W. E. IRVING.

MEANS FOR FASTENING FLOOR AND SIDEWALK GRATINGS.

APPLICATION FILED JULY 7, 1913.

1,105,791. Patented Aug. 4, 1914.

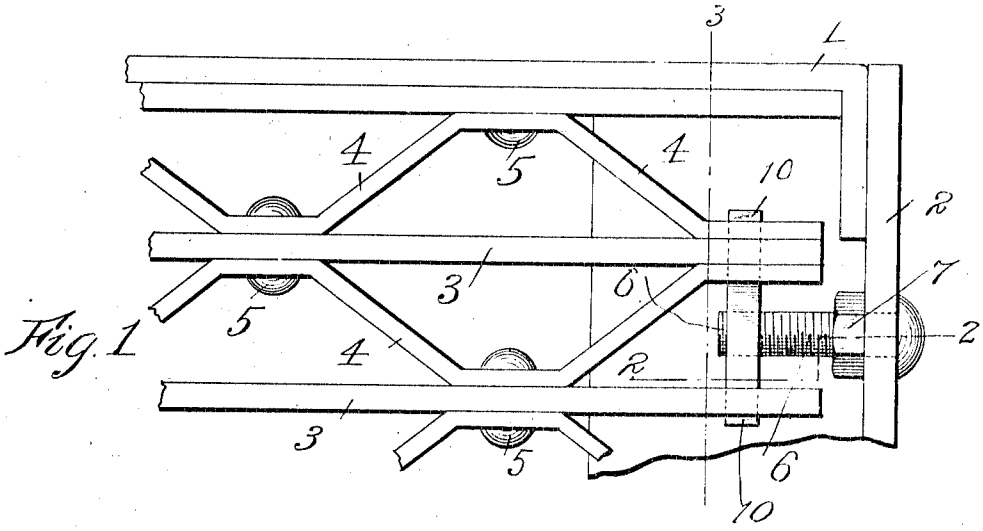


Fig. 1

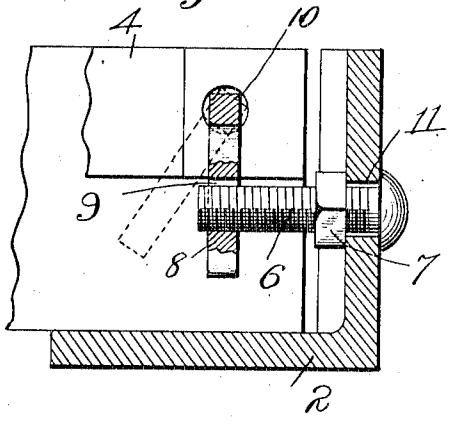


Fig 2.

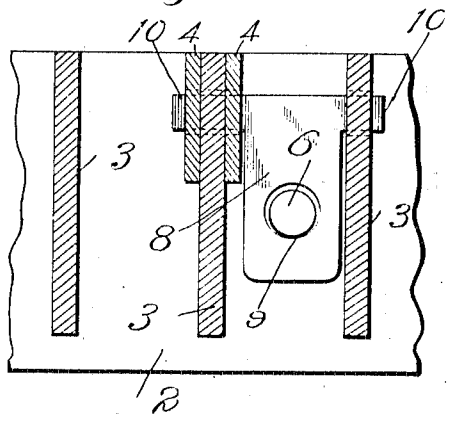


Fig. 3.

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MEANS FOR FASTENING FLOOR AND SIDEWALK GRATING.

1,105,791. Specification of Letters Patent. Patented Aug. 4, 1914.

Application filed July 7, 1913. Serial No. 777,799.

To all whom it may concern:

Be it known that I, WALTER E. IRVING, a citizen of the United States of America, residing at Glenbrook, Fairfield county, State of Connecticut, 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. A large number of gratings of this type have been and are being installed in the sidewalks of New York city to protect ventilating openings from the subway railroads, and from the basements of buildings.

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 become 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 parts being broken away, 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, 1, are bent strips forming the sides of a panel of the grating described in the above mentioned patent to Keller, and 2, 2, are angle iron end pieces to which the side strips 1, 1, are 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 plate 8, which plate has a hole 9 near its lower end adapted to receive the bolt 6 or other projecting member which extends substantially parallel to the horizontal flange of the angle iron 2, and 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 its insertion through hole 9. 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 lower edge of the hole 9 in 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 inserting 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, as indicated in dotted lines in the drawings.

A practical advantage arising from the use of the preferred form of swinging link shown is that it can be stamped out of the waste end pieces cut from strips 3 or 4, and thus be produced at a low cost. Also it cannot be detached from its pivotal connection to the grating and lost, as might occur if other forms of swinging links were employed.

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:

The combination with a grating having a plurality of projecting bars at each end, and a frame for holding the same having end pieces of angle iron, of a threaded bolt loosely fitting in a hole in the vertical flange of the angle iron, a nut for clamping said bolt rigidly to said angle iron in a position parallel to the grating, and a swinging plate perforated to engage said bolt and pivoted to the projecting bars of the grating.

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