

G. KINSEY & H. P. McDONALD.  
Jail, Prison, and Grating Bar.

No. 216,865.

Patented June 24, 1879.

Fig. 1.

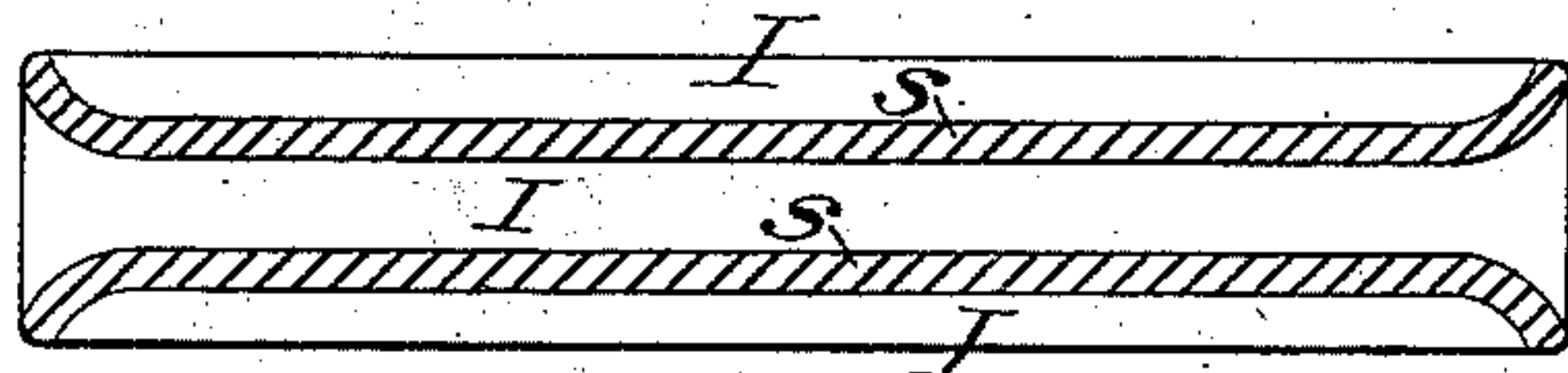


Fig. 2.

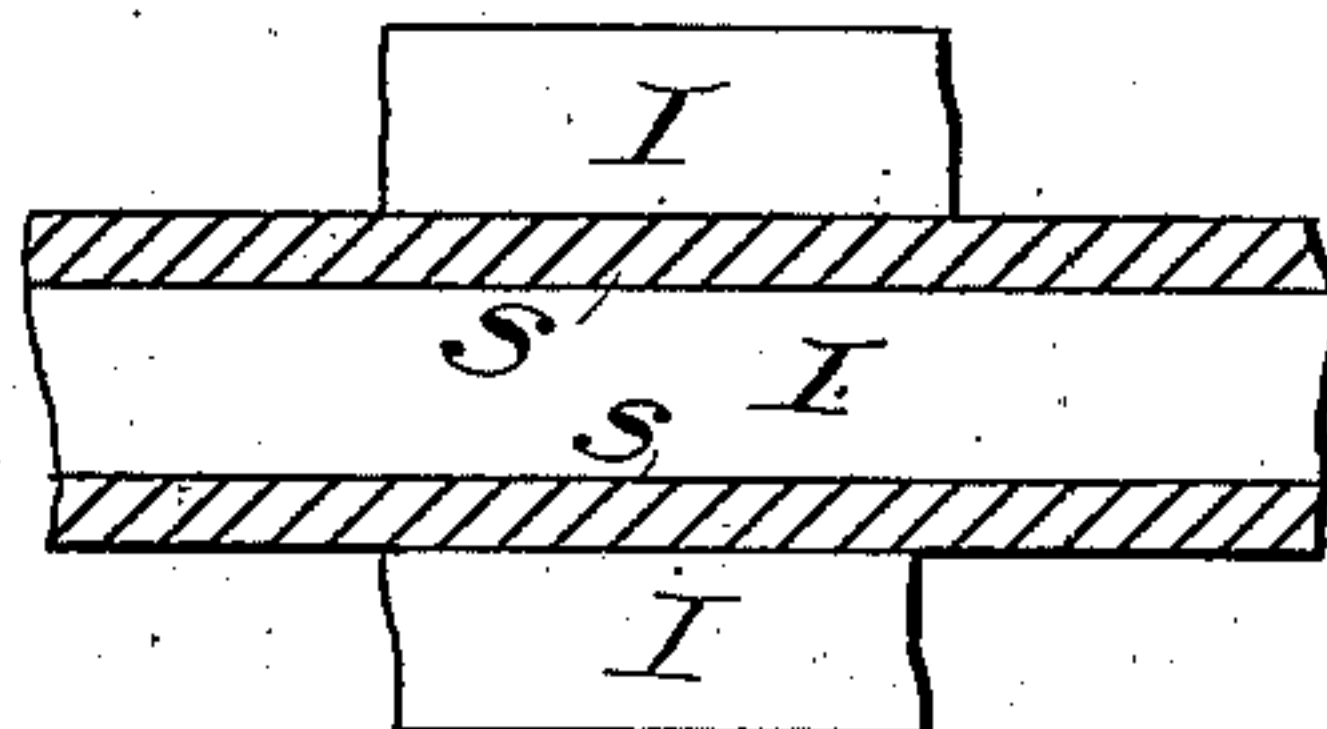


Fig. 3.

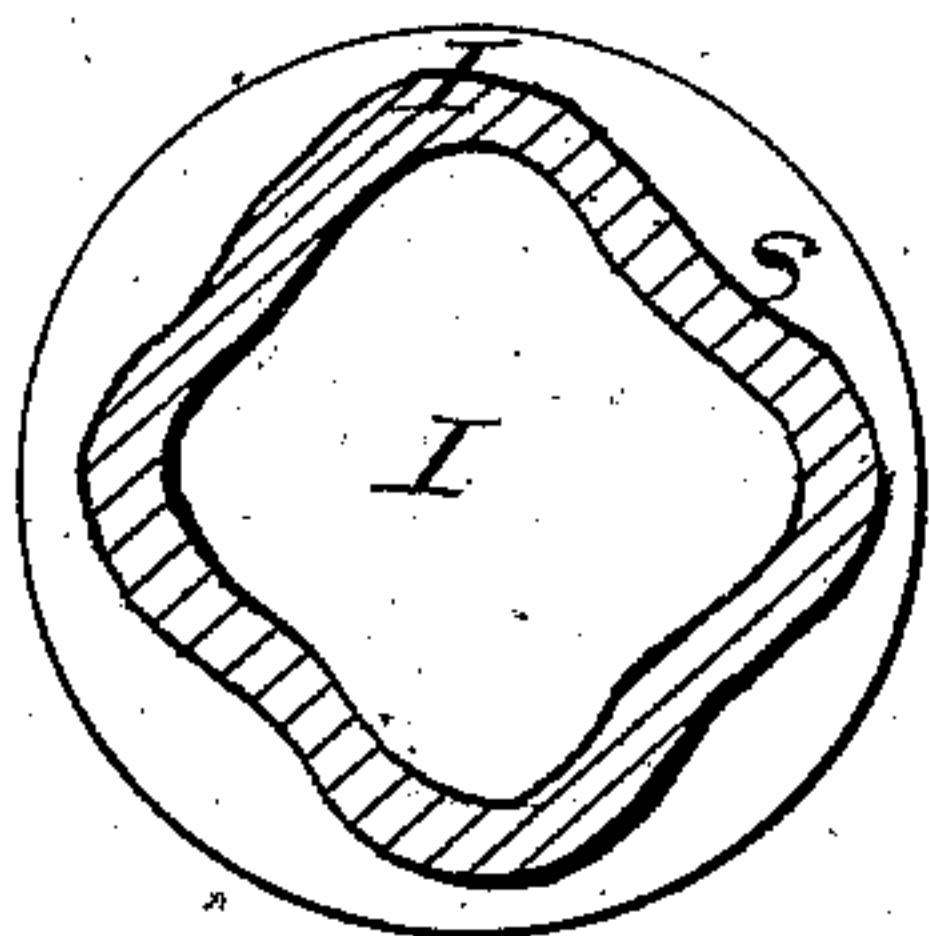


Fig. 4.

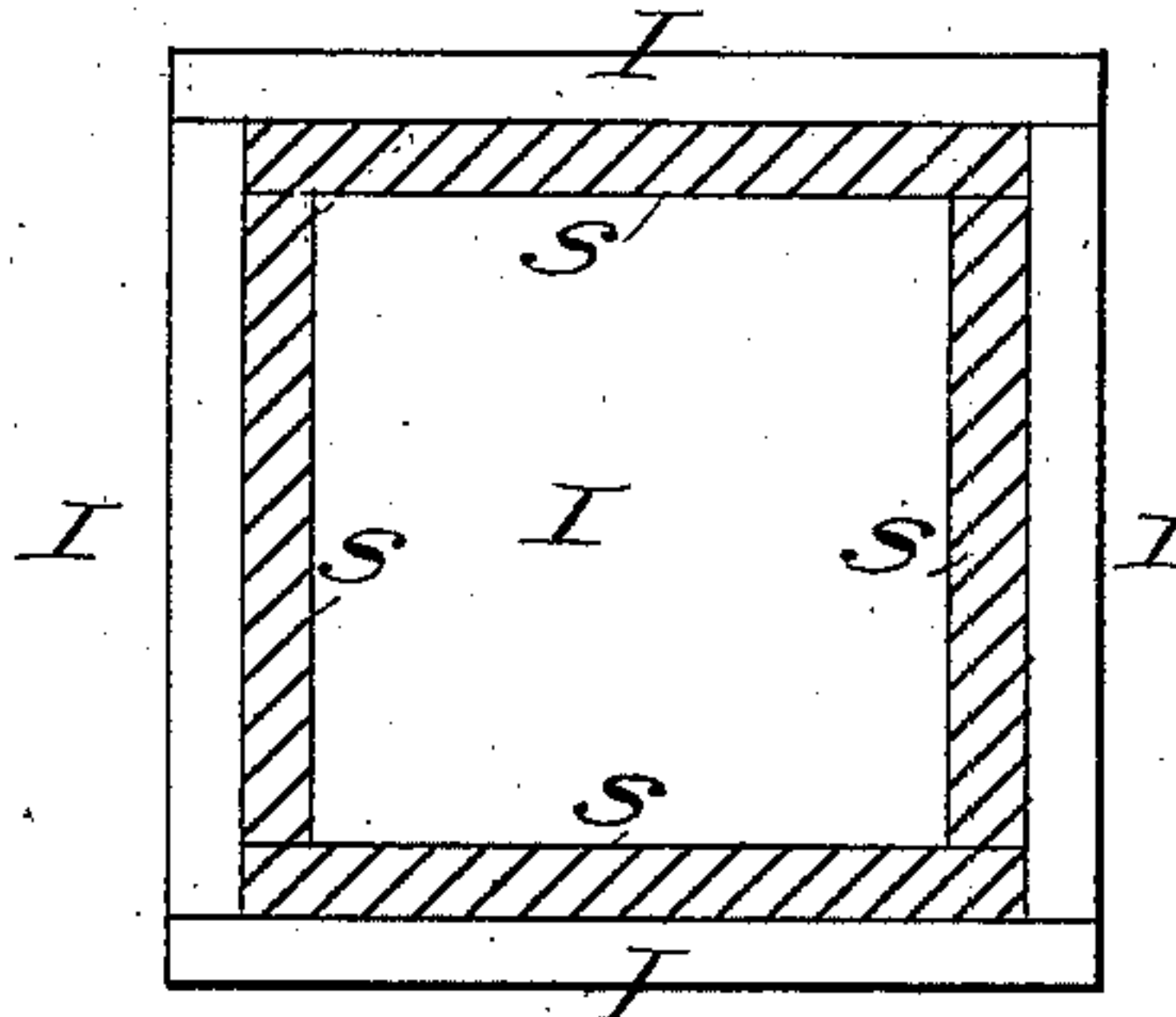
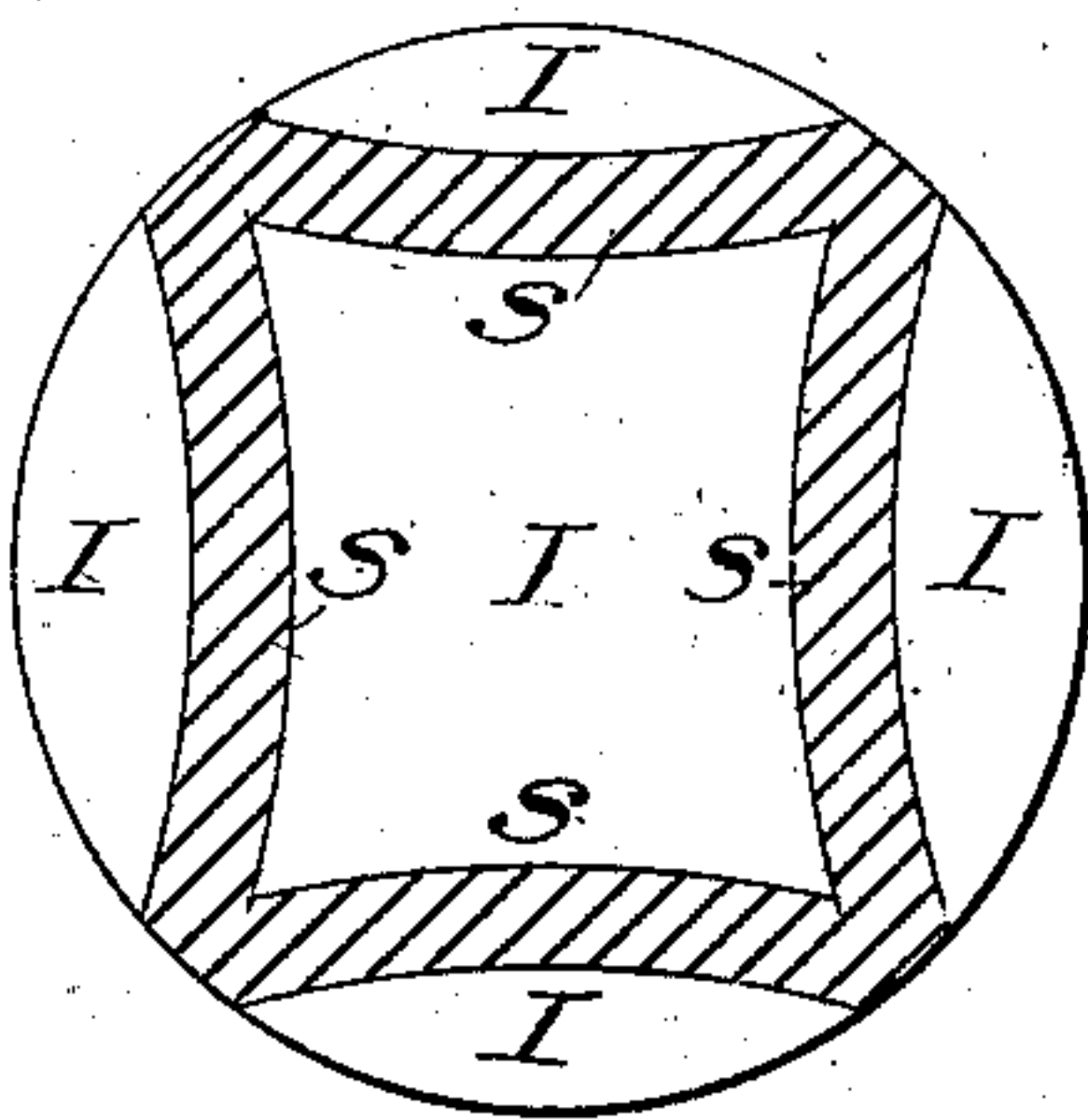


Fig. 5.



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# UNITED STATES PATENT OFFICE.

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## IMPROVEMENT IN JAIL, PRISON, AND GRATING BARS.

Specification forming part of Letters Patent No. **216,865**, dated June 24, 1879; application filed January 6, 1879.

*To all whom it may concern:*

Be it known that we, GEORGE KINSEY, of Cincinnati, in the county of Hamilton and State of Ohio, and HARRY P. McDONALD, of Louisville, in the county of Jefferson and State of Kentucky, have invented a new and useful Improvement in Jail, Prison, and Grating Bars, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a cross-section of our improved flat bar. Fig. 3 is a cross-section of our improved round bar. Fig. 5 is a cross-section of our improved round bar, the same being a modification and additional improvement of the bar shown in Figs. 1 and 3.

In all the drawings presented I represents wrought-iron, and S steel. These bars are readily and easily made by the well-known process of roll-welding of layers of iron and steel. The form of the pile designed to produce the bar shown in Fig. 1 is shown in Fig. 2. The form of the pile designed to produce the bar shown in Fig. 3 is shown in Fig. 4.

The pile for producing the bar shown in Fig. 5 can be readily made by any expert in roll-welding, the process embodying similar principles to those indicated.

While these are the preferred types, and while the piles indicated are obviously those most practicable, it is not necessary to have the bar of the exact forms indicated by the Figs. 1, 3, and 5. Any modification can be made, and in some cases it may be desirable to have bars of other shapes. They will accomplish the objects and contain the elements of our invention, more especially as shown in Figs. 1 and 3, if made in oval shape, designed to present, in combination, the following three features: first, an inner core of wrought-iron; second, a layer of steel with ends curved out to come flush with the outer surface of bar, or nearly so; third, an outside covering or coating of wrought-iron to protect said steel and covering same, except at the points where the curved ends of the steel come even with surface of bar.

The object of our invention is to present a bar suitable for prison or other gratings, which will present more effectual resistance to the

attacks of jail-breakers and burglars than any bar yet made. These bars are generally broken by violent blows, as with a sledge, by means of cutting-tools, such as saws, files, or chisels, or by strains of leverage and screw-pressure. To resist such attacks, it is necessary to have the bar contain the wrought or tough iron to resist blows and strains, and in addition to contain the steel to resist cutting-tools. It is also necessary to have the steel protected, (being brittle,) so that it cannot be reached by blows.

Bars have been heretofore constructed containing the said alternate layers of steel and wrought-iron; but it is easy for burglars or jail-breakers to file or cut through the outer layer of wrought-iron, then fracture the steel layer by blows, and finally break the bar by heavy leverage or additional filing or cutting.

Now, our improvement, as shown in Figs. 1 and 5, consists in this, that while it possesses all beneficial advantages of ordinary welded bars composed of layers of steel and wrought-iron, in addition the surface of the bar is more thoroughly impervious to all attacks. If it be attacked by blows, the outer surface of wrought-iron affords a protection to the steel. If attacked by cutting-tools, such as files, chisels, and saws, the curved ends of the steel coming to the surface would come in contact with the cutting-tool and ruin the edge of the tool and render the operation futile, thus preserving the bar intact with its original strength to resist attacks of any and every kind.

Our improvement, as shown in Fig. 3, which construction is peculiarly suitable for a round bar, consists in making the inner core of wrought-iron proportionately larger, thereby adding to the general strength of the bar, and possessing, in addition, the covering of steel to protect the large inner core from cutting by files, chisels, or drills, and the outside covering of wrought-iron fully encircling the steel and protecting same from blows. Even if practicable, the operation of cutting all the way around the outer circle of wrought-iron would be a tedious and difficult operation, and would not impair the general strength of the bar to any appreciable extent, because of its

form and the size and strength of the inner layers.

The matter described in specification and represented in Fig. 3 of drawings is not specifically claimed herein, as it is intended to make the same the subject of a separate application for Letters Patent.

What we desire to claim as our invention is—

A bar composed of layers of steel and iron welded together in flat, round, or other desirable shape in cross-section, with outer edges

of steel curved or turned at an angle, so as to meet the surface at points, substantially as and for the purpose shown and described.

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