

No. 765,809.

PATENTED JULY 26, 1904.

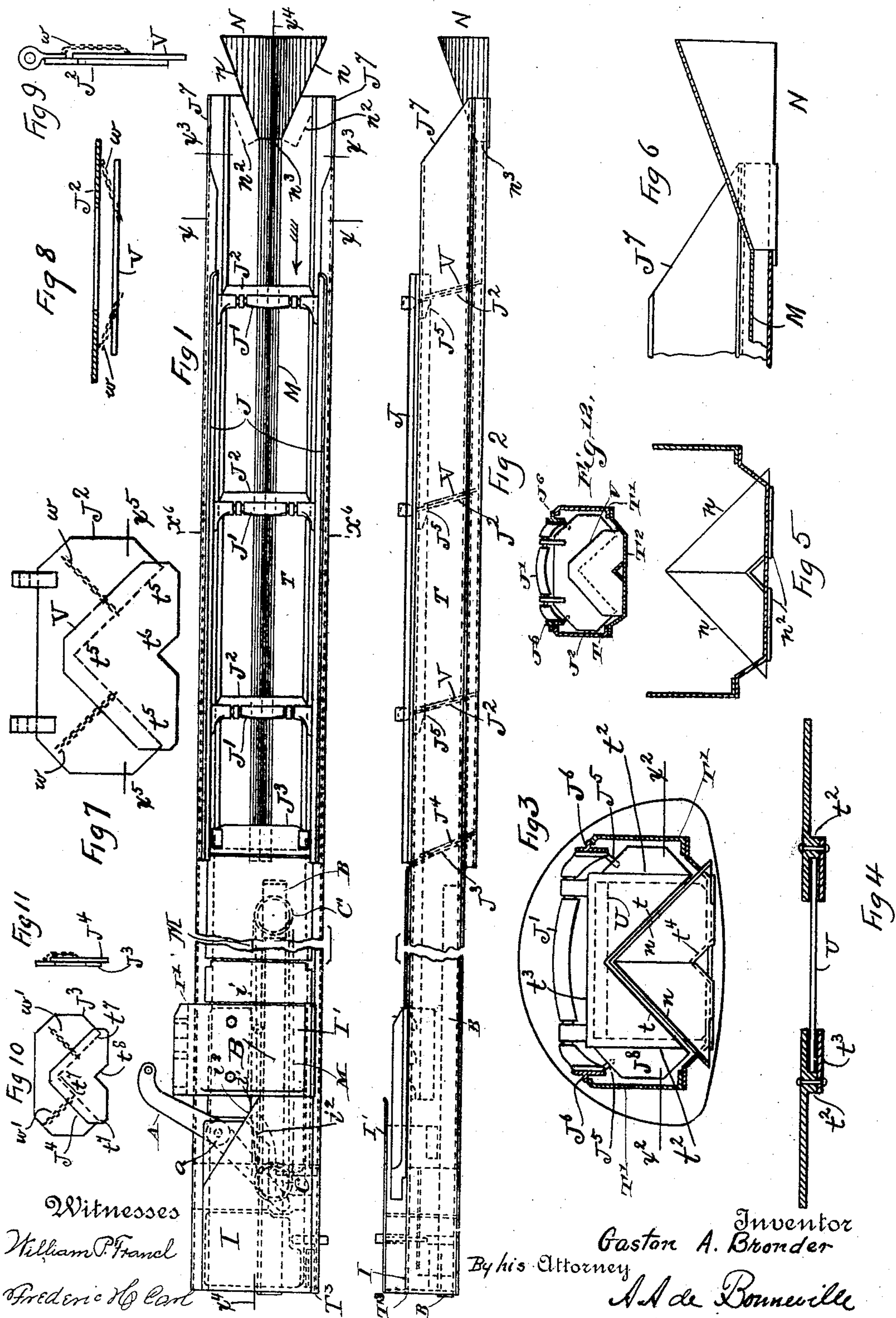
G. A. BRONDER.

## GAS RETORT CHARGING APPARATUS.

APPLICATION FILED JUNE 28, 1902.

NO MODEL.

2 SHEETS—SHEET 1.



Witnesses  
William P. Franel  
Frederic H. Carr

Inventor  
Gaston A. Bronder  
By his Attorney  
A. A. de Bonneville

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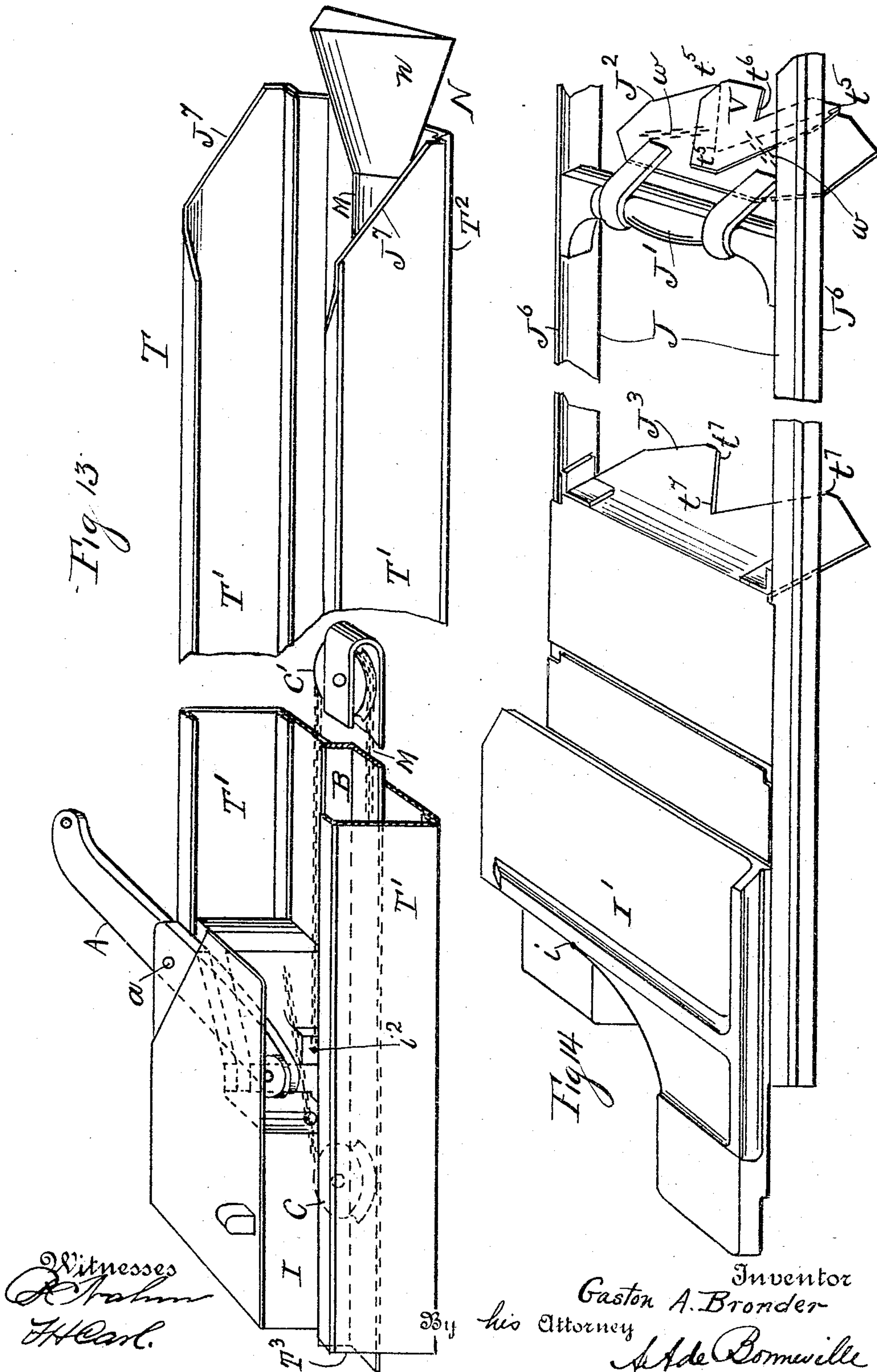
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# UNITED STATES PATENT OFFICE.

GASTON A. BRONDER, OF BROOKLYN, NEW YORK.

## GAS-RETORT-CHARGING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 765,809, dated July 26, 1904.

Application filed June 28, 1902. Serial No. 113,577. (No model.)

*To all whom it may concern:*

Be it known that I, GASTON A. BRONDER, a citizen of the United States, and a resident of the borough of Brooklyn, in the county of Kings and State of New York, have invented certain new and useful Improvements in Gas-Retort-Charging Apparatus, of which the following is a specification.

This invention relates to gas-retort-charging apparatus; and its object is the production of means by which coal and the like can be fed into the retorts of retort-stacks, so as to pile the coal in thick layers at the sides of the retort and leave a channel through the coal on the bottom of the retort parallel to the longitudinal axis thereof. These objects are obtained by applying my invention to the scoops of my retort-charging apparatus shown and described in my Patent No. 676,025, dated June 11, 1901, and in my patent application filed January 18, 1902, Serial No. 90,306.

The specific improvement which forms the subject-matter of this invention is contained in a scoop and its appurtenances, comprising an improved plow and scrapers for the scoop, and by means thereof the coal is lifted as it leaves the scoop and is then directed to the sides of the retorts. The lifting of the coal allows it to slide down the sides of the plow and pile up at the sides of the retorts.

Referring to the drawings, Figure 1 shows a plan view of the scoop with its scrapers and plow. Fig. 2 represents a side view of Fig. 1. Fig. 3 is a partial section of Fig. 1 on the line  $x-x$ , showing an end view of the plow, a swinging scraper, and an outline of a retort as viewed in the direction shown by the arrow. Fig. 4 shows a section, on an enlarged scale, of the scraper shown in Fig. 3 on the line  $x^2-x^2$ . Fig. 5 represents a section of the scoop on the line  $x^3-x^3$  of Fig. 1, with an end view of the scoop looking in a direction opposite to the arrow. Fig. 6 is a partial longitudinal section of Fig. 1 on the line  $x^4-x^4$ . Fig. 7 represents an elevation of one of the swinging or pivoted scrapers with its cover. Fig. 8 shows a partial section of Fig. 7 on the line  $x^5-x^5$ . Fig. 9 is an end view of Fig. 7. Fig. 10 represents an elevation of a stationary

scraper. Fig. 11 shows an end view of Fig. 10. Fig. 12 represents a section of the scoop on the line  $x^6-x^6$  of Fig. 1. Fig. 13 shows a perspective view of the ends of the scoop. Fig. 14 shows a perspective of a portion of the scraper-frame.

The scoop is shown at T and consists of a long box open at the top and at one end. The said box comprises the sides T' and depressed bottom T<sup>2</sup>. To a weight I in the rear portion of the scoop there is fulcrumed a lever A by means of a pin  $a$ , and a backing-bar B is arranged to move through the rear end T<sup>3</sup> of the scoop.

Within the scoop and lying loosely upon the upper edges of the sides T' thereof there is a scraper-frame J, which comprises the side bars J<sup>6</sup>, stops J<sup>5</sup>, and cross-braces J', to which latter are pivoted scrapers J<sup>2</sup>.

A pulley C in the rear end of the scoop is connected by a chain M to a pulley C' on the backing-bar B. The said chain M is fastened to the weight I at  $i^2$  in the scoop, leads over the pulley C', then runs over the pulley C, and is finally fastened to the weight I' at  $i$  of the scraper-frame J, all of which parts are not new, being fully described in my Patent No. 676,025 and my patent application filed January 18, 1902, Serial No. 90,306.

Swinging scrapers, as already stated, are pivoted to the cross-braces J', each comprising a blade J<sup>2</sup>, (see Figs. 7, 8, 9, 12, and 14,) which is cut out at its lower edge, as shown, on the line  $t^5-t^5-t^5$ , forming a notch in the blade. A door or cover V, with a triangular notch  $t^6$ , is flexibly connected to the said blade by chains  $w$ . A rear scraper J<sup>3</sup> is rigidly secured to the scraper-frame J, and forms the back coal-space in the scoop. It is cut out on the line  $t^7-t^7-t^7$ , Figs. 10, 11, and 14, and a door or cover J<sup>4</sup>, with a triangular notch  $t^8$ , is flexibly connected with the scraper J<sup>3</sup> by means of chains  $w'$ .

A plow N, the larger end of which extends considerably out of the body of the scoop, comprises sides  $n$ , which with the bottom of the scoop constitutes a frustum of a triangular pyramid. It is fastened to the bottom of the scoop by means of ears  $n^2$ , and its end



$n^3$  butts against a triangular projection M in the bottom of the scoop. The top and sides of the scoop are cut away, as shown at J<sup>7</sup>.

In Figs. 3 and 4 a modified form of scraper 5 is shown to comprise a blade J<sup>8</sup>, which is cut out on its lower edge on the line  $t\ t$ , forming a notch in the blade. From the said blade J<sup>8</sup> there extend projections  $t^2$ , that support a plate  $t^3$  to form an inclosure for a cover or 10 door U, the latter having a triangular notch  $t^4$  in its lower edge.

To operate and use my invention, the box T of the scoop is filled with coal through its open top, the scraper-frame J, with its appurtenances, being in position, as shown in Fig. 1. 15 Then to empty the charge of coal the scoop, with its scraper-frame and scrapers, is by any suitable means moved into a retort or the like to an extent a little greater than that 20 part of the scoop which contains the said charge. Next the scoop is withdrawn from the retort, the scraper-frame, with its scrapers, being detained therein by any suitable means. While the scoop is thus withdrawn, while the 25 scrapers remain stationary, the coal is discharged from the scoop, because the coal is held back by the scrapers and pushed off of the scoop as the latter passes under the scrapers. As the scoop is withdrawn the plow N thereon 30 will raise the covers V and J<sup>4</sup>, the chains  $w\ w'$  allowing the scrapers to rise. As the plow passes through the coal held in the scoop the said coal is lifted and at the same time forced to the sides of the retort. During the with- 35 drawal of the scoop from the retort and while the scrapers are detained in the said retort the backing-bar B is moved through the rear end T<sup>3</sup> of the scoop. After the scoop has

been all withdrawn from the retort the scraper-frame, with its scrapers, is released, and upon 40 a further movement of the scoop the backing-bar is engaged by a stop and again forced into the scoop through the rear end T<sup>3</sup>, by which the scrapers, with their appurtenances, will be drawn into proper position in the 45 scoop.

It will be noted that the chains  $w\ w'$ , by which the doors or covers of the blades of the scrapers are held, allow the said doors or covers to swing over the plow as the scraper- 50 frame is moving into position on the scoop.

Having described my invention, I claim—

1. In a scoop of a retort-charging apparatus, the combination of a scraper-frame with scrapers arranged to slide on the scoop, covers 55 arranged to rise, lower and swing on the scrapers, a plow with rising and horizontally-diverging sides on the scoop, and arranged to pass under the scrapers.

2. In a scoop for a retort-charging apparatus, the combination of a scraper-frame with scrapers, covers on the scrapers, flexible con- 60 nections between the scrapers and the covers.

3. In a scoop of a retort-charging apparatus, the combination of a scraper-frame with 65 scrapers, notches in the scrapers, covers on the scrapers for the openings therein, chains connecting the scrapers and covers.

Signed at New York, in the county of New York and State of New York, this 17th day 70 of June, A. D. 1902.

GASTON A. BRONDER.

Witnesses:

WILLIAM P. FRANCL,  
FREDERIC H. CARL.