

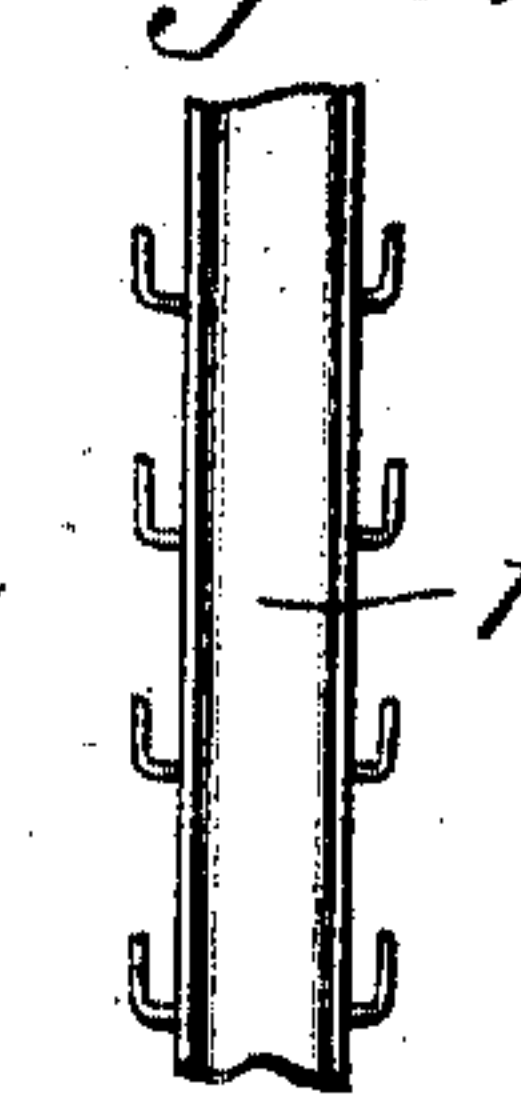
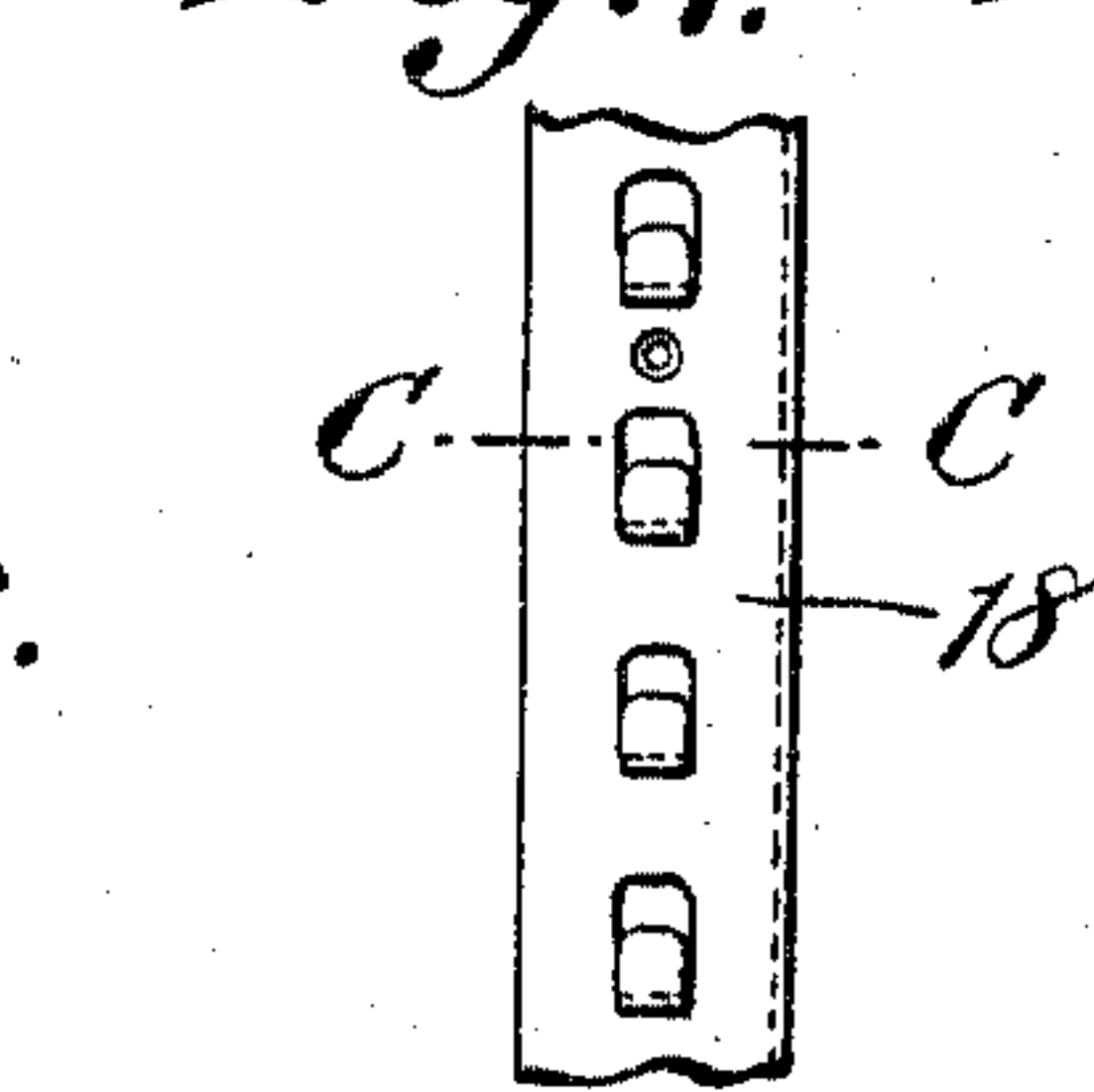
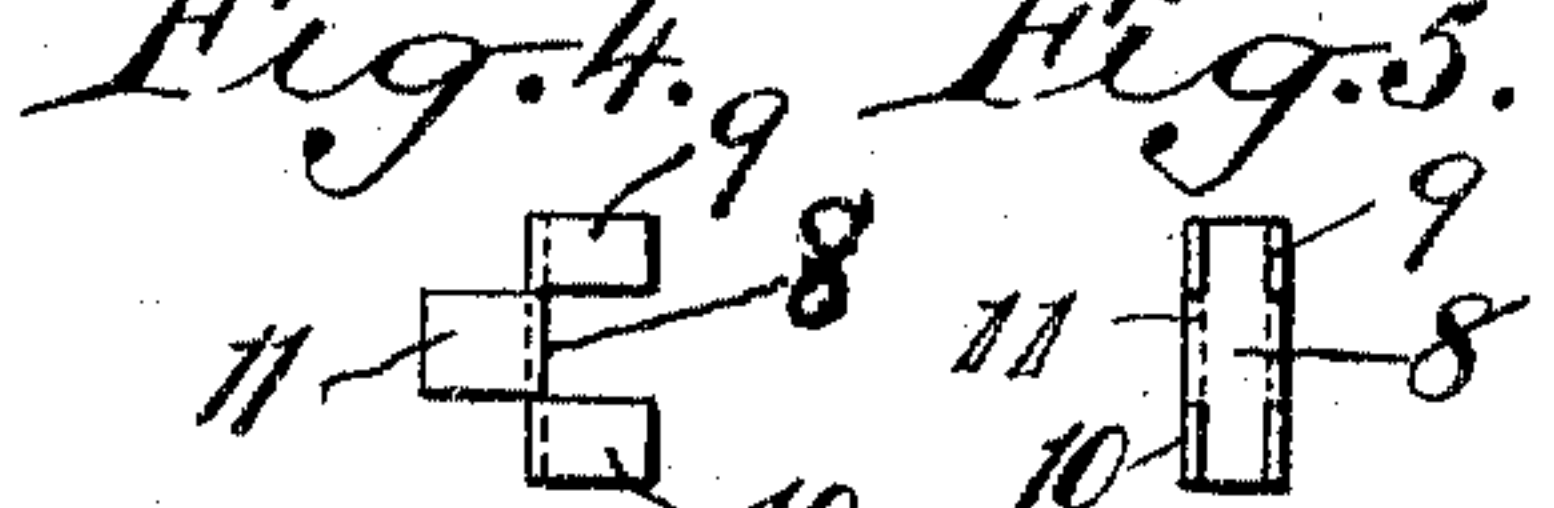
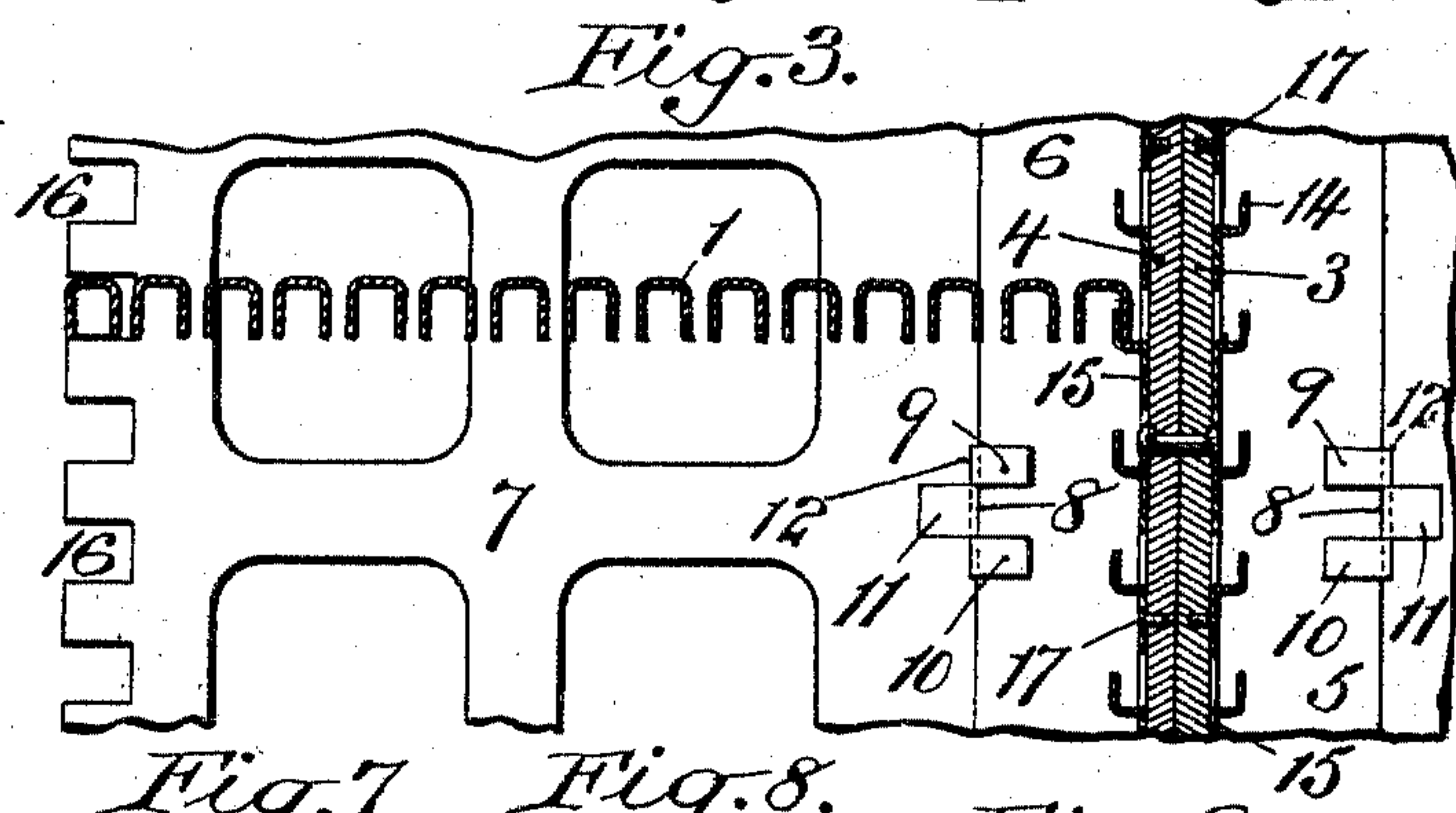
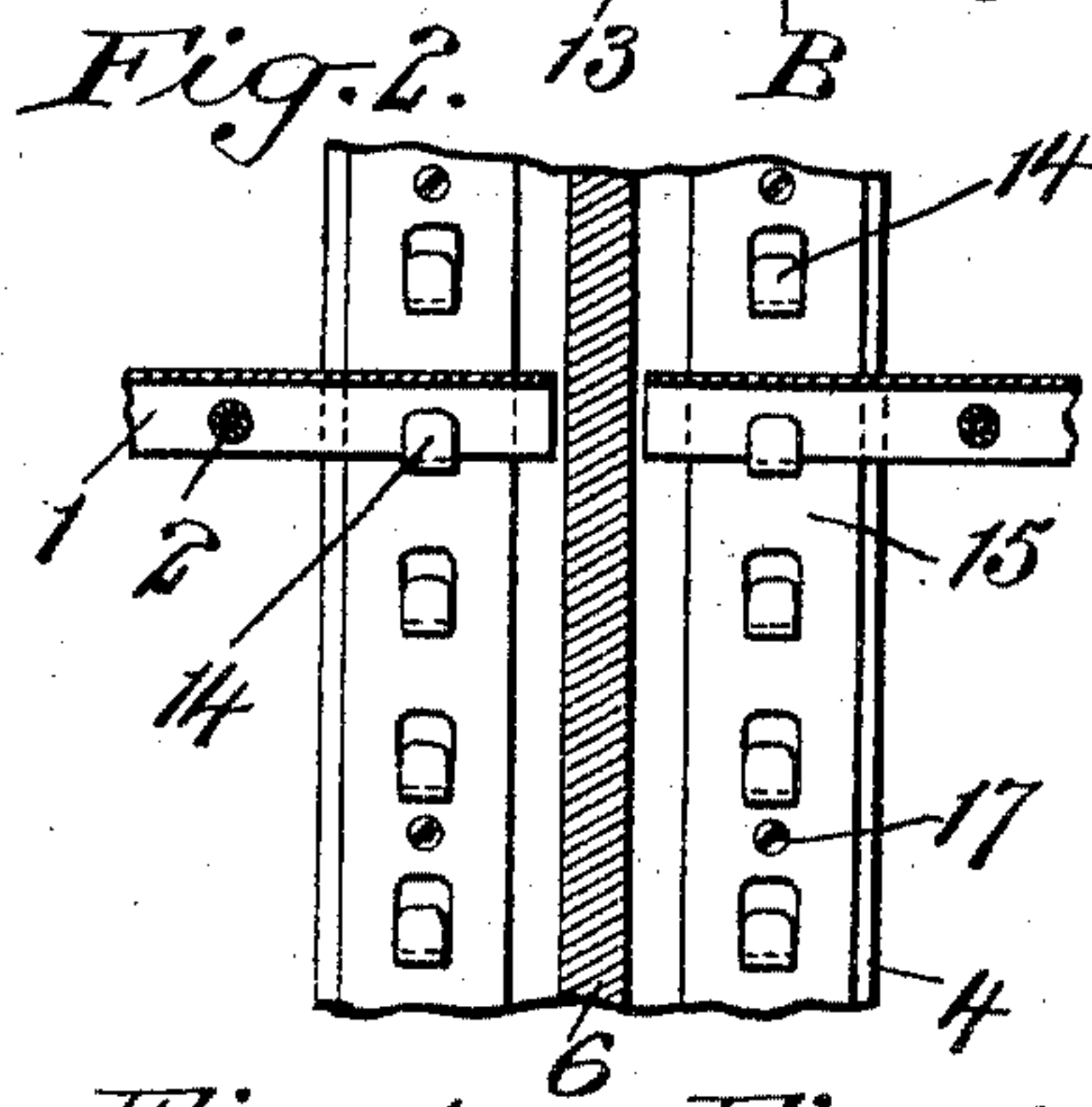
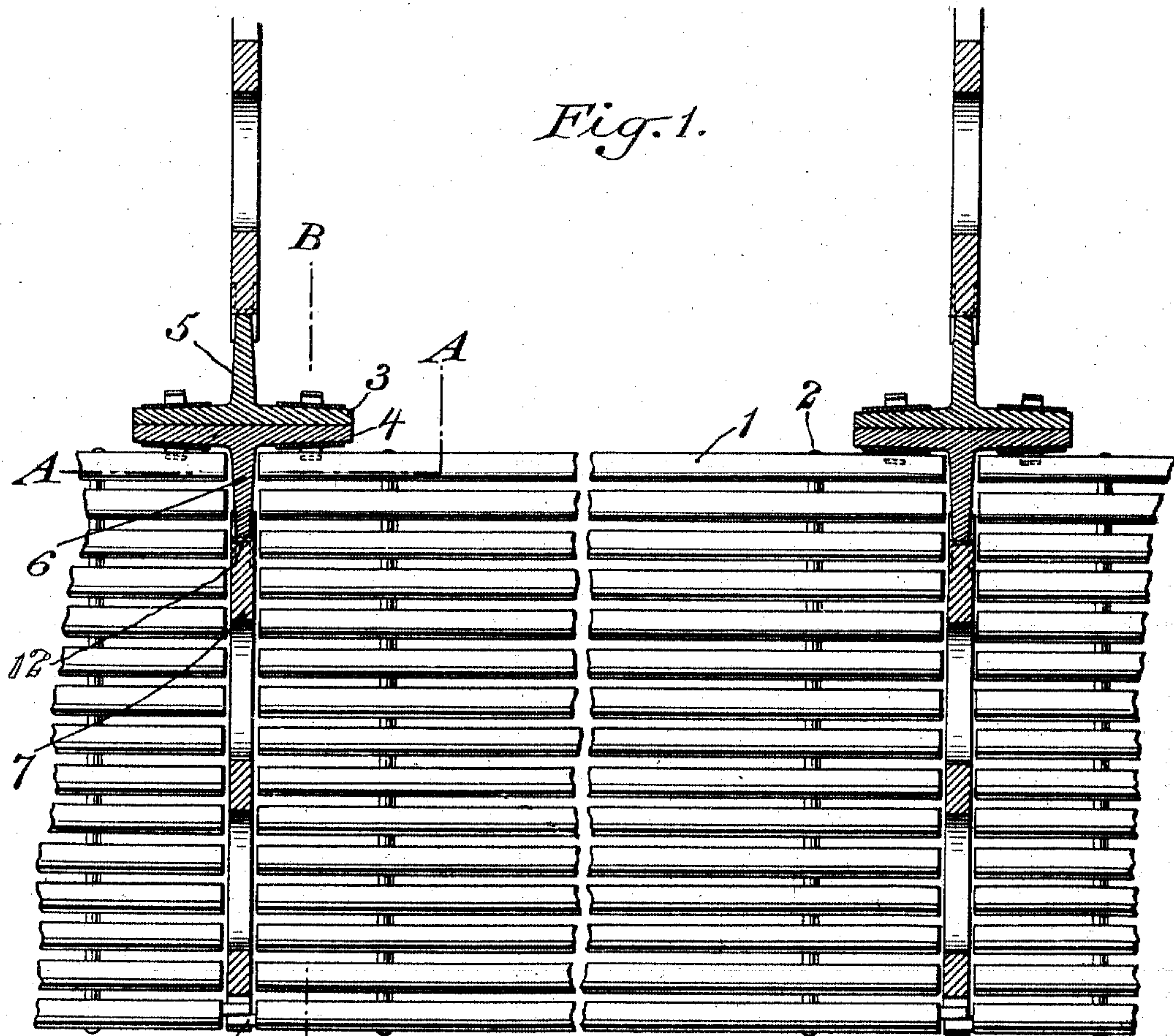
No. 767,109.

PATENTED AUG. 9, 1904.

B. R. GREEN.
BOOK STACK.

APPLICATION FILED JAN. 5, 1904.

NO MODEL.



Witnesses: *Fig. 6.*
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UNITED STATES PATENT OFFICE.

BERNARD R. GREEN, OF WASHINGTON, DISTRICT OF COLUMBIA.

BOOK-STACK.

SPECIFICATION forming part of Letters Patent No. 767,109, dated August 9, 1904.

Application filed January 5, 1904. Serial No. 187,813. (No model.)

To all whom it may concern:

Be it known that I, BERNARD R. GREEN, a citizen of the United States, and a resident of Washington, in the District of Columbia, have
 5 invented new and useful Improvements in Book-Stacks, of which the following is a specification.

My invention relates to improvements in book-stacks, with the object in view of economizing shelf room and simplifying the structure, while maintaining the strength of the
 10 stack.

My invention more particularly relates to the general type of book-stack shown, described, and claimed in Reissue Letters Patent No. 11,401, granted to me January 30,
 15 1894.

A practical embodiment of my invention is represented in the accompanying drawings, in
 20 which—

Figure 1 is a horizontal section through a portion of a stack. Fig. 2 is a partial vertical longitudinal section in the plane of the line A A of Fig. 1. Fig. 3 is a transverse section in the plane of the line B B of Fig. 1.
 25 Fig. 4 is a view in side elevation of one of the clips for fastening the partition to the post. Fig. 5 is a face view of the same. Fig. 6 is a top plan view of the same. Fig. 7 is a view in side elevation of part of a modified form of shelf-supporting strip. Fig. 8 is an edge view of the same, and Fig. 9 is a transverse section of the same in the plane of the line C C of Fig. 7.

The book-shelf which I prefer to use in connection with the stack is composed of a series of bars 1, U-shaped in cross-section and secured together at the proper distances apart by means of tie-rods 2.

The posts are each composed of a pair of T-bars, the heads 3 and 4 of which are placed in juxtaposition, as clearly shown in Fig. 1, while the stems 5 and 6 extend in opposite directions in the plane of the partitions which separate succeeding tiers of shelves.
 40 45

The partitions between the adjacent ends of successive tiers of shelves are denoted by 7 and are quite similar in their general structure to the position shown and described in the Letters Patent above referred to, with the
 50

exception that their sides are free from the projecting lugs which have been heretofore relied upon for supporting the rear portions of the shelves.

The partition 7 is secured with its rear edge 55 abutting against the forward or outer edge of the stem 6 by means of clips (denoted as a whole by 8) preferably consisting of a single piece of metal so cut and bent as to form two pairs of wings extending in one direction 60 from the body of the clip and one pair of wings extending in the opposite direction from said body. The two pairs of wings (denoted by 9 and 10) slip over the edge of the stem 6 of the post, while the other oppositely-extended pair, 11, embrace the edge of the partition 7, the latter being cut away, as shown at 12, to permit the wings to rest with their outer faces flush with the faces of the partition 7, as clearly shown in Fig. 1. These clips 8 may 70 be placed at suitable intervals throughout the height of the stack, and as there is very little strain exerted upon them they may be made light and still serve their purpose to hold the partition with its inner edge against the outer 75 edge of the stem 6 and the partition itself in alinement with the stem 6, so as to permit the ends of the shelves on the opposite sides of the partition 7 to rest near the opposite faces 80 of the partition and stem and the several bars which compose the shelf to be made of full length from the front to the rear.

The fronts of the shelves are supported, as heretofore, by means of pins 13, projecting from the ends of the front bars of the shelves 85 and adapted to enter notches in the partition 7, while the shelf is supported at its rear by means of hooking the rear bar 1 of the shelf over the hooks 14, attached to the exposed face of the T-head 4 or 3 of the post. The hooks 90 14 for supporting the rear parts of the shelves are conveniently made by partially severing them from a strip of metal 15 and striking them out therefrom while still remaining integral with the strip 15 at one end. The hooks 95 14 are struck out at intervals corresponding to the notches 16 at the front of the partition 7, so that the shelves may be adjusted nearer to or farther away from the shelves immediately above or below them at pleasure. These 100

strips of metal from which the hooks 15 are struck may be secured to the face of the head 4 by means of screws 17 at suitable intervals.

In the form shown in Figs. 1 to 3, inclusive, I have shown the hooks struck from a plain strip of thin metal, while in Figs. 7, 8, and 9 I have shown a modified strip of metal in cross-section.

When the hook-strip is of U-shaped form, as shown in Figs. 7, 8, and 9, it is intended to slip it over the end of the combined T-heads 3 and 4, so as to bring the hooks in the same relative positions as shown when the strips 15, carrying the hooks 14, are used. This U-shaped strip is denoted as a whole by 18.

The construction above described reduces the distance between the adjacent ends of the shelves to a minimum and permits the shelf to retain its full length throughout its entire width and also because of the removal of the lugs from the opposite sides of the partition renders it feasible to place the books throughout the entire space from the face of one partition to the face of the adjacent partition and to do this throughout the entire width of the shelf.

The form of the supporting-hooks on a strip independent of the castings provides for making them of strong thin metal and securing them where they will support the rear part of the shelf to better advantage than where they were placed on the sides of the partition forward of the rear bar of the shelf.

The adjustment of the shelf is very simple, and the shelf is held very securely in its position by merely hooking the rear shelf-bar over the supporting-hooks 14.

What I claim is—

1. A book-stack comprising posts having flanges extending in the longitudinal direction of the shelf, supporting-hooks attached to the faces of the said flanges and shelves having rear bars constructed to hook over the said supporting-hooks on the flanges and means for supporting the shelves at their fronts.

2. A book-stack comprising posts having flanges extending in the longitudinal direction of the shelf and transversely to the shelf, shelf-supporting hooks attached to those flanges which extend in the longitudinal direc-

tion of the shelf, partitions arranged in alignment with the flanges transversely of the shelf, means for attaching the partitions to said flanges and shelves having their rear bars arranged to hook over the hooks on the posts and their fronts arranged to be supported on the partitions.

3. A book-stack comprising posts composed of T-bars arranged with their heads in juxtaposition and extending in a longitudinal direction of the shelves and their stems extending in opposite directions transversely of the shelves, partitions secured to the stems of the T-bars in alignment therewith, hooks secured to the opposite faces of the T-heads and shelves arranged at their rear edges to hook over the hooks on the heads and, at their front edges, to rest upon the partitions.

4. A book-stack comprising posts formed of T-bars arranged with their heads in juxtaposition and their stems extending in opposite directions transversely of the shelves, partitions arranged in alignment with the stems, clips for fastening the partitions to the stems, the said partitions being provided with recesses for letting in the clips flush with the faces of the partitions, hooks on the T-heads and shelves having their rear bars arranged to hook over the hooks on the heads and their fronts arranged to rest on the partitions.

5. A book-stack comprising posts having flanges extending in a longitudinal direction of the shelves and transversely to the shelves, partitions fixed to the transversely-extending flanges and arranged to support the shelves at the front, thin strips of metal having supporting-hooks struck therefrom at intervals throughout their lengths and secured to the flanges which extend in the longitudinal direction of the shelves and shelves arranged to hook over the said hooks and engage the partitions.

In testimony that I claim the foregoing as my invention I have signed my name, in presence of two witnesses, this 21st day of December, 1903.

BERNARD R. GREEN.

Witnesses:

FREDK. HAYNES,
HENRY THIEME.