(No Model.) 2 Sheets—Sheet 1.

A. WILKINSON.

FURNACE GRATE.

No. 494,831. Patented Apr. 4, 1893.

FIG. 1.

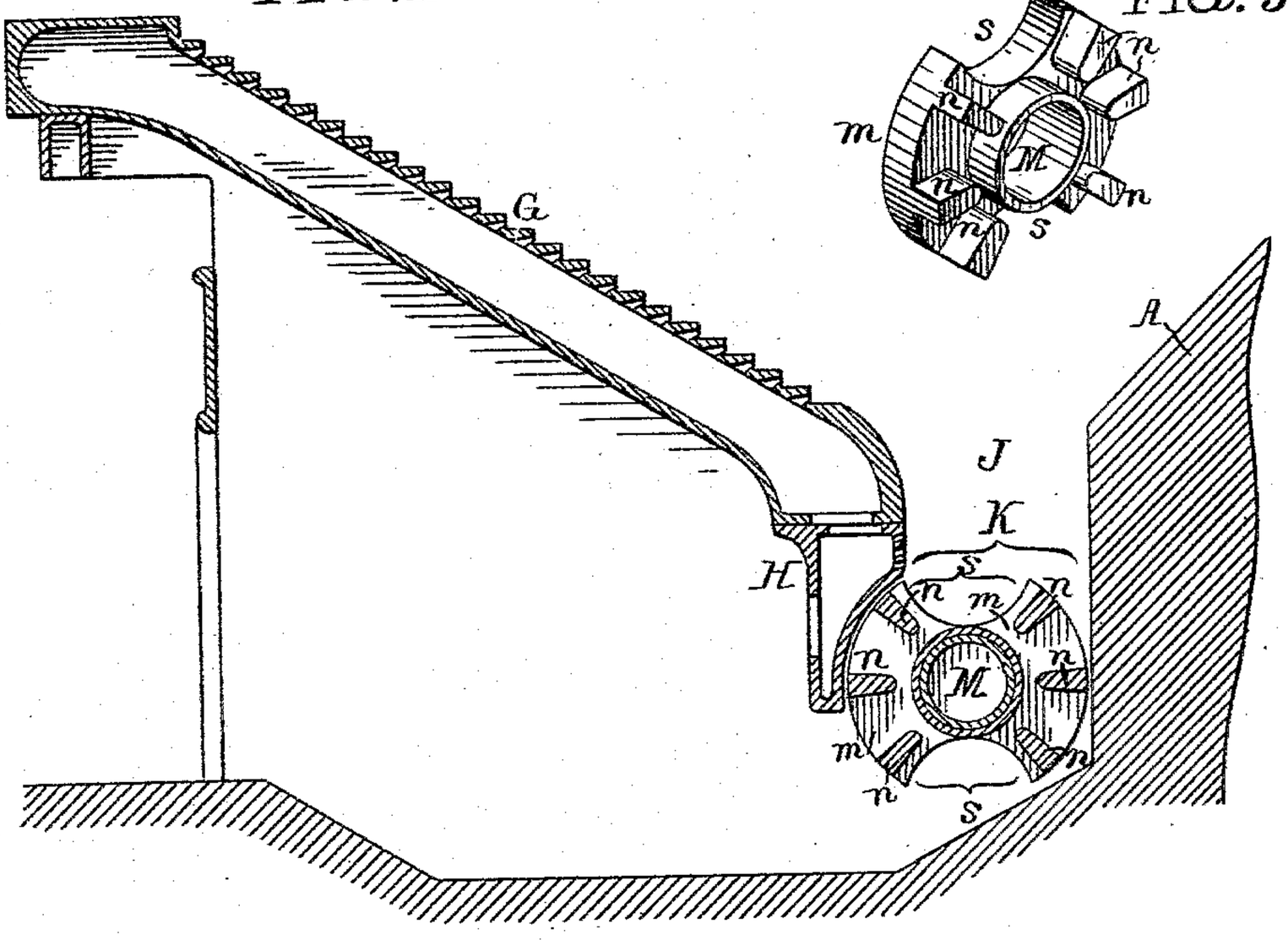
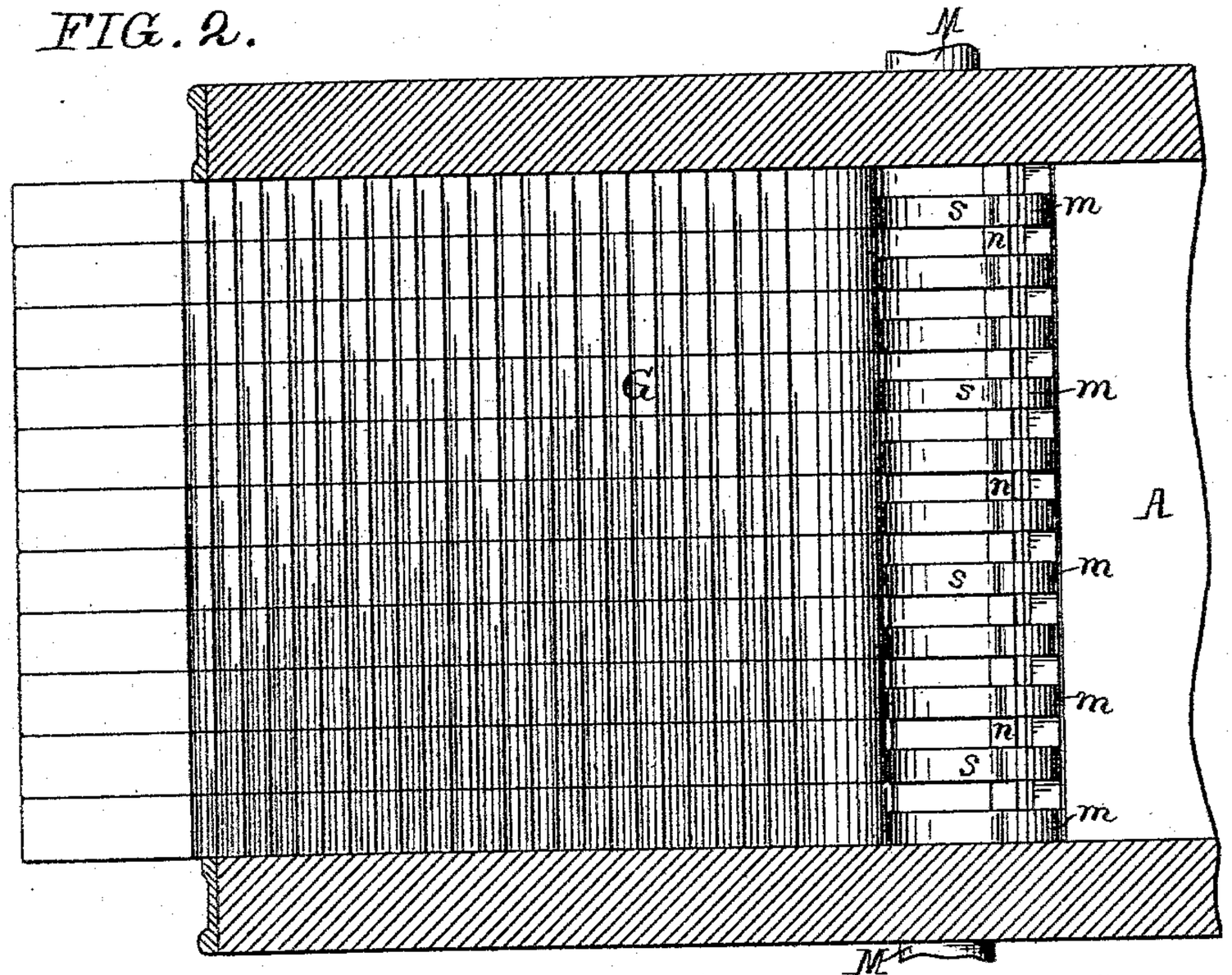


FIG. 3.

FIG. 2.



Witnesses:
A. O. Godwin
R. Schleicher

Inventor
A. Wilkinson
By his Attorneys
Howson & Howson

(No Model.) 2 Sheets—Sheet 2.

A. WILKINSON.

FURNACE GRATE.

No. 494,831. Patented Apr. 4, 1893.

FIG. 4.

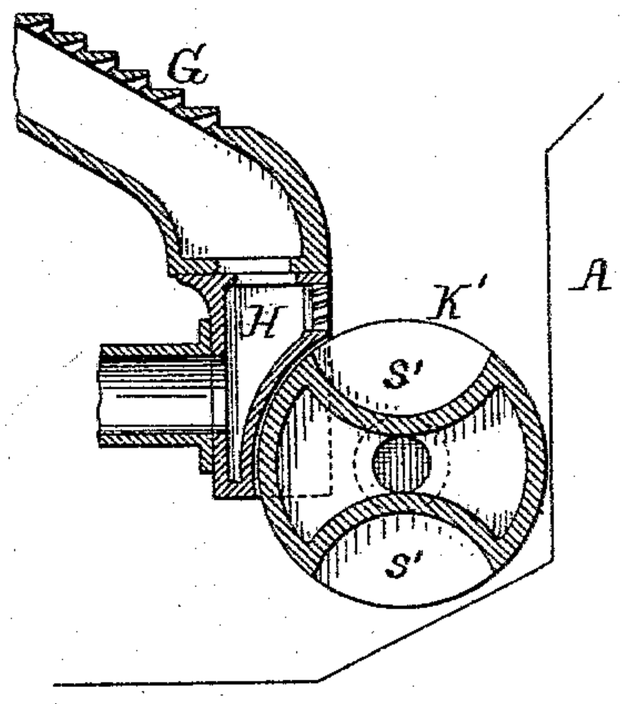


FIG. 5.

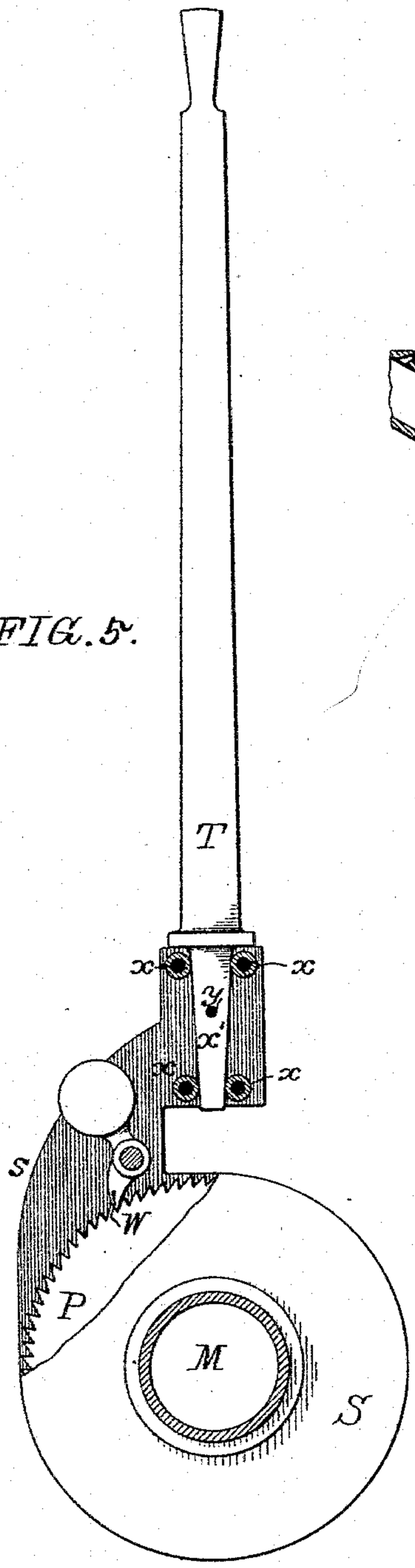
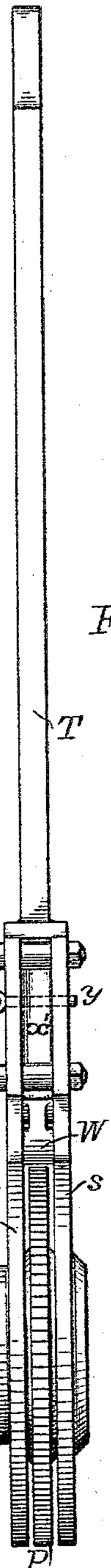


FIG. 6.



Witnesses:
P. H. Goodwin
R. Schleicher.

Inventor
A. Wilkinson
By his Attorneys
Howson & Howson

UNITED STATES PATENT OFFICE.

ALFRED WILKINSON, OF BRIDGEPORT, PENNSYLVANIA, ASSIGNOR TO THE WILKINSON MANUFACTURING COMPANY, OF PENNSYLVANIA.

FURNACE-GRATE.

SPECIFICATION forming part of Letters Patent No. 494,831, dated April 4, 1893.

Application filed July 23, 1892. Serial No. 440,965. (No model.)

To all whom it may concern:

Be it known that I, ALFRED WILKINSON, a citizen of the United States, and a resident of Bridgeport, Montgomery county, Pennsylvania, have invented certain Improvements in Furnace-Grates, of which the following is a specification.

The object of my invention is to provide a simple and effective form of ash discharger for furnace grates, said ash discharger being especially intended for use in connection with grates having inclined bars, such for instance as shown in my application for patent filed February 29, 1892, Serial No. 423,257.

In the accompanying drawings:—Figure 1, is a longitudinal sectional view of sufficient of my improved grate to illustrate the application of the ash discharger thereto. Fig. 2, is a sectional plan view of the same. Fig. 3, is a perspective view of one of the sections of the ash discharger. Fig. 4 is a sectional view illustrating a modification of the invention. Fig. 5, is a side view, partly in section, of a device employed for operating the ash discharger; and Fig. 6, is an end view of said device.

It will not be necessary to describe the construction of the grate itself, as that is fully set forth in my application for patent before alluded to, hence it will be sufficient in this specification to say that the grate bars G are inclined and rest at their lower ends upon a transverse beam or girder H so as to form between the base of the grate and the bridge wall A, a well J for receiving the ashes. The bottom of said well J is closed by a rotating ash discharger K which, in the form shown in Figs. 1 and 2, consists of a series of disks *m* (Fig. 3) secured to a hollow shaft M which is adapted to turn in suitable bearings in the side walls of the furnace and projects beyond one of said side walls for the application of power whereby it can be rotated. Each disk *m* has side lugs *n* whereby the disks are separated to the desired extent, and in each disk are formed opposite recesses *s*, segmental in the present instance, although they may be of any desired form. The recesses of the disk are in line with each other, hence, as these recesses are successively brought under the well J by the rotation of the ash discharger, they form longitudinal troughs or channels which receive the ashes and convey the same forward in the direction of the arrow Fig. 1, so as to dump them into the ash pit, the adjacent face of the girder H being preferably concave so as to permit the disks *m* to work in close proximity thereto.

The rotating shaft M of the ash discharger may, if desired, be driven continuously by means of a suitable chain belt and sprocket wheels from any adjacent power driven shaft, but, as this means of operating the ash discharger may not in many cases be available or advisable, I provide for the purpose ratchet lever mechanism such as shown in Figs. 5 and 6, in which P represents a ratchet wheel secured to the shaft M of the ash discharger and S, S, represent a pair of levers loosely hung to said shaft and carrying between them a weighted pawl W for engagement with the teeth of the ratchet wheel as shown in Fig. 5. The upper portions of the levers S are connected by transverse pins *x* which form a socket for the reception of the butt *x'* of the operating handle T whereby the levers may be conveniently vibrated so as to rotate the ash discharger by a series of intermittent movements of partial rotation, a transverse pin *y* being used, if desired, to prevent the accidental withdrawal of the handle bar from engagement with the levers.

Although I prefer to form the ash discharger of a series of disks strung upon a transverse shaft in the manner dscribed, other forms of rotary ash dischargers within the scope of my invention will readily suggest themselves to those skilled in the art, for instance, the device may be in the form of a hollow cylinder K' with opposite recesses *s'*, such for instance as shown in Fig. 4, said cylinder having at its opposite ends suitable trunnions adapted to bearings in the side walls of the furnace, these trunnions being also hollow when it is desired to cause a circulation of air or steam through the cylinder for cooling purposes.

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

1. The combination in a grate for furnaces, of inclined grate bars, with a rotary ash discharger at the base of the grate bars, said ash discharger comprising a series of recessed

disks mounted side by side upon a shaft whereby the parallel recesses of the series of disks form an ash receiving trough or chamber, substantially as specified.

2. The combination in a grate for furnaces, of inclined grate bars, with a rotary ash discharger at the base of the grate bars, said ash discharger consisting of a series of disks mounted upon a shaft and each having laterally projecting lugs for bearing upon the adjacent disk, said discharger having one or more recesses for receiving, conveying and discharging the ashes, substantially as specified.

3. The combination in a grate for furnaces, of the inclined grate bars, the transverse supporting girder therefor, having a concave face, and a rotary ash discharger located at the base of the grate bars and fitted to said concave face of the supporting girder, said ash discharger having one or more longitudinal troughs or channels for receiving, conveying, and discharging the ashes, substantially as specified.

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

ALFRED WILKINSON.

Witnesses:

WILLIAM D. CONNER,

HARRY SMITH.