

(No Model.)

G. L. NORRMAN.
JAIL GRATING.

No. 481,915.

Patented Aug. 30, 1892.

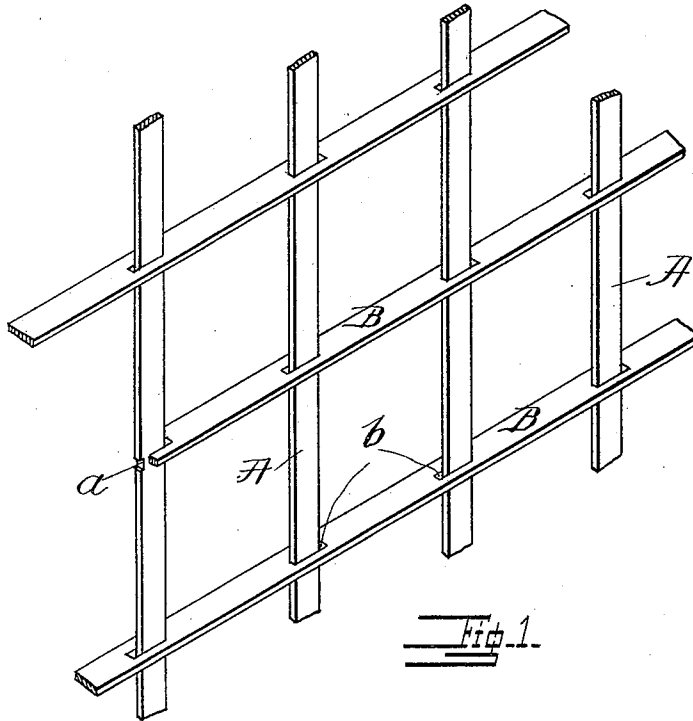


Fig. 1.

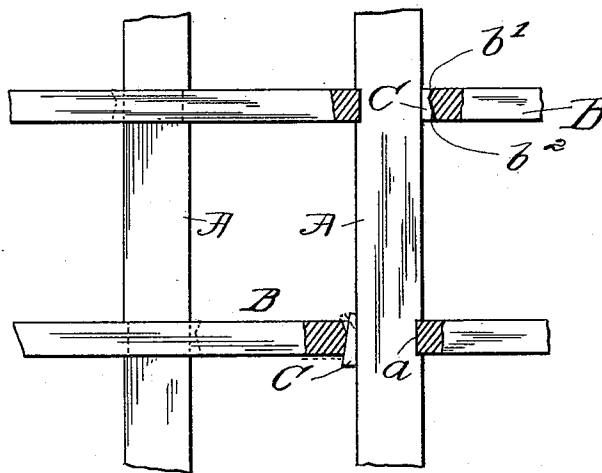


Fig. 2.

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UNITED STATES PATENT OFFICE.

GODFREY L. NORRMAN, OF ATLANTA, GEORGIA.

JAIL-GRATING.

SPECIFICATION forming part of Letters Patent No. 481,915, dated August 30, 1892.

Application filed April 13, 1892. Serial No. 429,058. (No model.)

To all whom it may concern:

Be it known that I, GODFREY L. NORRMAN, residing at Atlanta, in the county of Fulton and State of Georgia, have invented certain
5 new and useful Improvements in Jail-Gratings; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled
10 in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

This invention relates to the construction
15 of gratings of metal, the object being to approach as nearly as is practicable absolute impregnability from local attacks regardless of the perfection of the tools employed, the details of construction being hereinafter fully
20 described, and the features for which especial novelty is claimed being fully set up in the claims.

In the accompanying drawings, Figure 1 is a perspective view designed to show the manner
25 of bracing the parts one against another. Fig. 2 is a detail view, partly in section, showing the various steps in and toward the completion of the structure.

In the figures like reference-marks are uniformly employed in the designation of corresponding elements of construction in both
30 the views.

A are vertically-arranged bars, which are provided alternately on one side and then on
35 the other with rectangular notches *a*, for a purpose hereinafter explained. B are horizontal bars arranged one above the other at right angles to said bars A, and are provided with longitudinally-extending rectangular
40 slots or recesses *b*, corresponding in size to the width and thickness of the bars A. At one end of these recesses, being the end opposite the notch in the bars A when said bars
45 are in position, the notches *a* engaging the metal at the corresponding ends of the slots, said recesses are chamfered from the top to the center, forming a face *b'*, and from the
50 bottom to the center, forming the face *b''* in each recess. It is preferable that one of the faces *b'* or *b''* be longer than the other, which will throw the point of coincidence of the said faces either above or below the vertical cen-

ter of the bar B. The reason of this will be hereinafter set forth.

The key C is the locking-key and is in the
55 form at first introduction of a simple wedge, which is introduced hot bent, as shown in Fig. 2, (lower right-hand corner thereof,) and the upset filling the space left in the recess *b* by
60 the moving aside after introduction of the bar A and closely binding the parts together and itself in the said hole. After upsetting it is cut off flush with the top and bottom of the bar B, leaving no metal projecting.

In order to illustrate the advantages of this
65 invention over the prior state of the art, it will only be necessary to exhibit the safeguards against the escape of a criminal confined thereby.

First. It will be seen that in order to bend
70 the bars A aside they must be bent against their longest cross-sectional dimensions or edgewise, which would necessitate the use of a bar and a fulcrum of sufficient strength to perform said operation, neither of which is
75 furnished by the structure.

Second. To bend the bars B the bars A must be displaced or stretched, which is plainly impossible, or the keys C must be removed, which keys, by reason of their peculiar
80 construction and insertion, are practically impossible of extraction, as will now be described. Owing to their position, no tool could be so located as to drive them out even
85 if cut in two in the center with a drill. To pull half of one out after cutting in two pieces, even were it possible to so guide drill as to strike the said key exactly at the conjunction of the two sides *b'* and *b''* and so cut it
90 in two, so that it could be withdrawn were sufficient hold thereon obtained, is impossible, as no pulling tool can be gotten directly over the piece, and even then couldn't grasp it without cutting away the metal of the bar B around
95 said key. The key cannot be worked loose by straining the bars A and B, as said bars are held with certainty closely interlocked, the displacement of said key being the first prerequisite of any movement of one of said bars
100 relatively to the other. If desired, a suitable composite metal might be employed which will further render the structure impregnable by preventing the severance of the bars, which cutting is, however, too extended and difficult

a task to be attempted except to a small extent after otherwise loosening the structure.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent of the United States, is—

1. In a device of the class specified, the bars B, horizontally arranged and slotted, bars A, inserted in said slots and being notched to engage said bars B, and wedge-shaped keys 10 C, adapted to be driven into the recesses beside the said bars A, for the purpose specified.

2. In a device of the class specified, bars B, having slots therein, one end of each of said slots having inclined faces b' and b^2 , bars A, 15 notched and adapted to be inserted in said slots, and tapering keys driven into the said slots beside the bars A and being upset to fill the openings completely, for the purpose specified.

3. In a device of the class specified, bars B, 20 having slots therein, one end of each of said slots having inclined faces b' and b^2 , bars A,

notched and adapted to be inserted in said slots, and tapering keys driven into the said slots beside the bars A and being upset to 25 fill the openings completely and being cut off flush with the top and bottom of the bars B, substantially as and for the purpose specified.

4. In a device of the class specified, bars B, having slots therein, one end of each of said 30 slots having inclined faces b' and b^2 , one of which faces is longer than the other, bars A, notched and adapted to be inserted in said slots, and tapering keys driven into the said slots beside said bars A and being upset to 35 fill the openings completely and being cut off flush with the top and bottom of the bars B, substantially as and for the purpose specified.

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

GODFREY L. NORRMAN.

Witnesses:

A. P. WOOD,

D. MOREHOUSE.