N. BERSON.

MEANS FOR FASTENING FLOOR AND SIDEWALK GRATINGS.

APPLICATION FILED DEC. 12, 1913.

1,105,873. Patented Aug. 4, 1914.

Fig. 1.

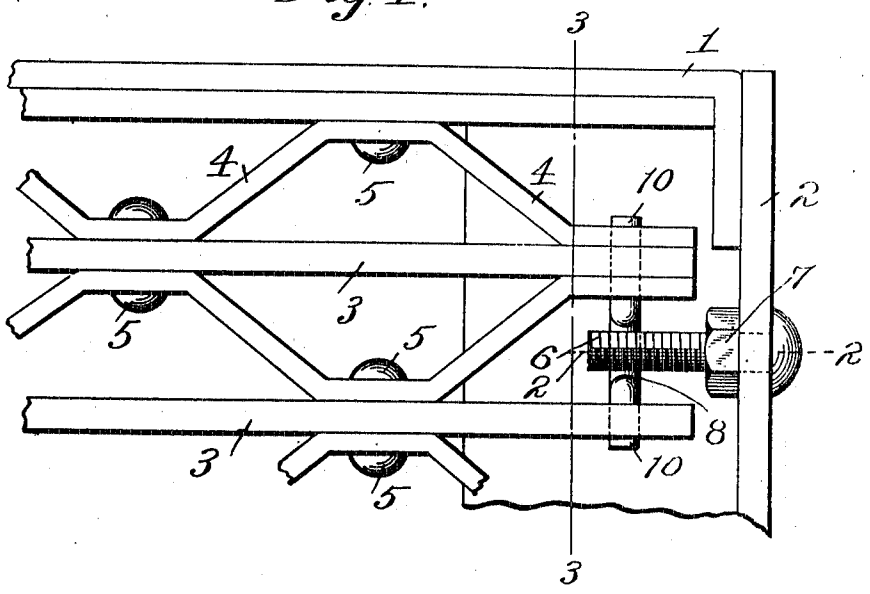


Fig. 2.

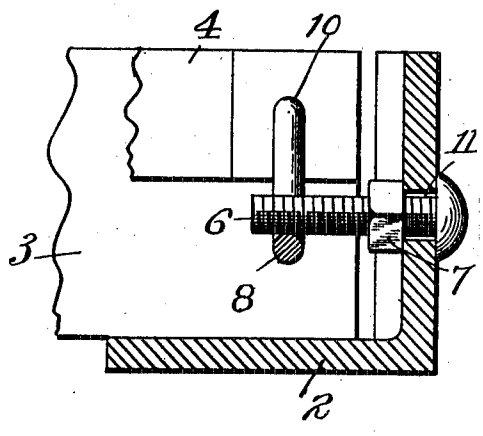
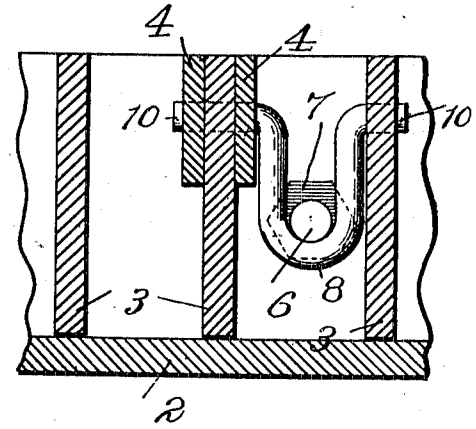


Fig. 3.



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UNITED STATES PATENT OFFICE.

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MEANS FOR FASTENING FLOOR AND SIDEWALK GRATINGS.

1,105,873. Specification of Letters Patent. Patented Aug. 4, 1914.

Application filed December 12, 1913. Serial No. 806,342.

To all whom it may concern:

Be it known that I, NATHAN BERSON, a subject of the Czar of Russia, residing at New York city, borough of Manhattan, county and State of New York, have invented certain new and useful Improvements in Means for Fastening Floor and Sidewalk Gratings, of which the following is a specification.

My invention relates to gratings such as are shown, for instance, in U. S. Letters Patent to Gustav A. Keller, No. 1,045,795, dated Nov. 26, 1912. Gratings of this and similar types, to which my invention is also applicable, usually have a plurality of parallel projecting bars at each end which, when the grating is in position in the floor or sidewalk, rest on the horizontal flanges of angle-irons forming the ends of rectangular metal frames in which each panel of the grating is set. These metal frames are usually set in cement in the openings in sidewalks or floors, which openings the grating is designed to protect.

The problem of providing a simple and efficient fastening for holding the gratings in their supporting frames of angle-iron or equivalent construction, which can be conveniently operated both in attaching and detaching, has presented some difficulty. Such fastening must be placed below the upper surface of the grating so as not to present any projections against which the feet of pedestrians may strike, and when so located it soon becomes buried in accumulated dirt, rust or ice which, added to the inaccessibility of its position, makes it difficult to detach when the grating is to be taken up, as well as difficult to install in the first place. I have invented a simple form of attachment for such gratings which overcomes these difficulties, and the best form of apparatus at present known to me, embodying the principle of my invention, is illustrated in the accompanying sheet of drawings, in which:

Figure 1 is a plan view showing one corner of a panel of such grating and supporting frame with my invention applied thereto. Fig. 2 is a longitudinal vertical section on line 2—2 of Fig. 1, and Fig. 3 is a vertical cross section on line 3—3 of Fig. 1.

Throughout the drawings like reference characters indicate like parts.

1 is one of the bent strips forming the sides of a panel of the grating described in the above mentioned patent to Keller, and 2 is one of the angle-iron end pieces to which the side strip 1 is riveted. Within this rectangular frame, and resting on the flanges of the angle-irons 2, 2, is the grating proper which consists of a series of straight bars or strips 3, 3, of considerable depth or width and considerable thickness sufficient to fit them to serve as girder members and support all the weight the grating is designed to carry, and a series of reticulated or bent strips 4, 4, of less depth and thickness which are alternated with strips 3, 3, and serve as spacing members for the same. The straight bars are arranged parallel to the side strips 1, 1, and the reticulated strips zig-zag back and forth between the straight bars or strips. The two are fastened together at every point of contact, preferably by rivets 5, 5. The straight bars and reticulated strips are so located that their upper edges are all in the same plane, as shown in Figs. 2 and 3, which plane coincides with the upper surface of the grating.

The bars 3 and strips 4 form parallel projections at each end of the grating, and in the holes provided for rivets in two of such adjacent projections (not used in this case) are inserted the projecting pivot ears 10, 10, of a swinging U-shaped structure 8, which is adapted to swing under the bolt 6 or other projecting member which extends substantially parallel to the horizontal flange of the angle-iron 2, and which bolt 6 is preferably mounted in the vertical flange of said angle-iron by insertion through a hole 11, in said flange and clamping thereto by lock nut 7. In operation the hole 11 is made larger than bolt 6, as shown, so that the bolt may be pointed slightly upward if necessary to facilitate swinging the U-shaped structure 8 under it. The lock nut 7 can then be easily screwed up with a spanner thereby fastening the bolt rigidly in a horizontal position with its serrated under surface bearing down on the swinging member 8. This prevents the swinging member 8 from being easily disengaged from the bolt and firmly fastens the grating in the frame. As many of these fastenings as desired may be used for each panel, and located at convenient points. One at each end is usually enough, however. When it is desired to take up the grating the fastening can be promptly detached by in-

serting a screw driver or other bar between member 8 and angle-iron 2 and prying the lower end of 8 free from the bolt 6 by swinging it outwardly.

While angle iron supports for the grating are here shown and described, other equivalent constructions affording supporting and confining means for the grating might be substituted.

Having, therefore, described my invention, I claim:

1. The combination with a grating having a plurality of substantially parallel projecting bars at each end, and a frame for holding the said grating having end supporting pieces for the grating, of a projecting member set in the frame and having a roughened under surface extending substantially parallel to the grating, and a swinging member pivoted in the projecting ends of the grating and adapted to engage the roughened under surface of the projecting member.

2. The combination with a grating having a plurality of substantially parallel projecting bars at each end and a frame for holding the said grating having end supporting pieces for the grating, of a projecting member loosely mounted in a hole in the frame, a swinging member pivoted in the projecting ends of the grating and adapted to engage the under surface of the projecting member, and means for fastening said projecting member rigidly in the opening in which it is loosely mounted, so that it will extend parallel to the bars of the grating.

3. The combination with a grating having a plurality of substantially parallel projecting bars at each end and an angle-iron frame for holding said grating, of a bolt set in a perforation in the vertical flange of the angle-iron and extending substantially parallel to the bars of the grating, and a swinging member pivoted in the projecting ends of the grating and adapted to engage the under surface of the projecting portion of the bolt.

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