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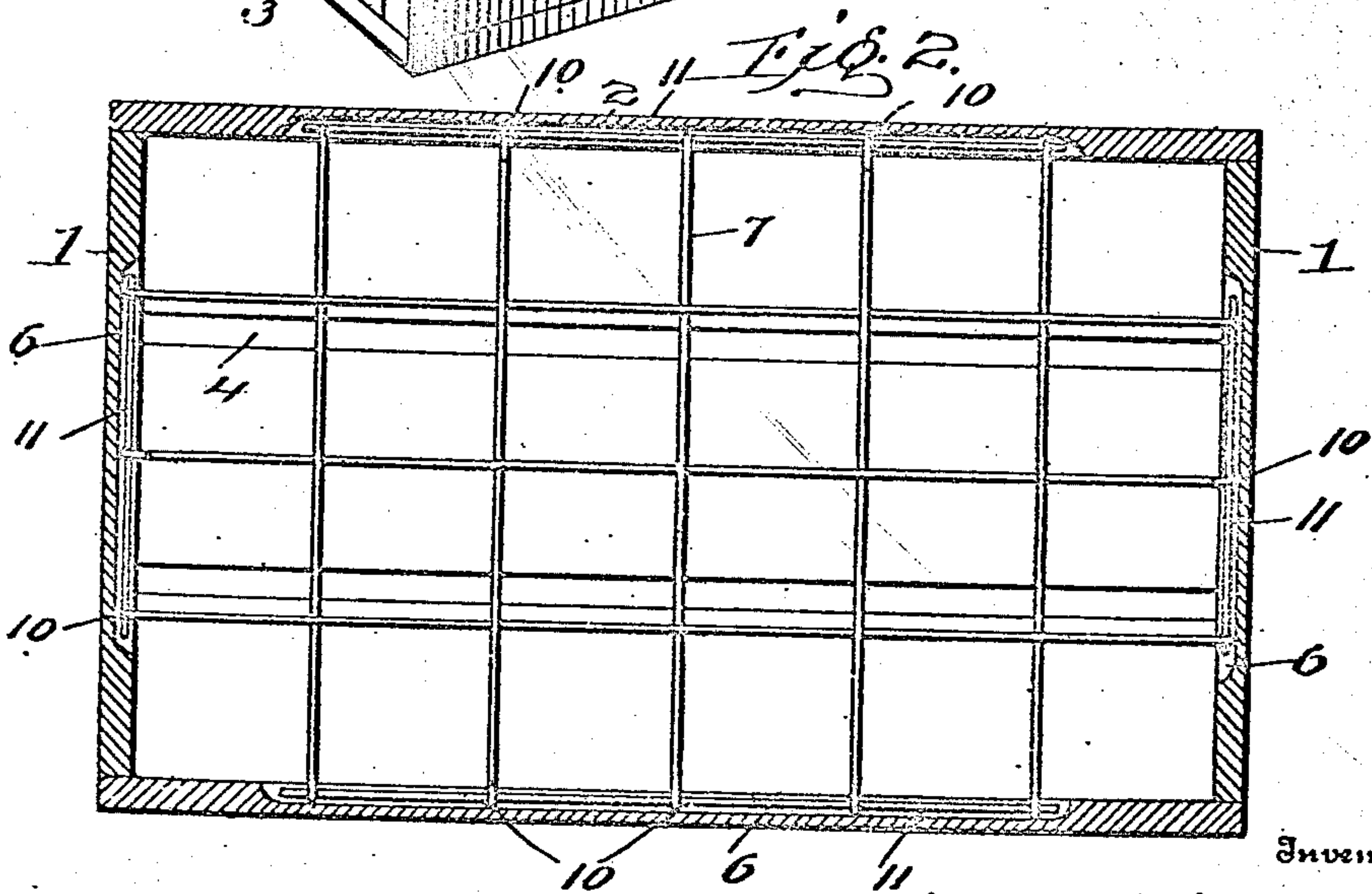
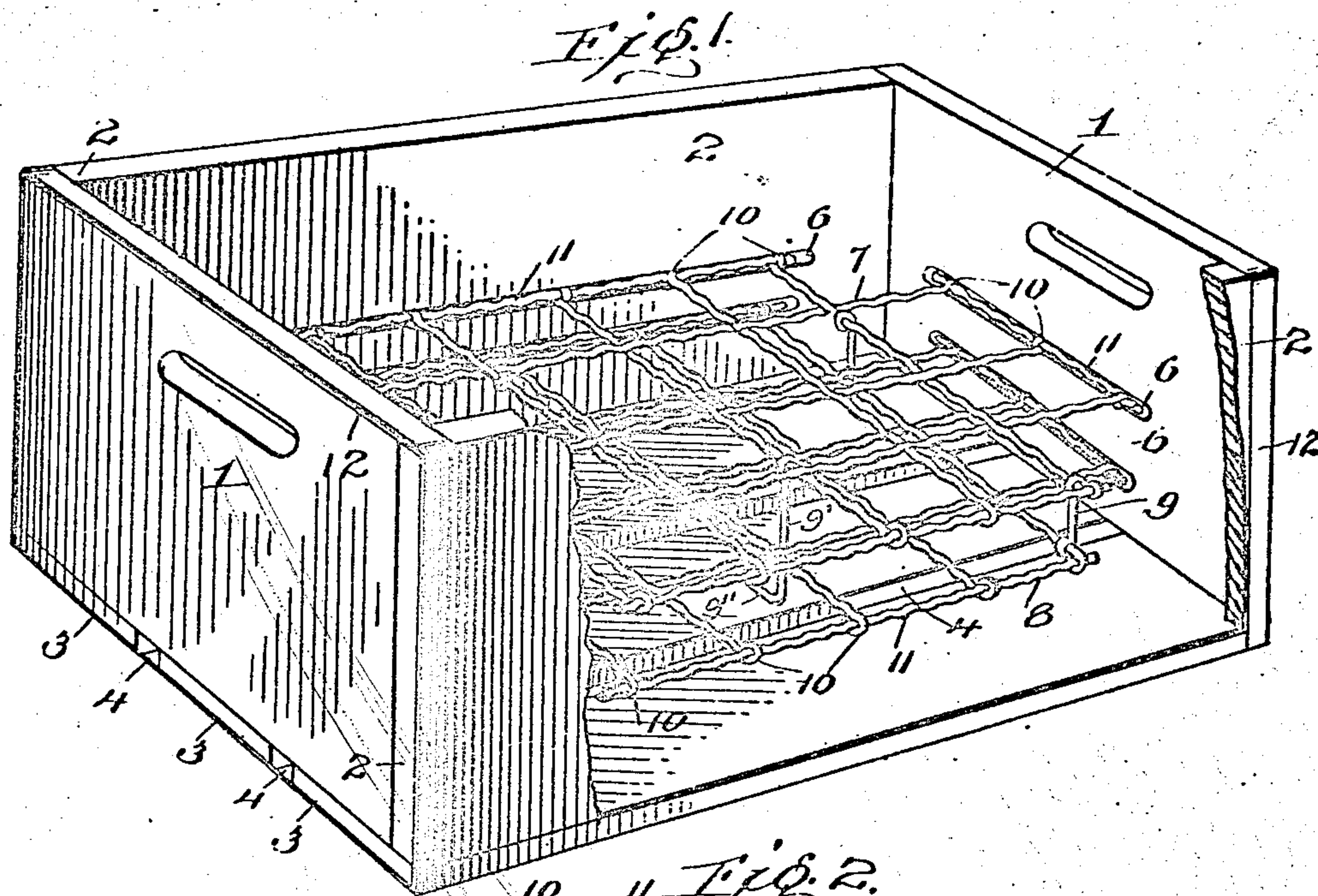
CRATE.

APPLICATION FILED JULY 30, 1906.

899,010.

Patented Sept. 15, 1908.

3 SHEETS—SHEET 1.



Witnesses

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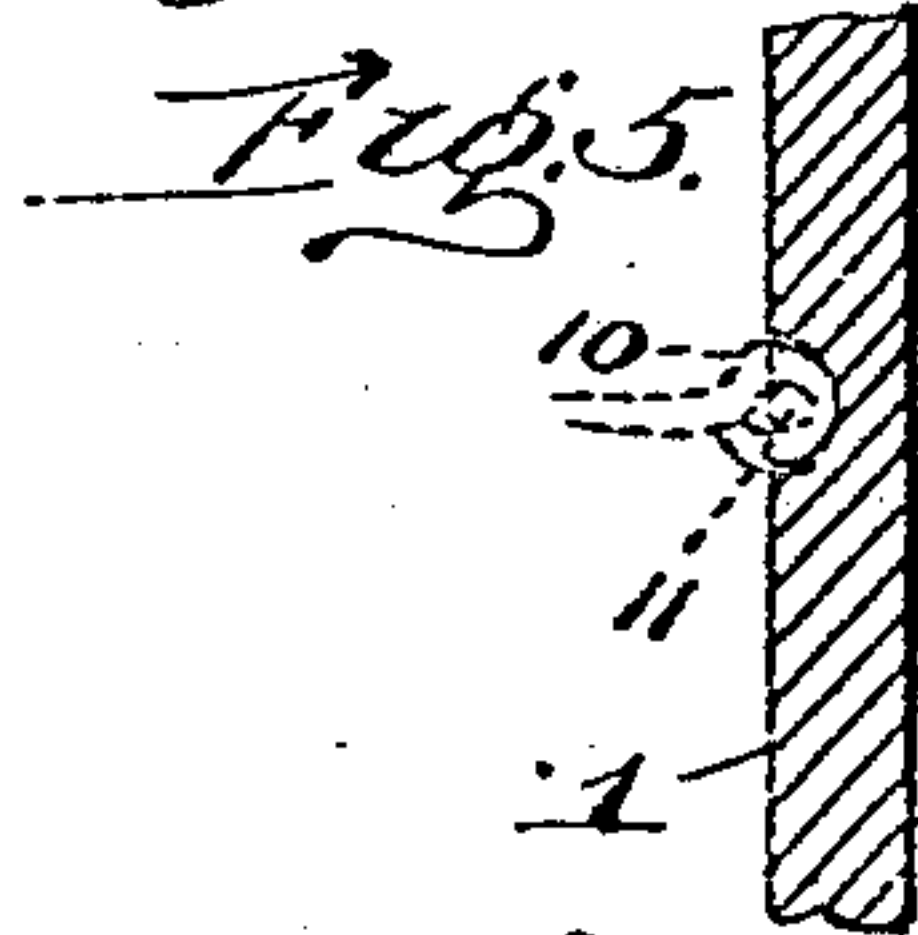
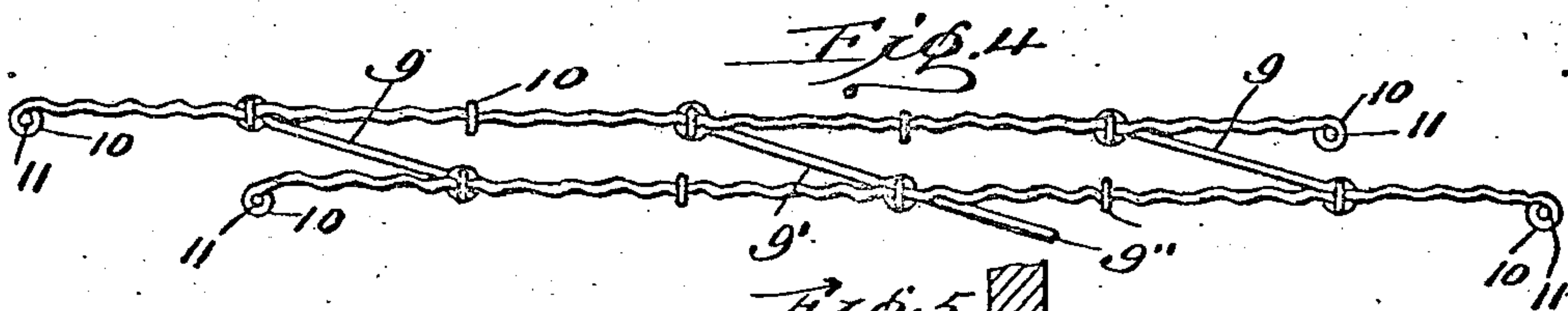
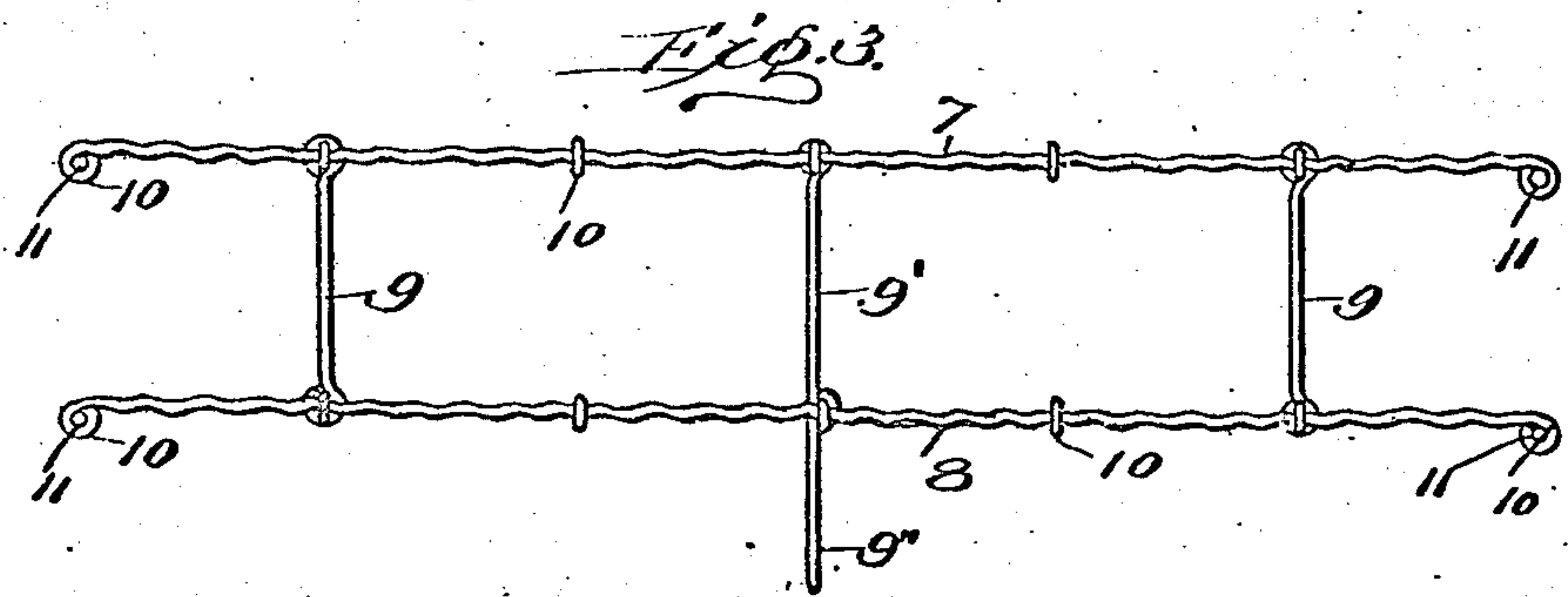
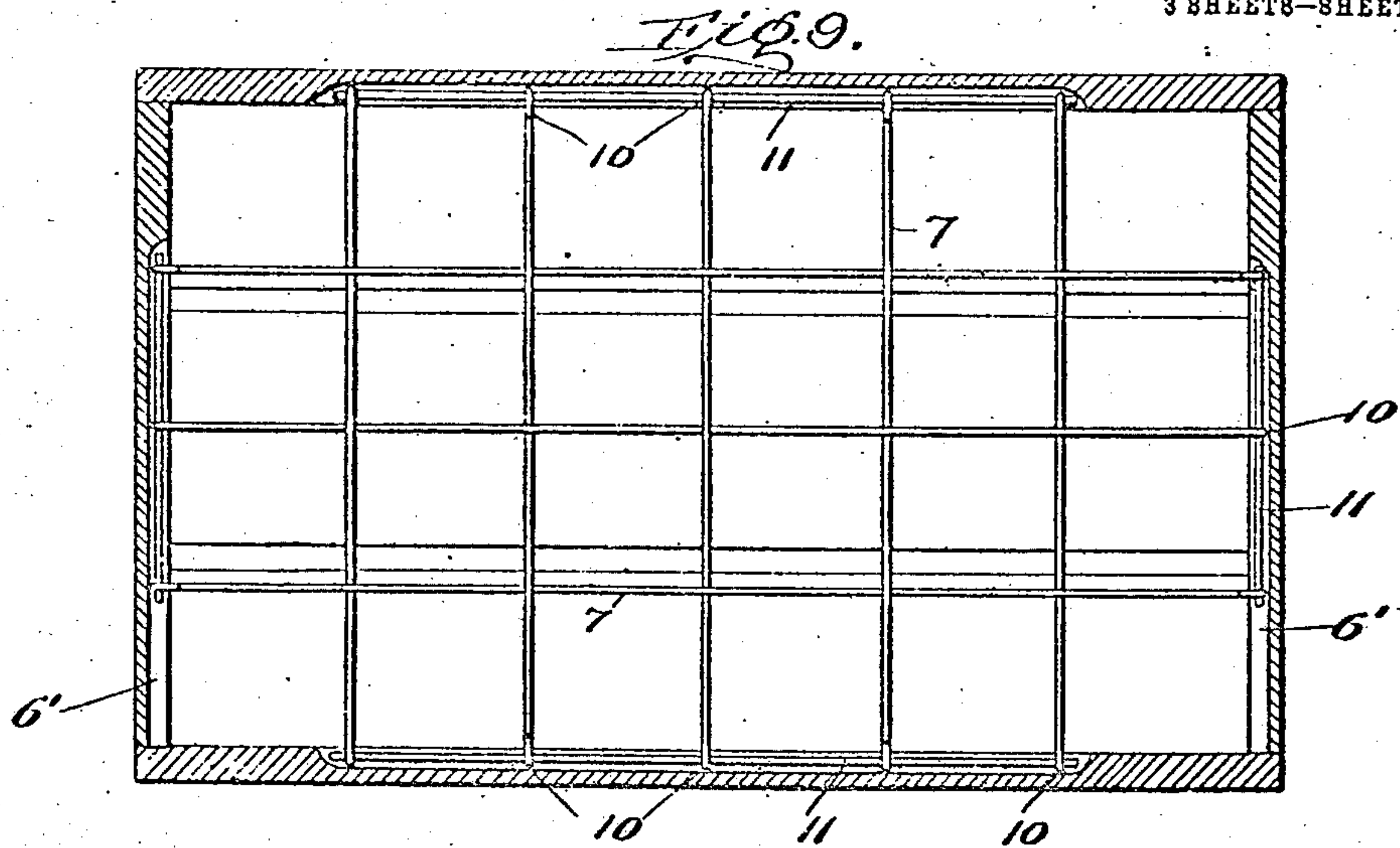
CRATE.

APPLICATION FILED JULY 30, 1908.

899,010.

Patented Sept. 15, 1908.

3 SHEETS—SHEET 2.



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3 SHEETS—SHEET 3.

Fig. 6.

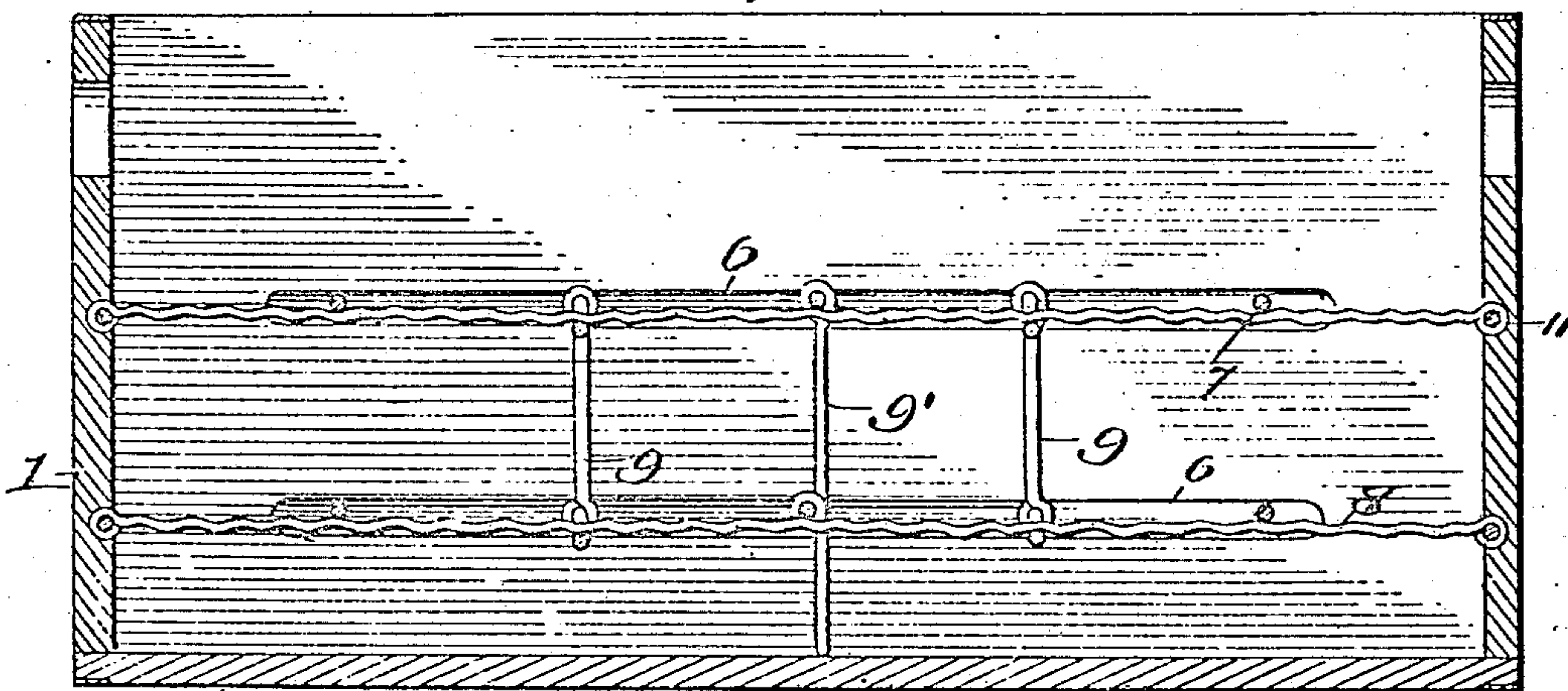


Fig. 8.

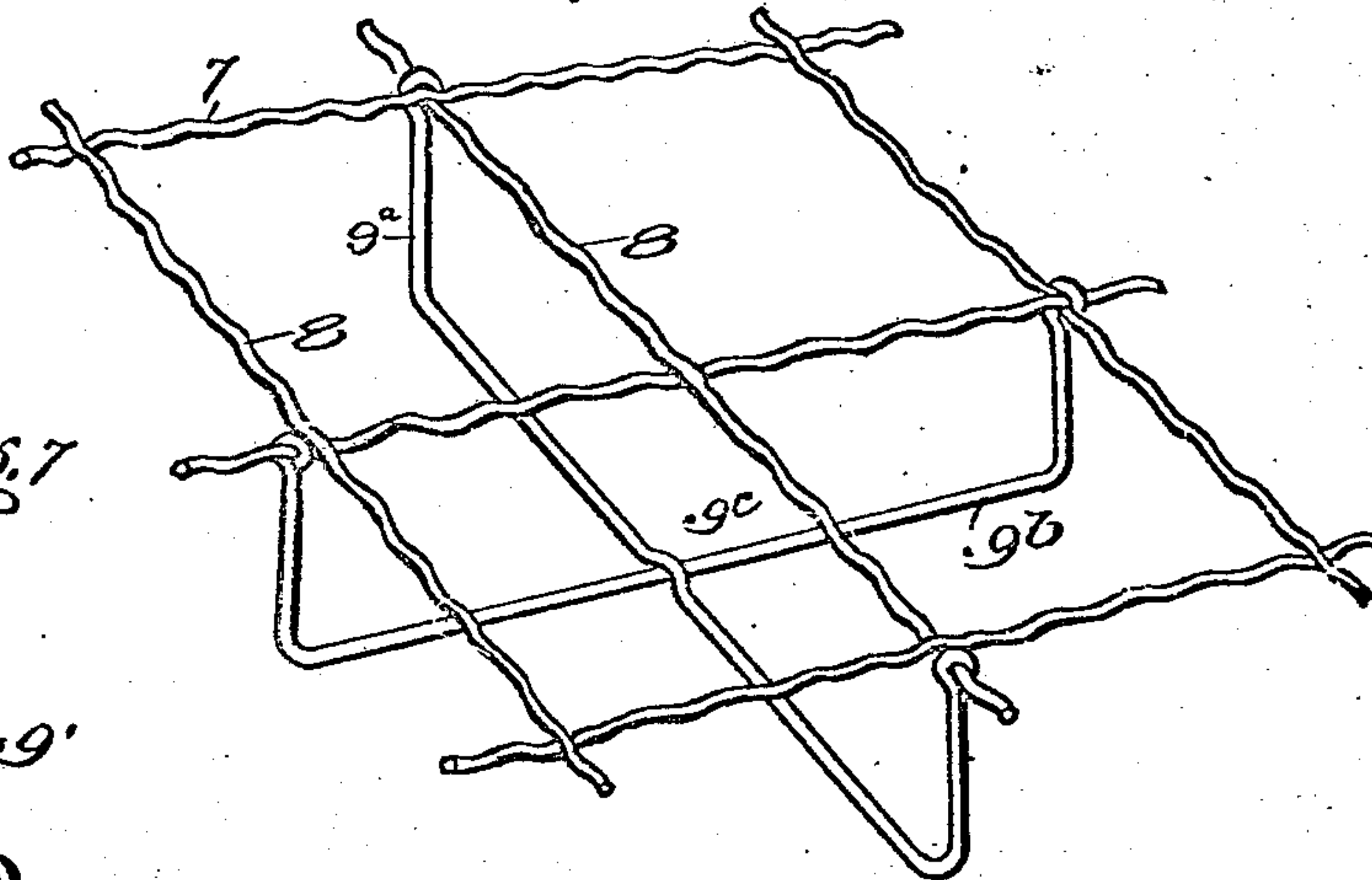
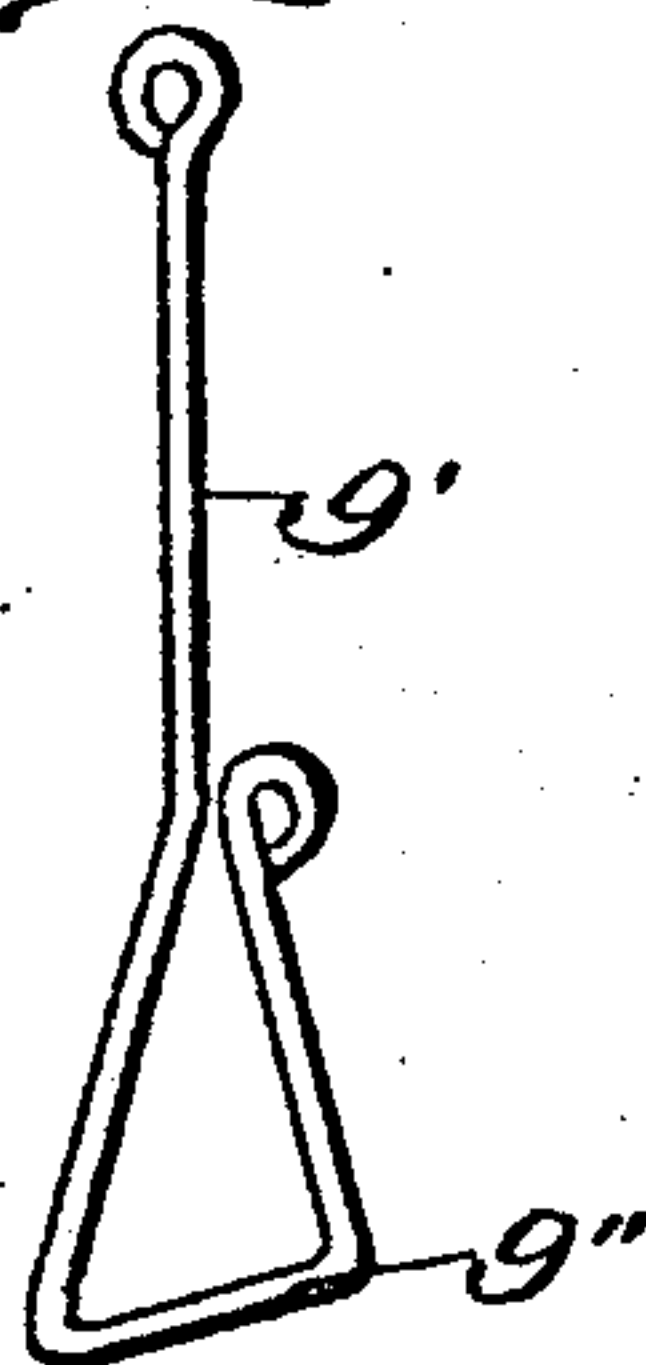


Fig. 7.



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UNITED STATES PATENT OFFICE.

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TO SAID SCHOEPL.

CRATE.

No. 899,010.

Specification of Letters Patent.

Patented Sept. 15, 1908.

Application filed July 30, 1906. Serial No. 323,442.

To all whom it may concern:

Be it known that we, FRIEDRICH C. H. HAUGK and JOSEPH F. SCHOEPL, citizens of the United States, residing at Baltimore city, in the State of Maryland, have invented certain new and useful Improvements in Crates; and we do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to improvements in crates and particularly to such as are adapted for receiving beer bottles and the like.

Among the several objects in view is the reduction of the expense, weight and size of the crate without a reduction of its capacity.

With these and further objects in view the invention comprises the combination with an inclosing boxing, of a double grating arranged therein and having terminal rods terminating short of the corners of the boxing.

The invention further comprises certain other novel constructions, combinations and arrangements of parts as will be hereinafter fully described and claimed.

In the accompanying drawings:—Figure 1 is a perspective view of a crate embodying the features of the present invention, one of the sides being broken away to disclose the interior of the structure. Fig. 2 is a horizontal section through the same taken on the plane of the upper grating and showing the upper grating in plan. Fig. 3 is an edge view of the double grating detached with the gratings spread the full distance apart. Fig. 4 is a similar view of the same with the gratings in a partially closed condition. Fig. 5 is an enlarged, detail view of a fragment of one of the ends of the crate indicating the size of the terminating eyes of the rods of the grating with respect to the grooves. Fig. 6 is a longitudinal, vertical, central section through a crate embodying the features of the present invention. Fig. 7 is a detail, perspective view of the supporting foot. Fig. 8 is a detail, perspective view of a fragment of the lower grating, illustrating a modified form of foot applied thereto. Fig. 9 is a view similar to Fig. 2 of a slightly modified form of crate.

Referring to the drawings by numerals, 1—1 indicates the ends of a boxing and 2—2 the sides thereof. The boxing is provided with a suitable bottom 3, preferably made up of separate strips producing slots 4—4 for ventilation purposes. Each side 2 and each end 1 is provided with a pair of horizontal grooves 6, one of the grooves being arranged above the other a distance equal to the distance apart of the two gratings hereinafter described, and each of said grooves terminating short of the corner of the boxing as clearly indicated in Figs. 1 and 2. A double grating is arranged within the boxing and is made up of an upper grating 7 and a lower grating 8 connected at suitable points by links 9—9. Each of the gratings 7 and 8 is made up of parallel rods extending longitudinally of the boxing and parallel rods extending transversely of the boxing, the first set of rods, of course, extending at right angles with the second set of rods and thus blocking off the space within the boxing into squares. The end of each rod of each grating 7 and 8 terminates in an eye 10 which surrounds a terminal rod 11 lying within the respective groove 6, the eye 10 being of slightly larger circumference than the groove. It is to be observed that each of the terminal rods 11 is slightly shorter than its respective groove 6, and, therefore, of course, does not extend to the corners of the boxing, the cells or squares at the corners of the boxing being completed by the side and end walls of the boxing while the squares centrally of the boxing are completed by the rods making up the grates. It is, of course, understood that each of the said squares is designed to receive a bottle.

In constructing crates embodying the features of the present invention the two ends are secured to the bottom and then the grating is inserted within its terminal rods lying within the grooves, the ends being forced toward each other sufficiently to cause the terminal eyes to slightly compress the wood of the ends and thus form a firm engagement therewith for making the grating rigid. The sides are next forced in place until the terminal eyes of the grating bite into or compress the wood of the sides sufficiently to permit the terminal rods of the sides of the grat-

ing to lie within the grooves of the sides of the boxing. The sides are then nailed to the ends and bottom, and then a reinforcing strip is preferably secured about each end of the boxing as indicated at 12.

By preference the rods from which the upper and lower gratings 7 and 8 are constructed are crimped to increase their rigidity and for preventing the slipping of one rod along a transversely arranged rod. It is to be observed from Fig. 2 that the rods are interlaced, that is to say one of the longitudinal rods is passed above one of the transverse rods, and then beneath the next transverse rod and above the next, etc. When so constructed the upper and lower gratings are very firm and solid and are not given to distortion under strains, but retain the cells in their proper size and shape regardless of any reasonable amount of jarring and straining. The links 9 are simply made of rods formed with an eye at each end, the eye at the upper end surrounding one of the rods of the upper grating and the eye at the lower end surrounding one of the rods of the lower grating. Thus the two gratings are retained against separation beyond the distance apart of the grooves, and at the same time when the gratings are in condition for shipment outside of the boxing they are free to be collapsed and caused to lie in contact, one upon the other. In Fig. 4 there is seen a grating in a partially collapsed condition, the entire collapsing of the gratings not being illustrated owing to a confusion of lines, which is obviated by the showing of the gratings in the condition just prior to the complete collapse.

By the use of the enlarged terminal eyes and the terminal rods which are crimped, the several rods of the grating are prevented from any lateral movement within the boxing, and the termination of the terminal rods short of the corners leaves the boxing strong and capable of resisting shocks and jars to which it is subjected in use. Furthermore, by the use of the gratings the size of the boxing may be materially reduced over the former wooden gratings heretofore used. This is decidedly advantageous in shipping or storing of the crates, and, of course, incidentally saves in the expense of shipment and in the expense of production.

Arranged centrally of the double grating is a link 9' which is constructed in detail, as seen in Fig. 7, with an upper eye engaging one of the transverse rods of the upper grating, and a lower eye engaging one of the transverse rods of the lower grating. The body portion of the link 9', however, is extended past the lower grating and is preferably formed into a triangular foot 9'' which has its horizontal portion lying flat against the floor of the box. By using this foot the

double grating is strengthened materially and prevented from sagging. The foot is arranged preferably centrally of the grating, but, of course, it is obvious that a plurality of such feet may be provided if found desirable. The foot adds rigidity to the gratings and prevents the same from sagging down towards the bottom of the box when subjected to downwardly acting strains, as when struck by a heavy body. This obviates the danger of contracting the rods of which the gratings are formed, and thus prevents the ends of the rods from being withdrawn from the grooves of the sides and ends.

As seen in Fig. 9, if found convenient and desirable the ends of the boxing may be formed with grooves 6' instead of grooves 6, the grooves 6' extending at one end of the corner of the boxing so that when assembling the parts of the crate, one of the sides and two of the ends may be fixed to the bottom and then the gratings may be slid transversely of the boxing into the same, the end terminal rods of the gratings sliding longitudinally in the grooves 6'. After the gratings have been forced into place, the other side may be properly positioned and secured in place.

We have illustrated in Fig. 8 a modified form of foot which may be substituted for the foot 9, and which consists of a bale 9^c extending transversely of the grating and provided with eyes at its ends inclosing one of the bars. A similar bale 9^b extends longitudinally of the grating and is provided with eyes engaging one of the longitudinal bars. The two bales are thus pivotally mounted and the bale 9^a is formed with a loop at the point of crossing of the bale 9^b, so that both bales may have their horizontal portions resting upon the floor of the boxing. When it is desired to collapse the grating it is only necessary to swing the bale 9^a up to a horizontal position and the bale 9^b will be free to be similarly swung.

Having thus fully described our invention, what we claim as new and desire to secure by Letters Patent is:—

1. In a crate, the combination with boxing formed with horizontal grooves in its walls, of a grating arranged therein, said grating formed of rods having terminal eyes extending into said grooves and terminal rods formed of crimped material extending through said eyes and positioned in said grooves, for holding said eyes in position.

2. In a crate, the combination with a boxing of a grating secured within said boxing and formed of rods of crimped material, a similar grating spaced above the first mentioned grating, centrally positioned links connecting the rods of the upper and lower grating, some of said links formed with supporting members.

3. In a crate, the combination with boxing,
of upper and lower gratings arranged there-
in, links connecting said gratings, and an
angular foot formed integral with and pro-
5 jecting downwardly from one of said links
in position for engaging the floor of the
boxing.

In testimony whereof we affix our signa-
tures in presence of two witnesses.

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