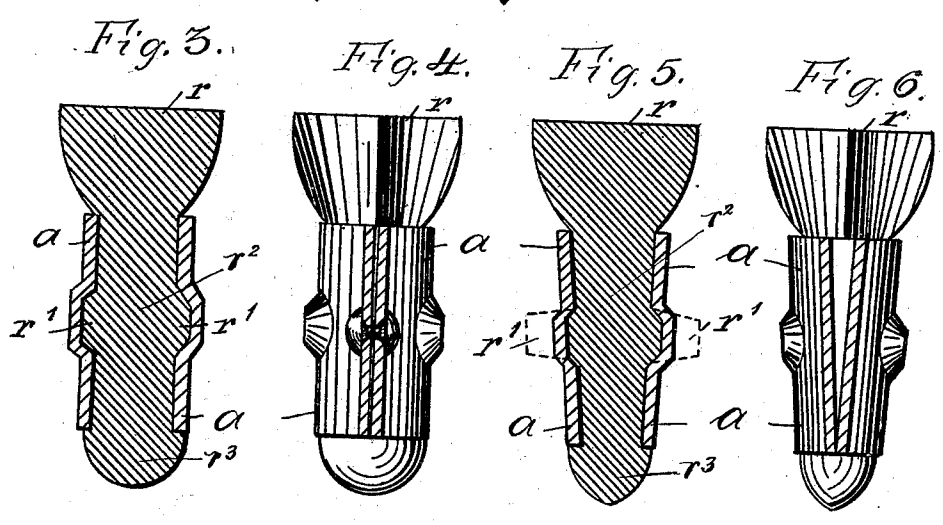
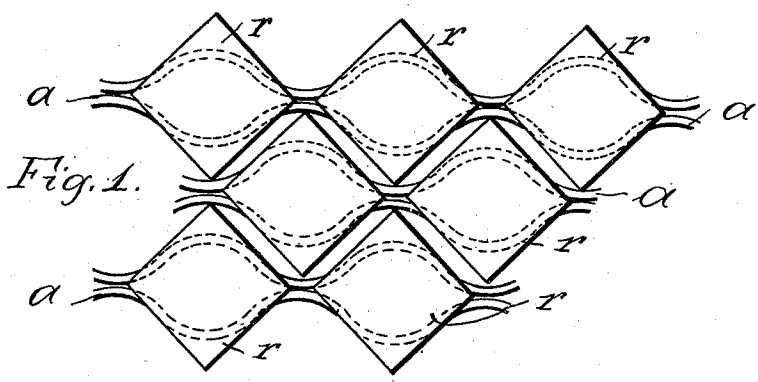
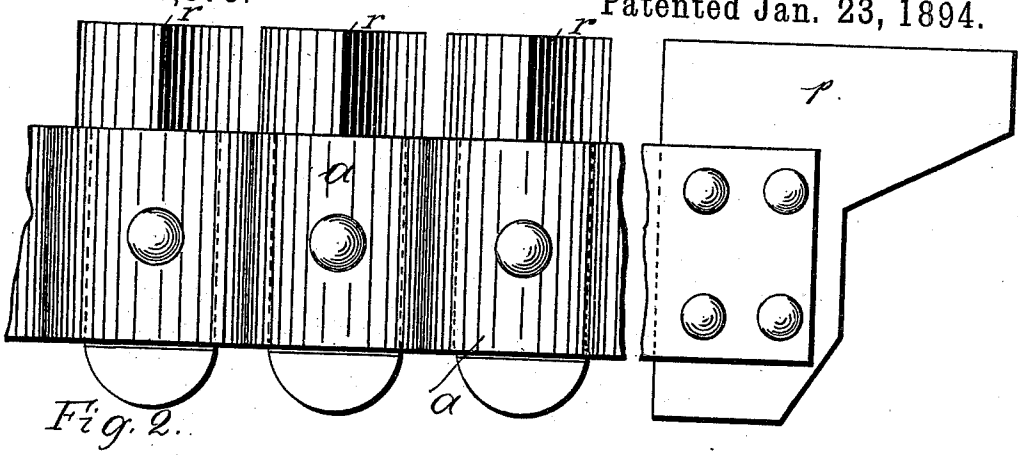


(No Model.)

C. TURNOFSKY.
GRATE BAR.

No. 513,373.

Patented Jan. 23, 1894.



Witnesses:
R. Herpich.
M. Haengel.

Inventor:
Carl Turnofsky
by Robert J. Fisher
Attorney

UNITED STATES PATENT OFFICE.

CARL TURNOFKY, OF BERLIN, GERMANY, ASSIGNOR TO BERLINER GUSS-STAHL-FABRIK UND EISENGIESSEREI HUGO HARTUNG ACTIEN-GESELLSCHAFT, OF SAME PLACE.

GRATE-BAR.

SPECIFICATION forming part of Letters Patent No. 513,373, dated January 23, 1894.

Application filed May 29, 1891. Serial No. 394,559. (No model.) Patented in Germany October 29, 1890, No. 57,674; in France April 23, 1891, No. 212,984; in Sweden April 25, 1891, No. 3,204; in Switzerland April 27, 1891, No. 3,468; in England May 19, 1891, No. 8,513; in Belgium May 19, 1891, No. 94,927; in Italy June 10, 1891, No. 29,899, and in Austria-Hungary April 17, 1892, No. 52,431 and No. 8,032.

To all whom it may concern:

Be it known that I, CARL TURNOFKY, a subject of the King of Prussia, German Emperor, and a resident of Berlin, in the Kingdom of Prussia, German Empire, have invented some new and useful Improvements in Grate-Bars, (for which patents have been obtained in Germany, No. 57,674, dated October 29, 1890; in Great Britain, No. 8,513, dated May 19, 1891; in France, No. 212,984, dated April 23, 1891; in Sweden, No. 3,204, dated April 25, 1891; in Switzerland, No. 3,468, dated April 27, 1891; in Belgium, No. 94,927, dated May 19, 1891; in Austria-Hungary, No. 52,431 and No. 8,032, dated April 17, 1892, and in Italy, No. 29,899, dated June 10, 1891,) of which the following is a specification.

My invention refers to grate-bars, in which the heads are formed by distinct parts, held movably or immovably by a special body or carrier, and my improvements in such grate-bars relate to the said carrying-body as well as to the separate heads, the former being constituted by flexible, non-combustible strips of corrugated sheet-iron, and the latter (the heads) being held between said strips by special projections taking into holes or cavities of the strips, as will be more fully described hereinafter.

In order to make my invention more clear, I refer to the accompanying drawings, in which similar letters denote similar parts throughout the different views, and in which—

Figure 1 is a plan of a portion of a grate composed of the improved grate-bars. Fig. 2 is a side-view of a part of a grate-bar. Fig. 3 is a vertical cross-section through a grate-bar, taken through the diagonal plane of a head. Fig. 4 is also a vertical cross-section through a grate-bar, taken, however, on a line between two heads, and Figs. 5 and 6 are views corresponding to those of Figs. 3 and 4, and representing a modification.

I compose each of my improved grate-bars of two flexible, non-combustible strips *a a* of corrugated sheet-iron, which are connected at both ends by special bearing-pieces *p*, Fig. 2,

consisting of cast-iron, and affording a broad and secure bearing. The said strips *a a* hold between themselves the shanks *r*² of the heads proper *r*, the latter extending over the upper edge of the strips, and forming the fuel bearing surface. The feet of the shanks are formed by hemispherical parts *r*³, which at their place of connection with the shanks proper are of a larger diameter than said shanks, so that said feet take under the under edge of the strips. The shanks are thus secured against any vertical movement by their heads and feet, and, further, against any horizontal movement by the undulatory configuration of the strips; they are, finally, secured against a rotatory movement by means of projections *r'* forming part of the shanks, and taking into corresponding cavities or holes provided within the strips *a a*. When employing holes for the reception of said projections, I prefer to give the latter a somewhat greater height, than otherwise, as has been indicated by dotted lines in Fig. 5. The vertical planes of the two strips of one bar may be perfectly parallel, as in Figs. 3 and 4, or may be at an incline, as in Figs. 5 and 6, according to the configuration of the respective under part of the bearing-pieces *p*.

The flexible non-combustible strips of the corrugated sheet-iron may have any height without hindering the access of air, wherefore any desired stability may be attained. Moreover, they may be made and divided into any length, which is very important for exportation, since any length of bar may be put together out of small pieces from the store. The strips may be connected with each other as well as with the bearing-pieces by means of rivets, as shown in the drawings, and I am enabled, by reason of my improved construction, to produce grate-bars of any required length and strength in a very short time and at a very low price.

Having now described the nature of my invention, I declare that what I desire to secure by Letters Patent of the United States is—

A grate-bar, composed of two flexible, non-

combustible strips *a a* of corrugated sheet-
iron, connected at both ends by special bear-
ing-pieces *p*, and holding between themselves
separate heads *r*, the latter being secured in
5 place by projections *r'* taking into holes of
said strips, for the purpose as described.
In testimony whereof I have signed this

specification in the presence of two subscrib-
ing witnesses.

CARL TURNOFISKY.

Witnesses:

FR. SPULING,

W. HAUPT.