No. 677,649. Patented July 2, 1901.

T. C. FARRELL.

COMBINED BOX CAP AND SHOE PLANK HOLDER.

(Application filed Nov. 9, 1900.)

(No Model.)

Fig. 3.

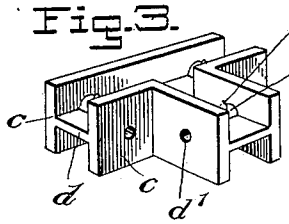


Fig. 1.

Fig. 5.

Fig. 2.

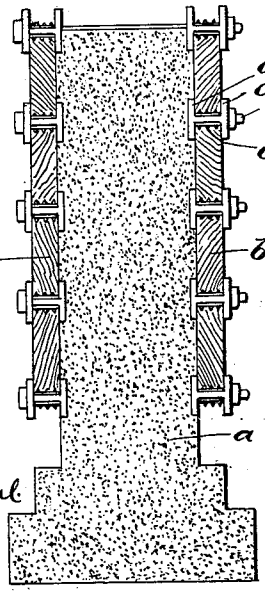


Fig. 4.

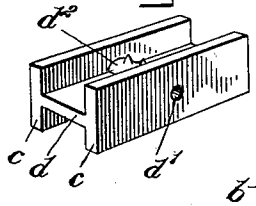


Fig. 6.

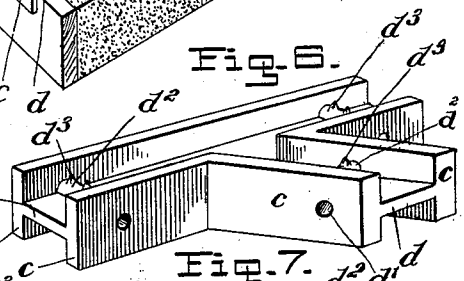
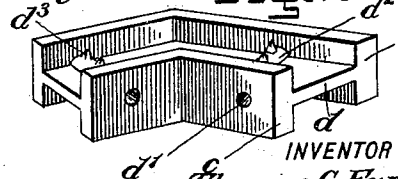


Fig. 7.



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THOMAS C. FARRELL, OF WASHINGTON, NEW JERSEY.

COMBINED BOX-CAP AND SHOE-PLANK HOLDER.

SPECIFICATION forming part of Letters Patent No. 677,649, dated July 2, 1901.

Application filed November 9, 1900. Serial No. 35,951. (No model.)

To all whom it may concern:

Be it known that I, THOMAS C. FARRELL, a citizen of the United States, and a resident of Washington, in the county of Warren and State of New Jersey, have invented a new and useful Combined Box-Cap and Shoe-Plank Holder, of which the following is a full, clear, and exact description.

This invention relates to certain apparatus for facilitating the construction of concrete walls, piers, columns, and like structures, to which end it comprises certain peculiar features of construction characteristic of the means for holding together the planks forming the walls between which the concrete structure is molded. These walls are formed of a number of planks set upon their edges, and my invention resides in the devices for coupling and binding these planks together, which I have termed "combined box-cap and shoe-plank holders."

This specification is a specific description of one form of the invention, while the claims are definitions of the actual scope thereof.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar characters of reference indicate corresponding parts in all the views.

Figure 1 represents a perspective view of a wall in process of construction by means of my invention. Fig. 2 represents a vertical section of the wall. Fig. 3 is a detail perspective view of the T form of the combined box-cap and shoe-plank holder. Fig. 4 is a similar view of the straight form of the combined box-cap and shoe-plank holder. Fig. 5 is a similar view of the L form of the combined box-cap and shoe-plank holder. Fig. 6 is a similar view of the Y form of the combined box-cap and shoe-plank holder, and Fig. 7 is a similar view of the obtuse-angle form of the combined box-cap and shoe-plank holder.

In the drawings, *a* represents the concrete wall, which is built up of cracked rock and cement, as usual. This wall is here shown as having a straight main portion with a rectangular branch passing from its middle and an obtuse-angled branch passing from one end.

b represents the planks, which are set on edge to form the sides of the mold in which the wall is built, the combined cap and shoe-plank holder for these planks comprising in every case vertically-disposed sides *c*, connected by a horizontal web *d*, giving the combined box-cap and shoe-plank holder the shape of an H in cross-section. These webs *d* are formed with one or more passages *d'*, extending through them in the plane of the webs, the webs having enlargements d^2 on their top and bottom faces, so as to cover the parts of the web in which the openings *d* are formed, thus strengthening the webs at these points, which would otherwise be weakened by the openings. The planks are set in between the sides *c* of the combined box-cap and shoe-plank holders and rest with their edges on the webs *d*, and for the purpose of causing the planks to be firmly engaged with the webs the enlargements d^2 are formed with small spurs d^3, which engage in the planks and hold them firmly. The various forms of combined box-cap and shoe-plank holders are connected in transverse pairs by the tie-bolts *e*, which are passed through the openings *d'* and extend across the wall, so as to draw together the opposite sides of the mold, or, in other words, the opposite planks.

Reference to Fig. 1 will show the uses of the various forms of the combined box-cap and shoe-plank holder. The T form of the combined box-cap and shoe-plank holder (shown in Fig. 3) is useful where it is desired to form the end of a wall—as, for example, as indicated at the left hand of Fig. 1—whereat the side planks *b* fit in the main portions of the box-cap and the end planks (indicated at *b'* in Fig. 1) fit in the branch portions. The straight form of the combined box-cap and shoe-plank holder (indicated in Fig. 4) is employed to join together the meeting ends of two of the planks and also, if desired, to strengthen the planks at points intermediate their ends. The L form of the combined cap and shoe-plank holder (shown in Fig. 5) is used when it is desired to make a rectangular branch in the wall, as is shown in Fig. 2, and the obtuse form of the combined box and shoe-plank holder (shown in Fig. 7) is designed for use at the inside of a branch to or bend in the wall, which bend is in an obtuse angle to the main part of the wall, as indi-

cated at the right-hand end of Fig. 1. The Y form of the combined box-cap and shoe-plank holder with the acute branch (shown in Fig. 6) is intended for use at the outside angle of the said obtuse bend. This form of the device is especially useful where it is desired to form a branch wall passing from the bend at an acute angle thereto. This is shown at the upper extremity of Fig. 1, where the main part of the wall has an obtuse branch and where it is desired to build a third branch running in parallelism with the obtuse branch. At the top of Fig. 1 the planks for the inner side of this last-named or acute branch are indicated by the letter b^2.

The combined box-cap and shoe-plank holders being constructed as described and being furnished to the skilled mechanic, he may readily use them in various ways, as will be suggested by his skill in the art. Indeed, the invention is not limited to the combined box-cap and shoe-plank holders formed in the shape illustrated, since obviously they might be given various other shapes to accommodate them to the sort of structure desired without departing from the principles of my invention.

Fig. 2 illustrates the manner of building up a wall. In doing this the workman starts at the base of the wall and adds course after course of planks until, say, four or five courses of planks have been placed one on top of the other. This is sufficient to give the foundation of the wall its proper strength, and then the workman may begin to take out the lower planks, with the combined box-cap and shoe-plank holders and the bolts therefor, and use these again at the top of the wall, filling in with concrete, as before. The wall may therefore be built up to any height desired without necessitating a continuous sheathing of these planks throughout the height of the wall. In other words, it is only necessary to leave the planks in place long enough to permit the cement to set. The openings in the walls left by the bolts serve the double purpose of permitting the fastening of iron brackets—such as are used in fire-escapes, &c.—and also to receive the fastenings of staging and the like built along the wall for the workmen. When the staging is taken down and the wall about to be finished, the bolt-holes may be filled and the wall cleaned off, as usual.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a building appliance, a combined box-cap and shoe-plank holder, comprising vertical side walls with a horizontal web extending between them, and a passage extending through the web in the plane thereof.

2. In a building appliance, a combined box-cap and shoe-plank holder, having vertical side walls with a horizontal web extending between them, the web having a passage through it in the plane thereof, and the web having enlargements at its upper and lower sides surrounding the point at which the passage is formed.

3. A mold for forming concrete walls, the mold comprising shoe-planks, combined box-caps and shoe-plank holders engaged therewith, and a bolt passing across the wall between the combined box-caps and shoe-plank holders.

4. In a building appliance, a combined box-cap and shoe-plank holder, comprising vertical side members, and a horizontal web extending between them, and the combined box-cap and shoe-plank holder being in essentially the form of a Y, for the purpose specified.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

THOMAS C. FARRELL.

Witnesses:
CLARK SHAFER,
ALONZO P. LEWIS.