T. F. BAKER.

Grating.

No. 207,476. Patented Aug. 27, 1878.

Fig. 1.

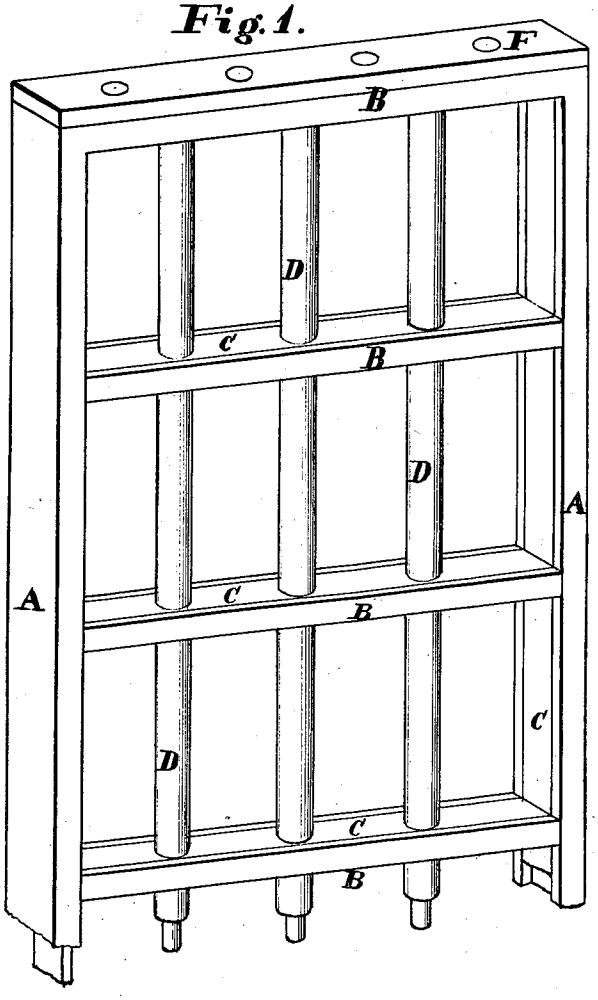


Fig. 2.

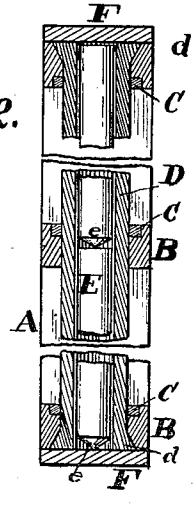
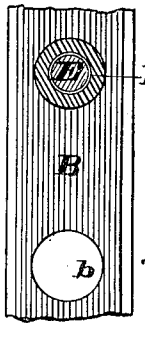


Fig. 3.



Attest.
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UNITED STATES PATENT OFFICE.

THOMAS F. BAKER, OF CINCINNATI, OHIO.

IMPROVEMENT IN GRATINGS.

Specification forming part of Letters Patent No. **207,476**, dated August 27, 1878; application filed June 8, 1878.

To all whom it may concern:

Be it known that I, THOMAS F. BAKER, of Cincinnati, Hamilton county, Ohio, have invented a new and useful Improvement in Gratings, of which the following is substantially descriptive:

This invention relates to a mode of constructing gratings and the component bars thereof, which renders them practically impregnable to clandestine attacks.

With this object in view, I construct the vertical bars which enter into the composition of a grating, each bar of two concentric members—that is to say, exteriorly of a tube, pipe, or sleeve of wrought-iron, riveted at top and bottom to horizontal cross-bars, and interiorly of a core, consisting of one or more cast-steel or other hard metallic cylinders, which, being capable of turning freely upon their axes, operate to quickly blunt the burglar or prison-breaker's saw, and thus baffle his attempts to sever the bar.

My invention is more especially designed for the gratings of jails, and intended to frustrate efforts of prisoners or others to saw asunder the bars of such gratings.

In the accompanying drawings, Figure 1 is a perspective view of a portion of a grating embodying my invention. Fig. 2 is a vertical section of portions of one of my composite bars. Fig. 3 is a horizontal section of the same, together with a top view of a portion of one of the horizontal bars.

A may represent two of the vertical, and B four of the horizontal, flat bars, which latter, being riveted or otherwise firmly secured to the former, constitute therewith the principal frame-work of the grating. These bars may be either wholly of steel or may be of wrought-iron, armed with steel facings C, riveted, welded, or otherwise firmly attached to them.

D are the exterior wrought-iron pipes, tubes, or sleeves, which, being passed vertically through circular orifices *b* in the horizontal bars B, are riveted to the uppermost and lowermost ones, as at *d*, and thus form the bond between the horizontal bars and stiles, and aid in retaining in proper place and securing from observation and from being tampered with the internal rotatable rods.

E are solid cylinders or rods of cast-steel or other tough and hard metal. These solid cylinders or rods are inclosed within the wrought-iron tubes or sleeves D, and may have pointed lower extremities, *e*. The length and consequent number of these cylinders are dependent on ability in the manufacturer to produce them of such a hard temper as to resist a burglar's drill or saw, and, while so making them, to have them so nearly straight as to permit them to turn freely on their axes. These cylinders might each one be as long as the vertical height of the grating, but for the fact that the process of tempering always operates to bend them to some extent. This deflection in the process of tempering, increasing with the length of the rod, practically limits the length in rods intended for free rotation. The requisite approach to rectilinearity being attained, the longer these rods are, within the limits of their containing-sleeve, the better, and consequently for gratings of small or moderate height a single rod to each sleeve may suffice.

Steel plates F, riveted to the top of the uppermost horizontal bar and to the bottom of the lowermost horizontal bar, serve, while protecting these bars, to confine the rods E within their respective sleeves.

Where more than one rod occupies a single sleeve, each rod, except the bottom one, rests on the top of that next below it, and may be either pointed, as above explained, or have a ball of cast-steel or other hard material interposed between it and the rod or bar below it, and these rods may be solid, as represented, or may be hollow.

I claim as new and of my invention—

In combination with the transverse bars of the grating, the rotatable saw-proof rods and wrought-metal tubes inclosing the rotatable rods and riveted in the said transverse bars, so as to retain them in their proper position in the grating, substantially as set forth.

In testimony of which invention I hereunto set my hand.

THOMAS F. BAKER.

Attest:

WALTER KNIGHT,

L. H. BOND.