

(No Model.)

G. B. MERSHON.  
GRATE BAR.

No. 303,032.

Patented Aug. 5, 1884.

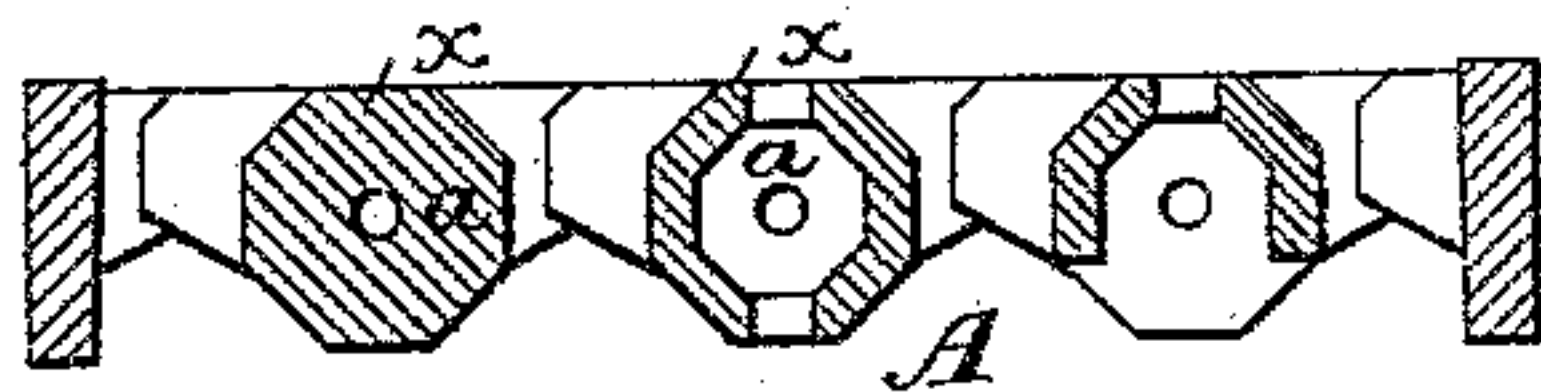


Fig. 1.

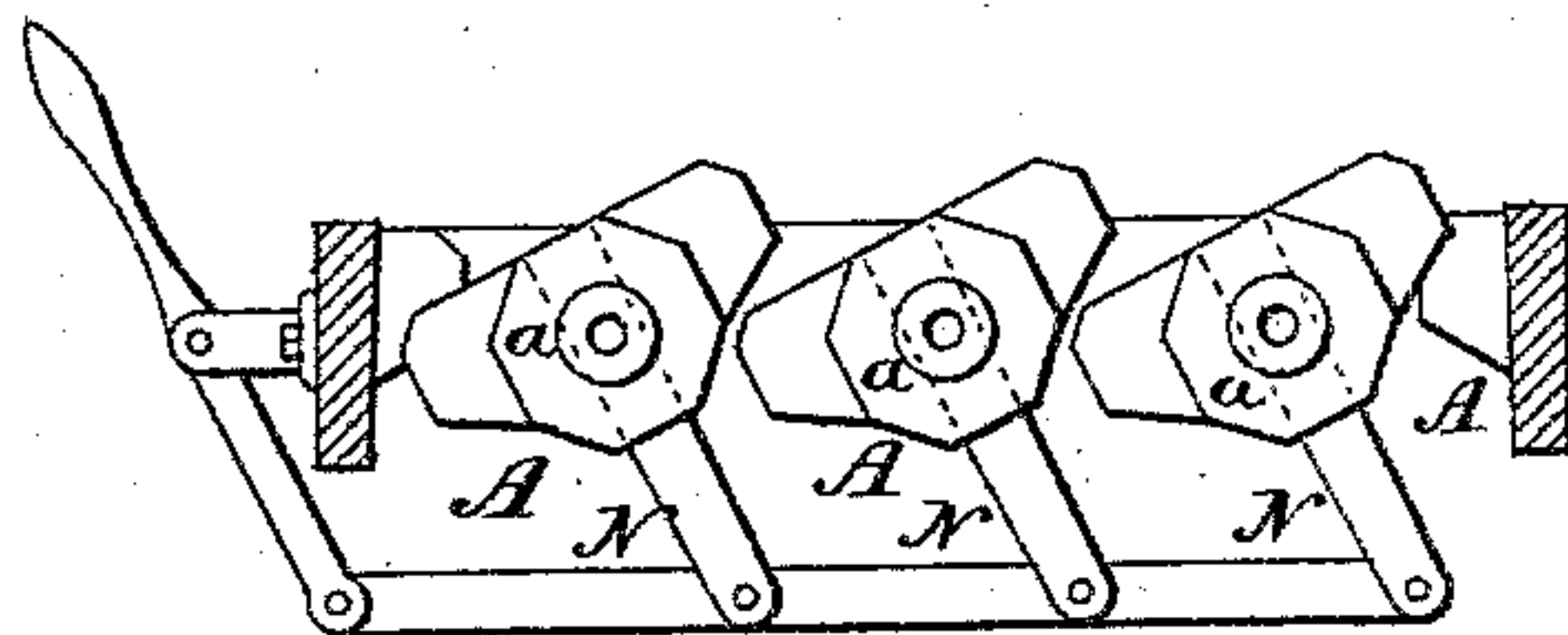


Fig. 2.

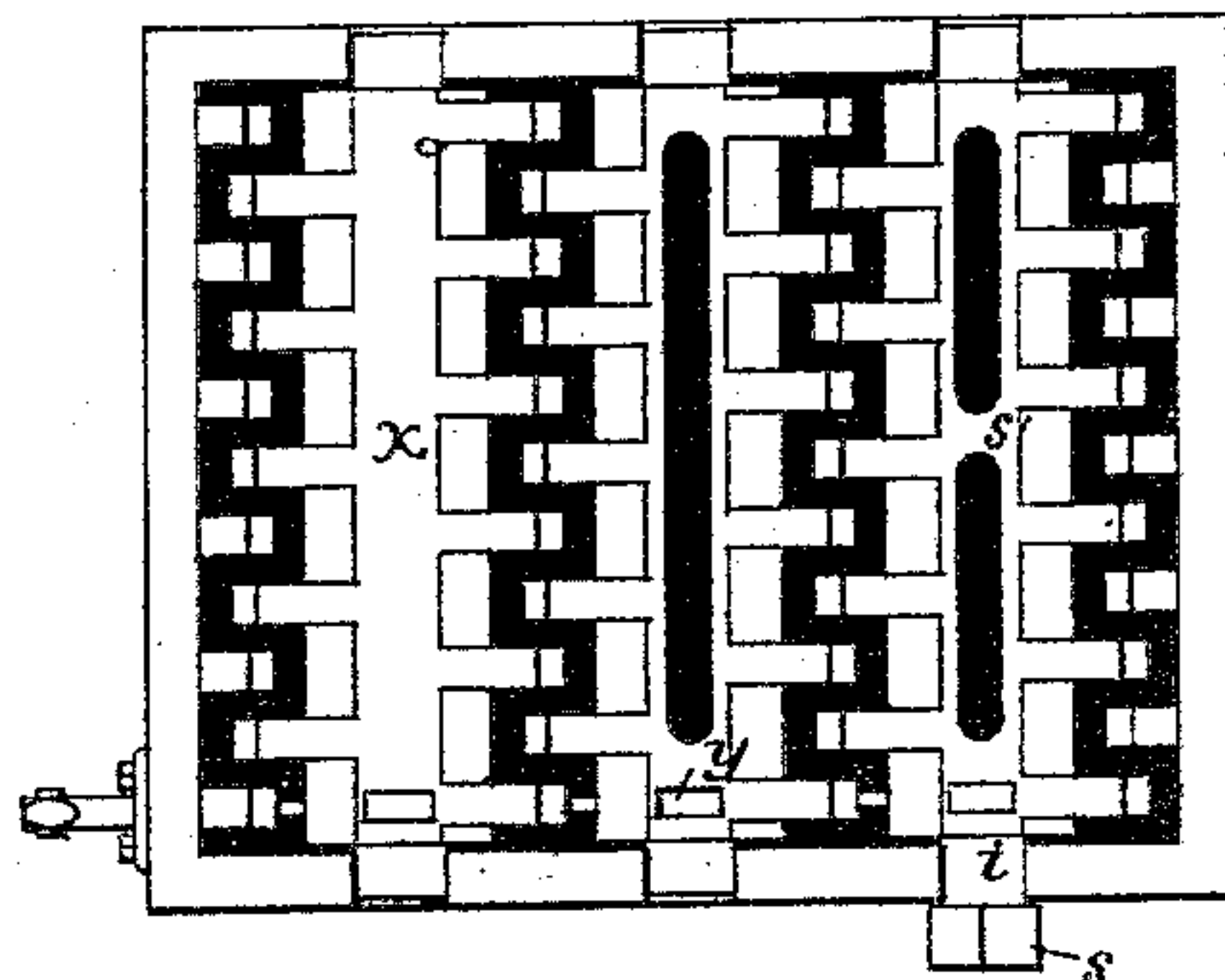


Fig. 3.

Fig. 4.

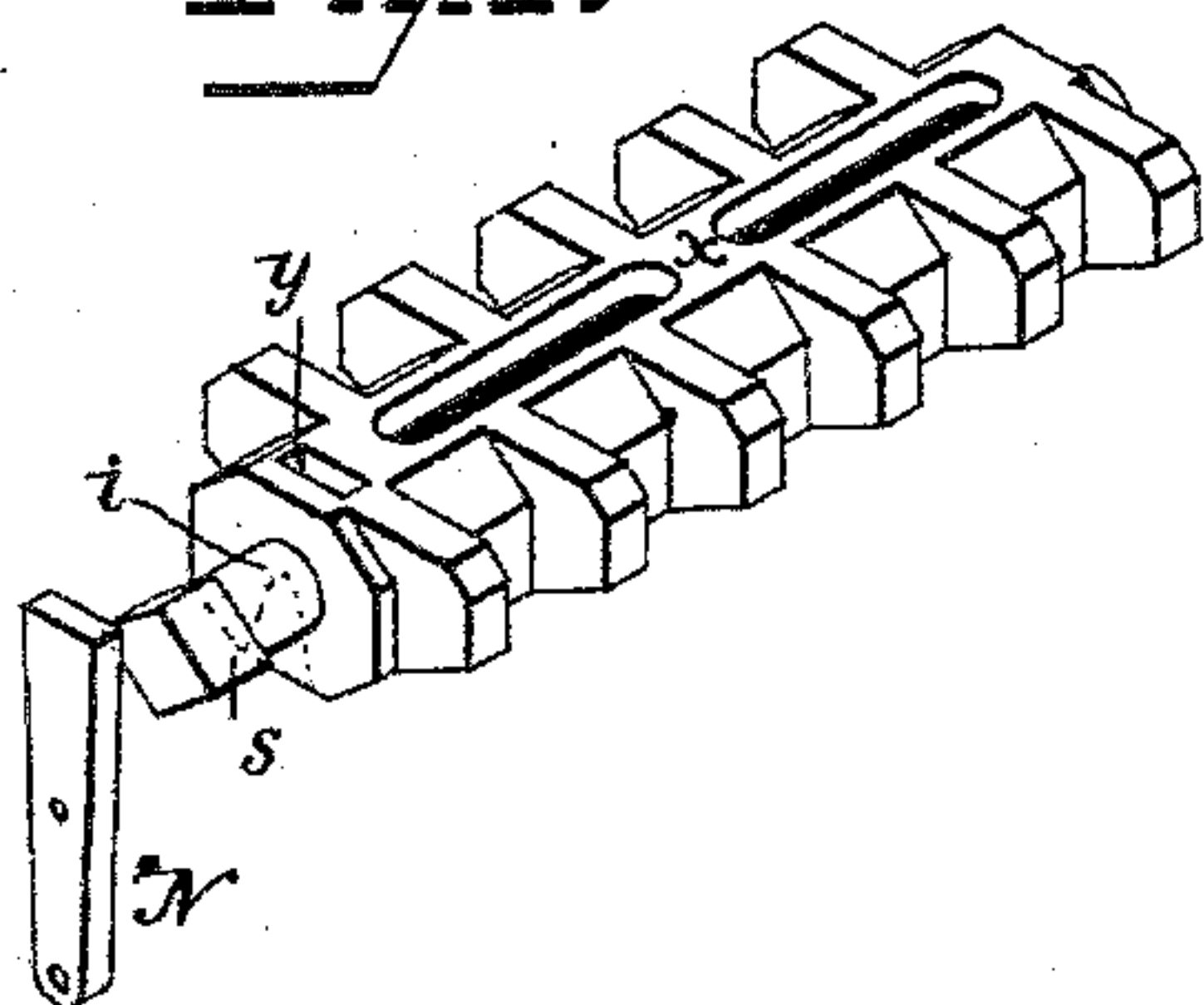


Fig. 5.

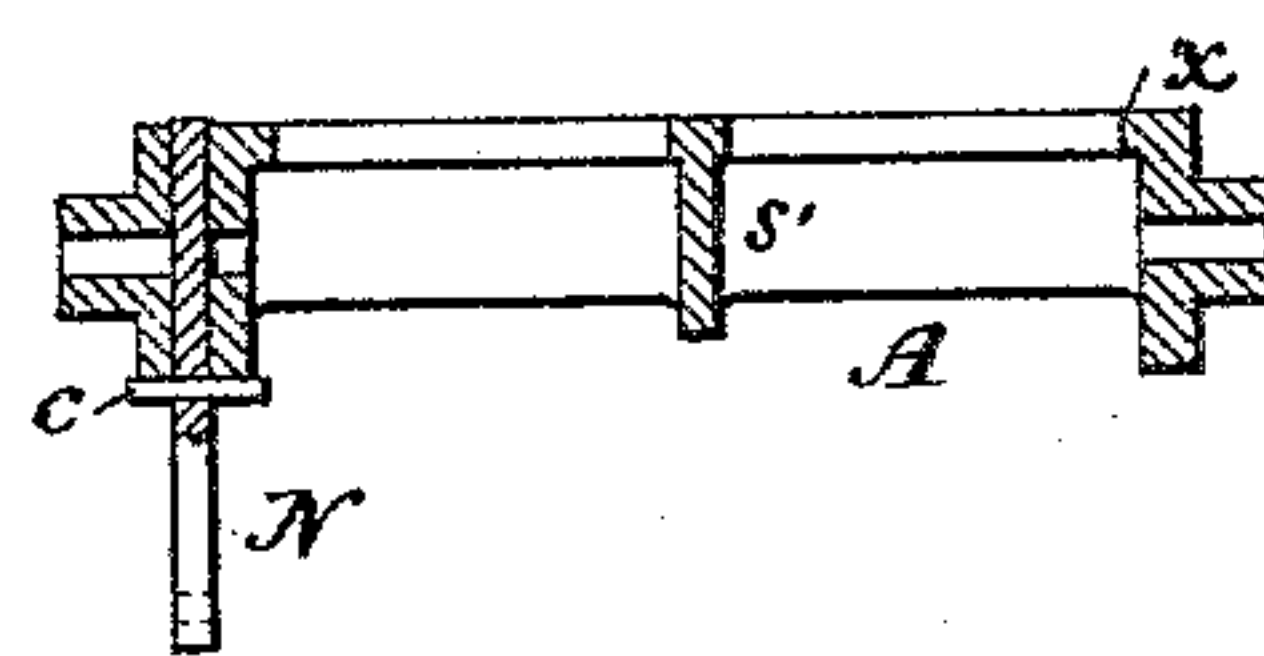
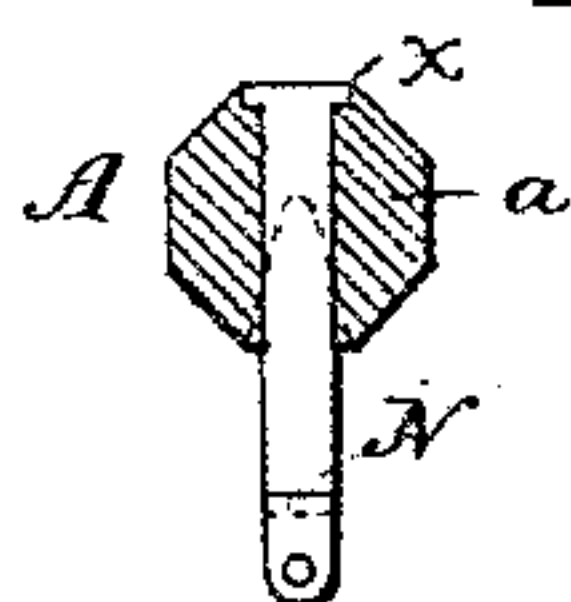


Fig. 6.



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# UNITED STATES PATENT OFFICE.

GEORGE B. MERSHON, OF PHILADELPHIA, PENNSYLVANIA.

## GRATE-BAR.

SPECIFICATION forming part of Letters Patent No. 303,032, dated August 5, 1884.

Application filed April 3, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE B. MERSHON, of the city and county of Philadelphia, State of Pennsylvania, have invented certain Improvements in Grate-Bars, of which the following is a specification.

My invention relates to that class of grates especially adapted for large furnaces for steam-boilers, &c., in which the bars are rocked for the purpose of cleansing the fire of ashes and cinders; and my invention consists in constructing the grate-bars, as fully described hereinafter, so as to facilitate the extraction of ashes and cinders without permitting the passage of unburned coal, avoid jamming the bars, and permit the use of rocking bars for the inclined grates of steam-boilers, &c., and so as to secure a better connection with the arms and connecting-bar.

In the drawings, Figure 1 is a transverse section of a grate showing my improvements. Fig. 2 is an end elevation of the bars and connections. Fig. 3 is a plan. Fig. 4 is a perspective view of a bar and arm detached. Fig. 5 is a longitudinal section of a bar, and Fig. 6 is a section showing a modification.

In ordinary grates with rocking bars it has been usual to make the bars with the bodies of cylindrical form and with side lugs. As thus constructed, an imperfect support for the fire is secured, especially when using fine coals, the latter tending to slide over the rounded pit. To overcome these objections I make the bars with polygonal bodies, with flat faces on top. Thus, the body *a* of the bars *A* may be octagonal in external form, with one of the flat faces *x* uppermost when the bar is in its normal position. This insures a flat broad support for the contents of the fire-pot; but any movements of the bars will agitate the whole body of fire, and the faces *x*, being then inclined, will tend to move and discharge the ashes toward the openings between the bars.

Instead of the usual pendent arms connected to the journals of the grate-bars and to the connecting-bar, I form in each grate-bar a slot or socket, *y*, to receive the end of an arm, *N*, and retain the latter in place by means of a detachable pin, *c*, or in any other suitable manner. The arm may be tapering or with lugs at the top, and the socket should correspond. This permits an arm to be removed or replaced without necessarily removing the grate-bar from its bearings.

The grate-bar may have cross-bridges *s'*, as shown in Fig. 5.

To permit the application of a key or other device to turn the bar, I sometimes provide the end of the journal *i* with an enlarged rectangular head, *s*, as shown in Figs. 3 and 5.

I reserve for other applications for Letters Patent any patentable features not specifically claimed.

I claim—

1. The combination, in a grate, of parallel bars and devices for rocking them simultaneously, said bars having each side lugs and a body flat on the upper face, and with inclined or beveled faces between said lugs, as set forth.

2. The combination of a grate-bar having a socket extending through the same, and an arm adapted to said socket and for attachment to the connecting-bar, substantially as set forth.

3. The combination of the grate-bar having a socket extending through the same, and a detachable arm and securing-pin, substantially as set forth.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE B. MERSHON.

Witnesses:

ELLWOOD BONSALE,  
WILLIAM T. GABELL.