in which—

Figure 1 is a perspective view of the upper block looking from below. Fig. 2 is a perspective view of the lower block; and Fig. 3 is a longitudinal sectional view of the two blocks superposed, said blocks being shown in position within a box.

Referring now to the drawings, Figs. 1 and 3, the reference-numeral 1 designates the upper block of the form, which is preferably but not necessarily made of wood and which may be of any desired shape to suit the shape of the box to be covered. This block 1 has upon its under side a central recess or cavity 2, portions 3 and 4 of which extend outward to the sides 5 and ends 6, respectively, of the block, as shown. In the present instance the recess or cavity is of cruciform shape, or substantially so; but the shape of this recess may vary, and I do not wish to be understood as limiting myself to the particular configuration herein shown.

The numeral 7 designates the lower block of the form, which, as will be seen, is provided with extensions 8 and 9, respectively, the shape of the said block being substantially the same as that of the recess or cavity 2 in the upper block except that it is sufficiently smaller to enable the same to be freely seated in said cavity or recess. The said lower block 7 may be equally as thick as the cavity or recess 2 is deep, or it may be thinner or slightly thicker than said cavity or recess without departing from the spirit of the invention. Likewise the block 7 may be of some shape other than that shown, the only requirement being that it shall be of such shape as to enter the cavity or recess in the upper block whatever may be the shape of said cavity or recess.

In order to permit the edge-tuck-in fingers before referred to to more readily enter between the two blocks 1 and 7 when they are separated in the covering operation, and in order to guard against the presence of sharp corners on the blocks which would likely catch into the turned-over edges 10 of the covering-blank 12 as the form is withdrawn from the box, I prefer to bevel or cut away the lower edges of the sides 13 and ends 14 of the upper block, and I likewise bevel both the upper and lower edges 15 and 16 of the projecting portions or extensions 8 and 9 of the lower block 7, as more clearly shown in Fig. 2.

In order that the upper block may have the required strength and rigidity, it is desirable that the same be comparatively thick, at least thicker than the shallow box being covered—such, for example, as the box 17. (Represented in Fig. 3.) At the same time, however, it is very undesirable that the outer edges or walls of the upper block project above the upper edges of the box, for the reason that the gummed side of the wings or flaps of the covering-blank coming in contact with

such projecting or extending side walls of the block 1 during the covering operation would smear them (the side walls) with gum or glue and this gum or glue would then be imparted to the covering-rollers on the return stroke or ascent of the plunger, as set forth in my prior patent referred to. This gum or glue on the rollers would then be imparted to the outer face of the finished box and materially detract from the appearance thereof, which, it will be understood, is very undesirable and should be avoided. To overcome this most serious objection, after a form consisting of the two blocks has been made of the required size to fit within the box to be covered if the side walls of the upper block project above the edges of the box I bevel off these walls on all sides, as at 18, from the upper edge of the box inward, as more clearly shown in Figs. 1 and 3.

The lower block 7 is attached to a suitable supporting-rod 19, and the upper block is supported by rods 20—such, for instance, as shown in my pending application, Serial No. 112,791, filed June 23, 1902. Likewise the upper block may, if desired, be provided with openings 21 to receive stripper-rods 22, (shown in dotted lines,) although these openings are not absolutely necessary, as the box may be stripped from the form by other means.

As before described, the extensions 8 and 9 of the lower block project outward to the sides and ends, respectively, of the upper block, or, in other words, the maximum length and width of the lower block is substantially the same as that of the upper block. It will thus be understood that when the upper block is withdrawn from the box during the operation of the edge-tuck-in fingers the outer walls or edges of the extensions 8 and 9 of the lower block will lie in close proximity to the side and end walls of the box, and thus serve to support the latter from within in an effective manner.

What I claim is—

1. A form for box-covering machines comprising two blocks superposed one upon the other, the upper block being recessed on its under side and portions of said recess extending outward and opening into the sides and ends of the block, and said lower block being shaped to conform to and fit within said recess in the upper block.

2. A form for box-covering machines comprising two blocks, one of said blocks having a recess or cavity in its under face of substantially cruciform shape and having portions thereof opening into the sides and ends of the block, and the other block having a configuration similar to said recess and adapted to fit therein.

3. In a form for box-covering machines, a block having a recess or cavity in its under face, portions of said recess opening into the sides of the block.

4. In a form for box-covering machines, a

block having a recess or cavity in its under face, portions of said recess opening into the sides and ends of the block.

5 5. In a form for box-covering machines, a block having a recess or cavity therein of substantially cruciform shape.

6. In a form for box-covering machines, a block of substantially cruciform shape.

10 7. In a form for box-covering machines, a block of substantially cruciform shape, the lower marginal edges of the extensions of said block being cut away.

15 8. In a form of box-covering machines, a block of substantially cruciform shape, the upper and lower marginal edges of which are cut away.

9. In a form for box-covering machines, a block having a recess or cavity in its under face, portions of said recess opening into the

sides of the block and the lower marginal 20 edges of said block being cut away.

10. A form for box-covering machines comprising two blocks adapted to be superposed one upon the other, the upper block having a recess in its under face portions of which 25 recess open into the sides of the block, and the lower block being shaped to enter said recess and having portions thereof extending outward to the vertical sides of the upper block.

30 In testimony whereof I have hereunto set my hand in presence of two subscribing witnesses.

PHILIP S. SMITH.

Witnesses:

CHAS. E. DAVIS,

WALTER F. HENRY.