

No. 856,131.

PATENTED JUNE 4, 1907.

F. E. CANDA.
GRATING.

APPLICATION FILED MAR. 22, 1907.

Fig. 1.

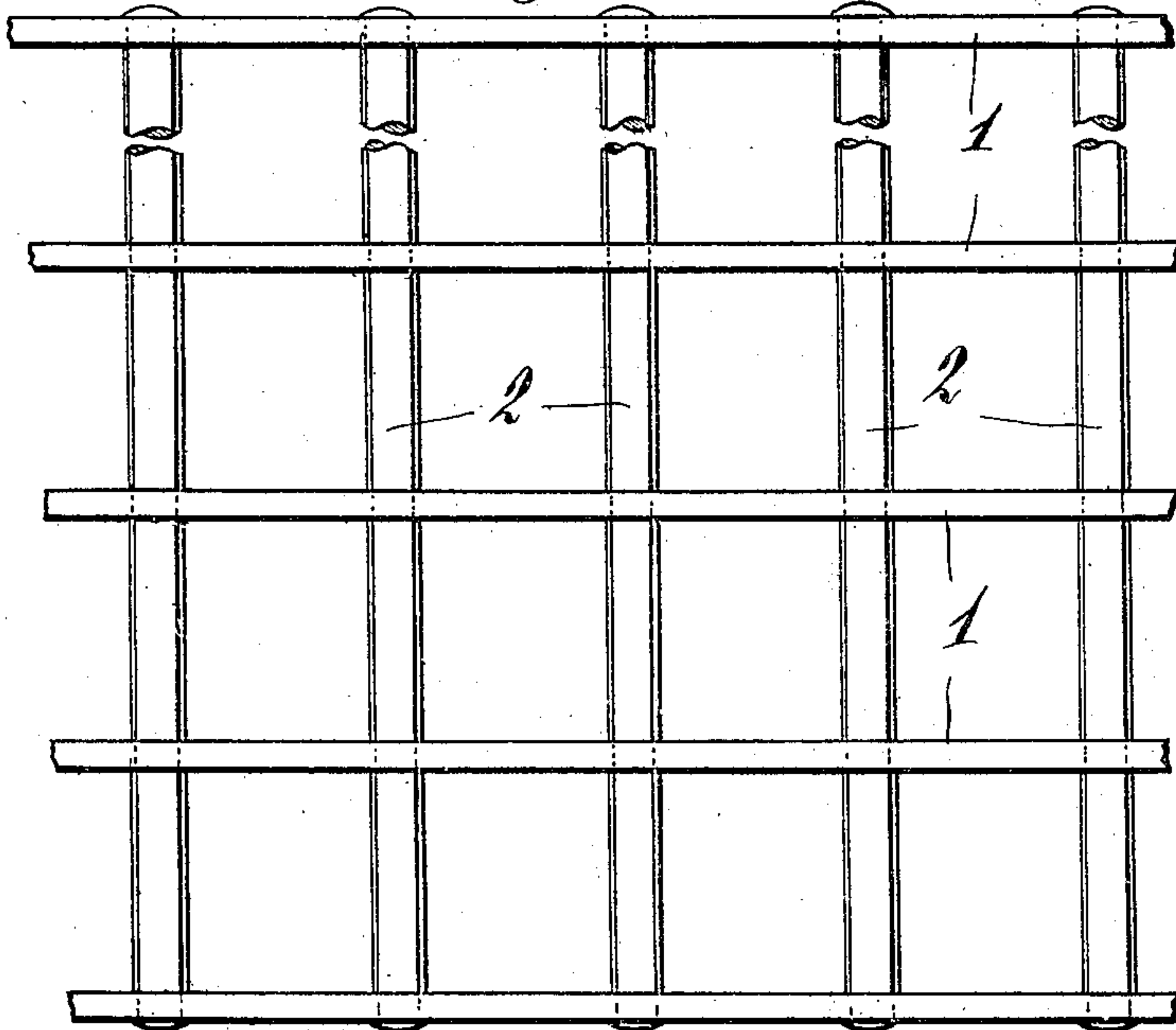


Fig. 2.

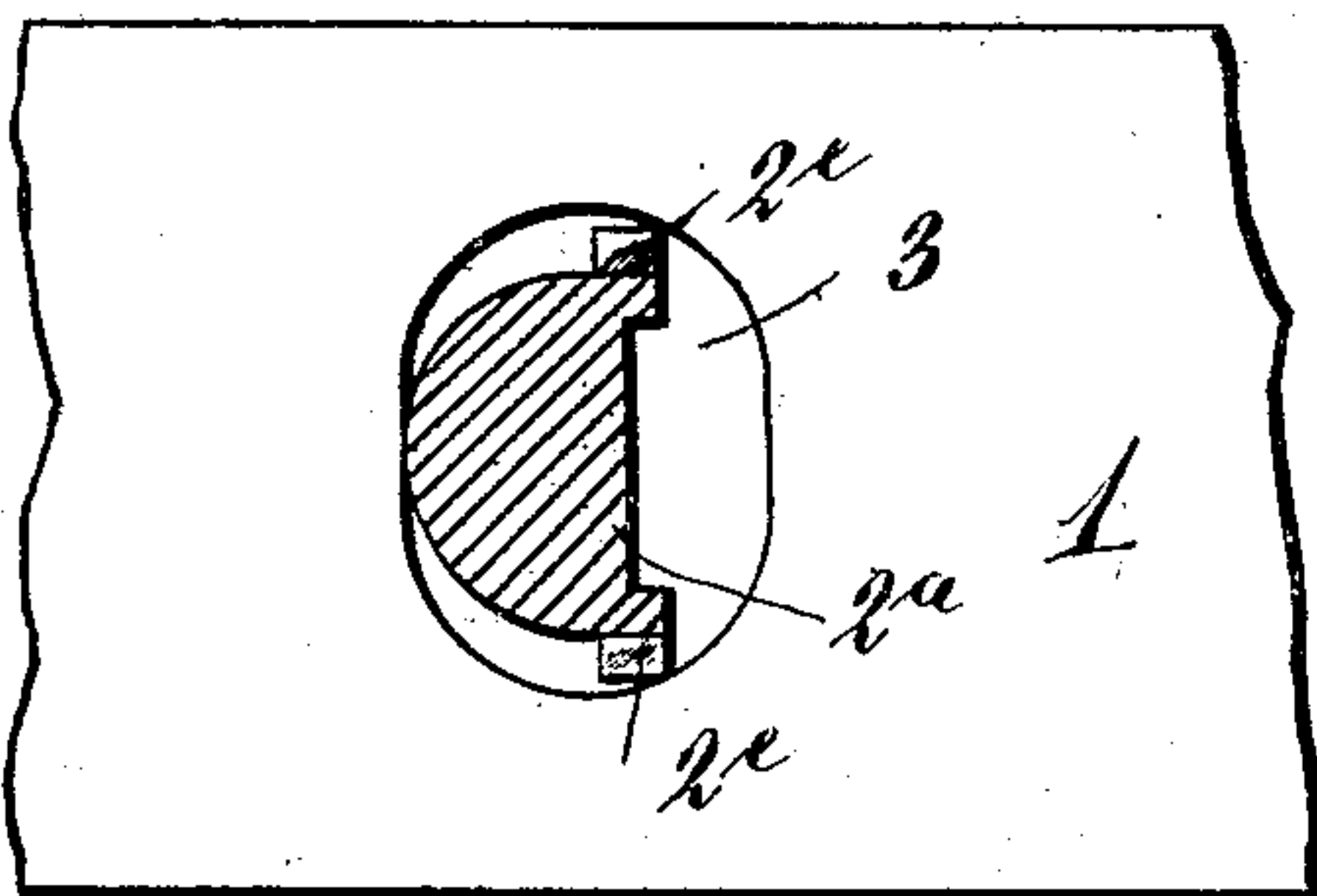


Fig. 3.

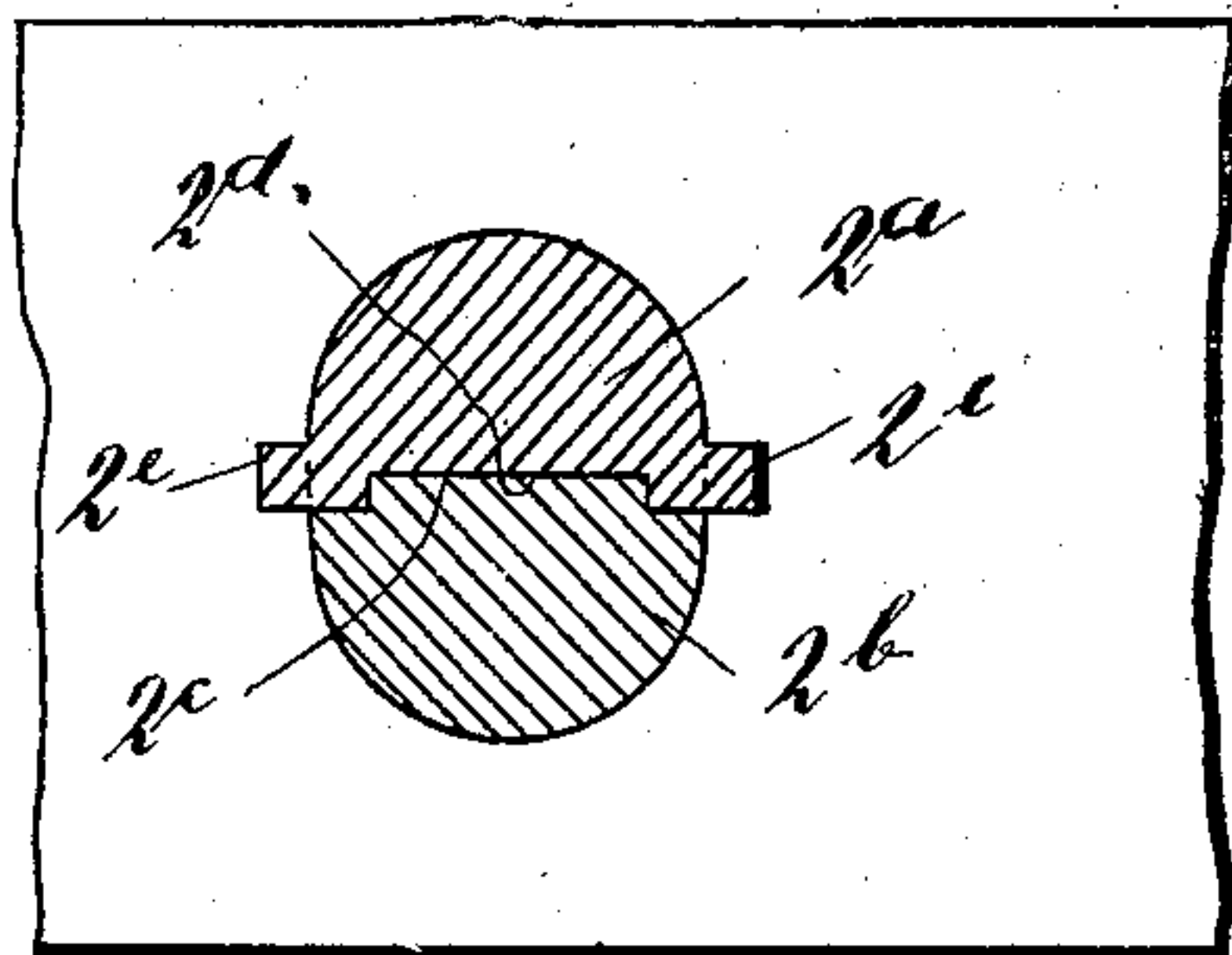
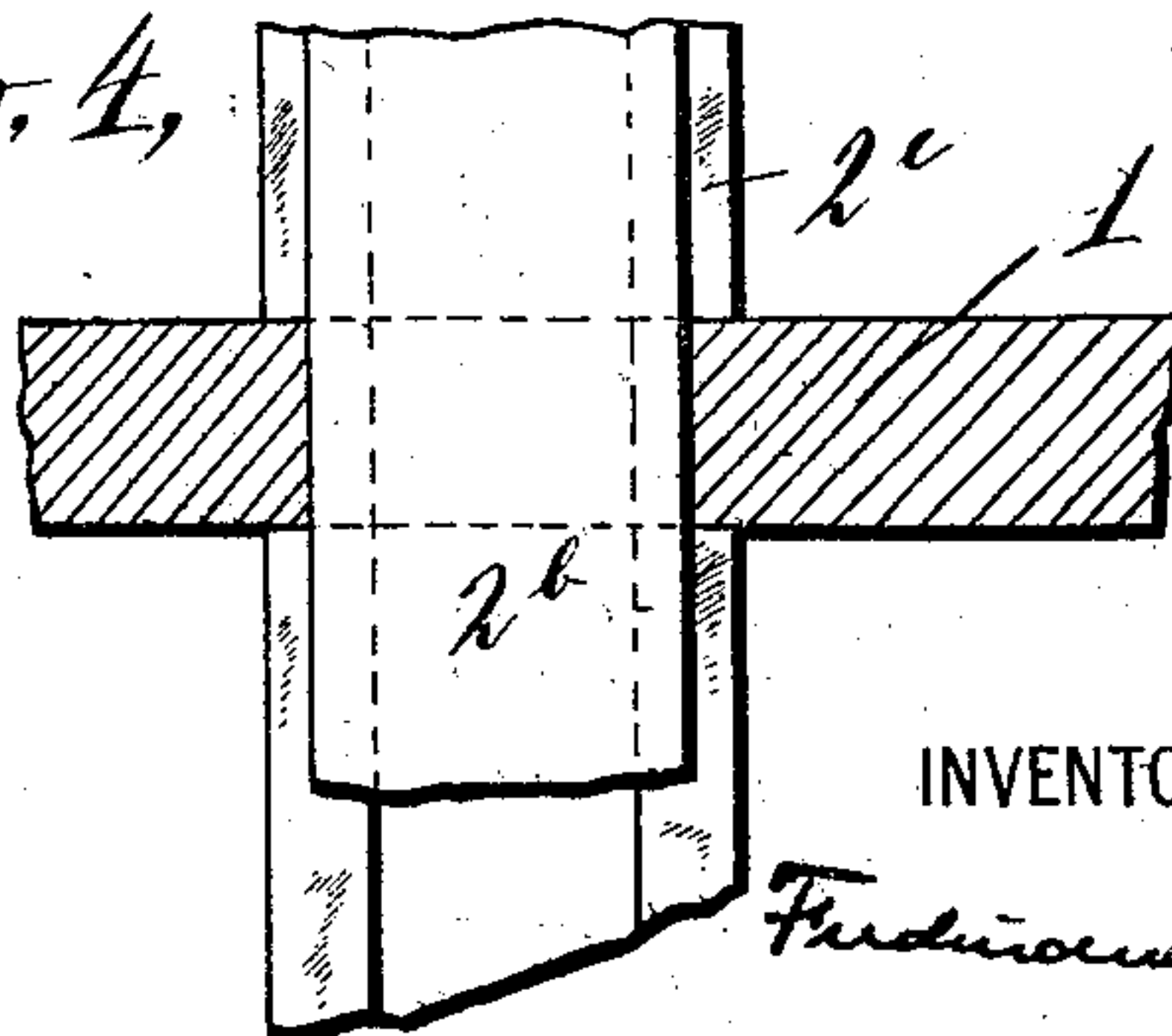


Fig. 4.



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GRATING.

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To all whom it may concern:

Be it known that I, FERDINAND E. CANDA, a citizen of the United States, residing at New York, in the county of New York and State of New York, have invented certain new and useful Improvements in Gratings; and I do hereby declare the following to be a full, clear, and exact description of the same, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in metallic gratings—particularly jail door and window gratings and the like.

My invention consists in the novel construction of the bars or members of the grating, whereby the easy manufacture of the same from rolled shapes is rendered possible, and whereby the bars are firmly locked in place.

The objects of my invention are to improve the construction of gratings, and particularly jail gratings and the like, to make the same more secure, to facilitate the construction of such gratings, and to permit the use of rolled shapes and reduce machine work to a minimum.

I will now proceed to describe my invention with reference to the accompanying drawing, and will then point out the novel features in claims.

In said drawing: Figure 1 shows a side view of a grating constructed in accordance with my invention; Fig. 2 is a detail top view of one of the cross bars of the grating illustrating the manner of introducing the vertical bars into the holes of such bars; Fig. 3 is a view similar to Fig. 2, but showing the complete vertical bar in cross section; and Fig. 4 is a detail elevation corresponding to Fig. 3.

These gratings, like most gratings for the purpose, consist of two series of members placed angularly, and preferably at right angles, to each other. According to my invention the members of one of said series, for example, the vertical members, each consists of two sub-members adapted to fit snugly together and which when so fitting together substantially fill the corresponding holes of the other series of members (that is to say, in the case assumed, the horizontal bars); one of each of such sub-members being provided with ribs or ears which prevent longitudinal motion thereof or of the horizontal bars with respect thereto.

Referring now to the accompanying drawings, numerals 1 designate one of the two series of cross bars of the grating, that is to say, the horizontal bars thereof, and numerals 2 designate the other series of members of the grating, that is to say, the vertical bars. As shown particularly in Figs. 2 and 3, the horizontal members 1 are provided with slightly oval openings 3 for the passage of the vertical bars 2. Each of the vertical bars 2 consists of two sub-members 2^a and 2^b, one of said members having a tongue 2^c fitting within a groove 2^d of the other, and one of said sub-members, for example member 2^a, having ribs 2^e. These ribs 2^e are interrupted at intervals corresponding to the distance between the horizontal bars.

In assembling the bars of the grating, the horizontal bars 1 are first placed at suitable distances apart, and then the sub-members 2^a of the vertical bars 2 are inserted endwise, being turned in positions at right angles to their final positions, as indicated particularly in Fig. 2. The holes 3 being oval, permit the passage of the ribs 2^e of these members 2^a when said members 2^a are turned at right angles to their final position. When the members 2^a are in position with the notches in their ribs 2^e opposite the horizontal bars 1, said sub-members 2^a are turned to final position, and then the locking members 2^b are inserted lengthwise; after which the ends of the bars 2 are headed over. It is then impossible to spread apart the horizontal members 1 because the ribs 2^e prevent; and it is equally impossible to spread apart the vertical bars 2. Moreover it is impossible to turn the vertical bars 2, because their sub-members 2^a and 2^b together form a bar of oval section seated within oval holes in the horizontal bars; and the tongue-and-groove joint between the members 2^a and 2^b prevents the introduction of an instrument between them to pry them apart to permit the introduction of a saw.

Preferably the sub-members 2^a are formed of very hard steel, such as hardened chrome steel, which cannot be cut or drilled. The sub-members 2^b may be of softer steel, for even if the members 2^b be sawed through to the edges of the ribs 2^e, since these ribs cannot be sawed and since the tongue portions of members 2^b will still remain uncut (the ribs 2^e preventing the saw from reaching them) enough metal still remains in mem-

bers 2^b to hold the bars 2 together. It is not even necessary that the members 2^a shall be soft enough at the ends to permit them to be headed-over or riveted, as the heading-over or riveting of members 2^b suffices to lock the members 2^a and prevent them from being removed.

What I claim is:—

1. A grating comprising in combination two intersecting series of members, one of said series having apertures of non-circular section for the passage of the members of the other series, the members of such second series consisting of sub-members longitudinally movable, one sub-member of each such composite member provided with one or more longitudinal ribs interrupted at intervals, the joint section of the sub-members of each such composite member at the points of interruption of the ribs being non-circular and corresponding substantially in shape and size to said apertures in the first series of members.

2. A grating comprising in combination two intersecting series of bars, one of said series having apertures of non-circular section for the passage of the bars of the other series, the bars of such second series consisting each of sub-bars longitudinally movable, and having a tongue-and-groove connection with each other, one sub-member of each such composite bar provided with one or more longitudinal ribs interrupted at intervals corresponding to the distance between the bars of the first series, the section of each such composite bar at the points of interruption of its ribs being non-circular and corresponding substantially in shape and size to said apertures in the first series of bars.

3. A composite grating bar comprising two longitudinal members, one provided with one or more longitudinal ribs interrupted at intervals, the section of such composite bar at the points of interruption of the ribs being non-circular.

4. A composite grating bar comprising two longitudinal members having a tongue-and-groove connection, one of said members provided with one or more longitudinal ribs interrupted at intervals, the section of such composite bar at the points of interruption of the ribs being non-circular.

5. A sub-member of a grating bar consist-

ing of a bar provided with one or more ribs interrupted at intervals, one longitudinal face of said bar being provided with a longitudinal channel for the reception of a tongue of a coacting sub-member.

6. In a grating, the combination with a series of bars having non-circular apertures for the passage of intersecting bars, of a series of intersecting bars passing through said apertures and provided each with one or more ribs, interrupted at intervals, corresponding to the distance between the bars of the first series, said ribbed bars of a size and shape adapting them to pass through said apertures when turned into one position, and to be held by said ribs against such passage when turned into another position, and locking bars adjacent to said ribbed bars and filling said apertures in the bars of the first series.

7. In a grating, the combination with a series of bars having non-circular apertures for the passage of intersecting bars, of a series of intersecting bars passing through said apertures and provided each with one or more ribs, interrupted at intervals, corresponding to the distance between the bars of the first series, said ribbed bars of a size and shape adapting them to pass through said apertures when turned into one position, and to be held by said ribs against such passage when turned into another position, and locking bars adjacent to said ribbed bars and filling said apertures in the bars of the first series, and having a tongue-and-groove engagement with said ribbed bars.

8. A composite grating bar comprising two longitudinal members, one of said members provided with one or more longitudinal ribs interrupted at intervals, and having also a longitudinal groove, the other member having a tongue fitting into said groove, said ribbed and grooved member of relatively hard material, and the tongued member of relatively softer material, the edges of the hard material preventing complete severing of the tongued bar.

In testimony whereof I affix my signature, in the presence of two witnesses.

FERDINAND E. CANDA.

Witnesses:

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