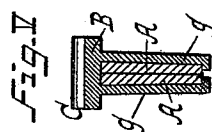
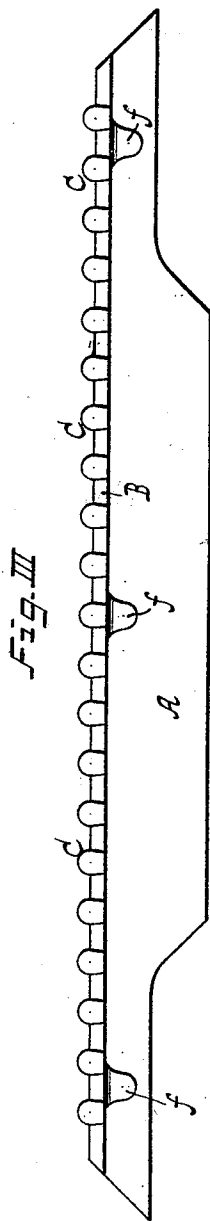
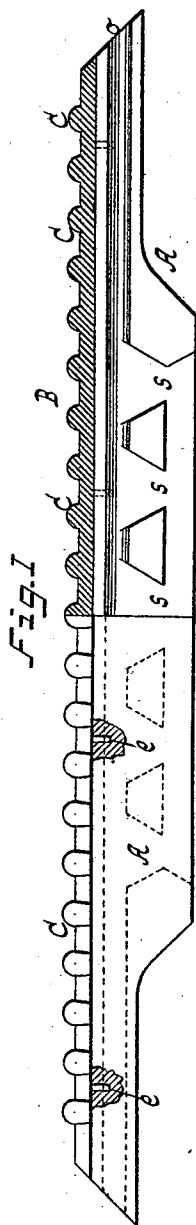
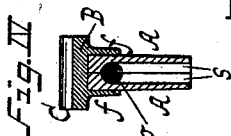
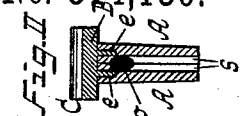


(No Model.)

J. M. SINCLAIR.  
GRATE BAR.

No. 514,136.

Patented Feb. 6, 1894.



WITNESSES:

R. H. Borkers  
G. L. Lyle.

INVENTOR

John M. Sinclair  
BY  
Chas. Wahlers  
ATTORNEY.

# UNITED STATES PATENT OFFICE.

JOHN M. SINCLAIR, OF BROOKLYN, NEW YORK.

## GRATE-BAR.

SPECIFICATION forming part of Letters Patent No. 514,136, dated February 6, 1894.

Application filed January 14, 1893. Serial No. 458,431. (No model.)

*To all whom it may concern:*

Be it known that I, JOHN M. SINCLAIR, a citizen of the United States, residing at Brooklyn, in the county of Kings, State of New York, have invented a new and useful Improvement in Grate-Bars, which improvement is fully set forth in the following specification and accompanying drawings.

My invention relates to improvements in grate bars, and consists of a grate bar formed of two longitudinal sections and a removable top section, the latter having depending pins or side pieces embracing parts of the said longitudinal sections.

It further consists of the combination of parts hereinafter set forth and claimed.

Figure I represents a partial side view and partial vertical longitudinal section of a grate bar embodying my invention. Fig. II represents a vertical cross section thereof. Fig. III represents a side view of a modification thereof. Fig. IV represents a vertical cross section of the bar shown in Fig. III. Fig. V represents a vertical section of another modification of my invention.

Similar letters of reference indicate corresponding parts in the several figures.

Referring to the drawings: A designates each of two side sections of the body of a grate bar, and B a top section upon said body, the said body sections being divided in the longitudinal plane of the bar. On the top section B are formed the teeth C, which extend across the bar, and usually project laterally therefrom as shown. Said top section B is detachably united to the body A, so that it may be entirely separated and removed therefrom, and hence the teeth C are rendered independent of the body, permitting their renewal at pleasure.

Various means may be employed for uniting the top section B to the body A, and in

Figs. I and II it has for this purpose dowel pins *e* entering suitable holes of the body, while in Figs. III and IV it has side lugs *f* embracing the top part of the body. In Fig. V, the top section B has cheeks *g* embracing the body A, both on the sides and on the under portions thereof.

In Figs. I to IV, inclusive, the side sections are shown as forming a hollow body, open at both ends as *o* and also open at the bottom, intermediate of the ends thereof, as at *s*, and by this arrangement of openings a circulation of air is provided in both a longitudinal and vertical direction through the bar for cooling it.

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

1. A grate bar consisting of longitudinal side sections and a top section provided with pins or cheek pieces embracing and securing said side sections, said parts being combined substantially as described.

2. A grate bar consisting of side sections forming a hollow body, and a removable top section having teeth thereon extending laterally therefrom, said top section having depending pins or cheek pieces embracing or securing said side sections together and to said top section, said parts being combined substantially as described.

3. A grate bar consisting of side sections, and a removable top section, the latter having depending cheeks embracing the sides of said side portions, said top section extending outside of said sides, said parts being combined substantially as described.

JOHN M. SINCLAIR.

Witnesses:

CHAS. WAHLERS,  
JAS. S. EWBANK.