

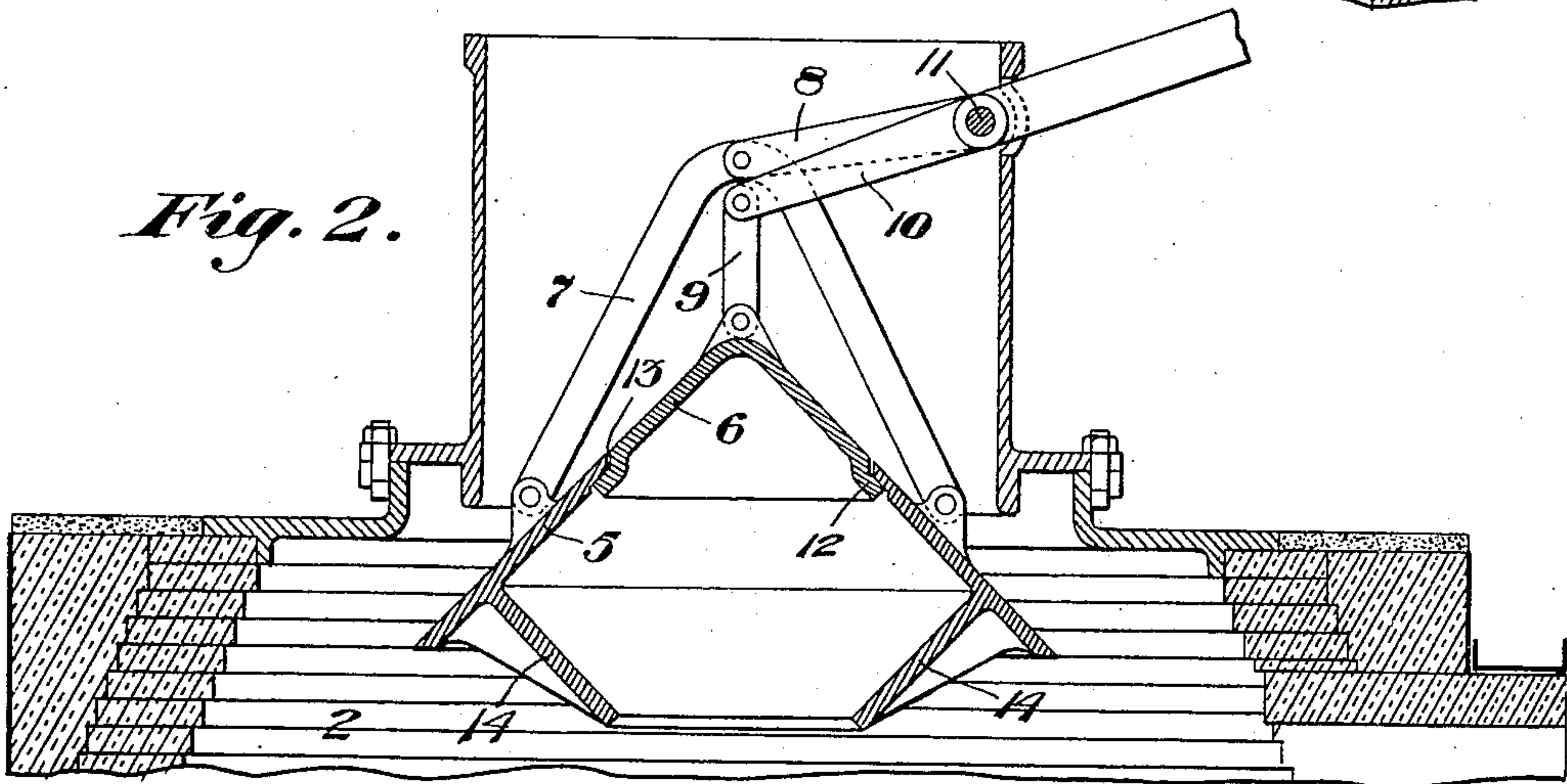
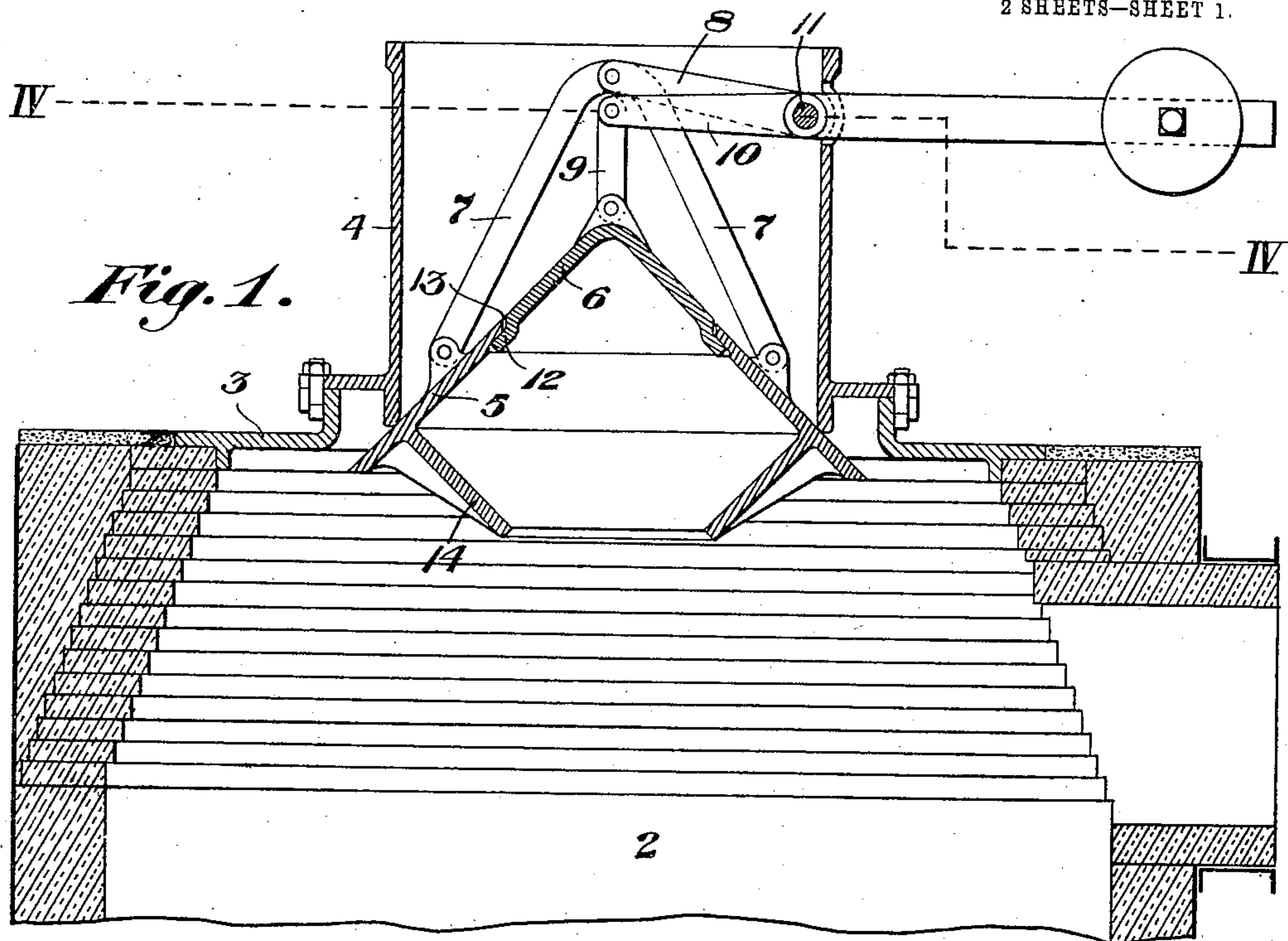
No. 868,147

PATENTED OCT. 15, 1907.

J. A. WALDBURGER.  
FEEDING MECHANISM FOR GAS PRODUCERS, FURNACES, &c.

APPLICATION FILED NOV. 12, 1906.

2 SHEETS—SHEET 1.



*Witnesses:*

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Chas. S. Spley

*Inventor:*

John A. Waldburger  
by C. M. Clarke  
his attorney

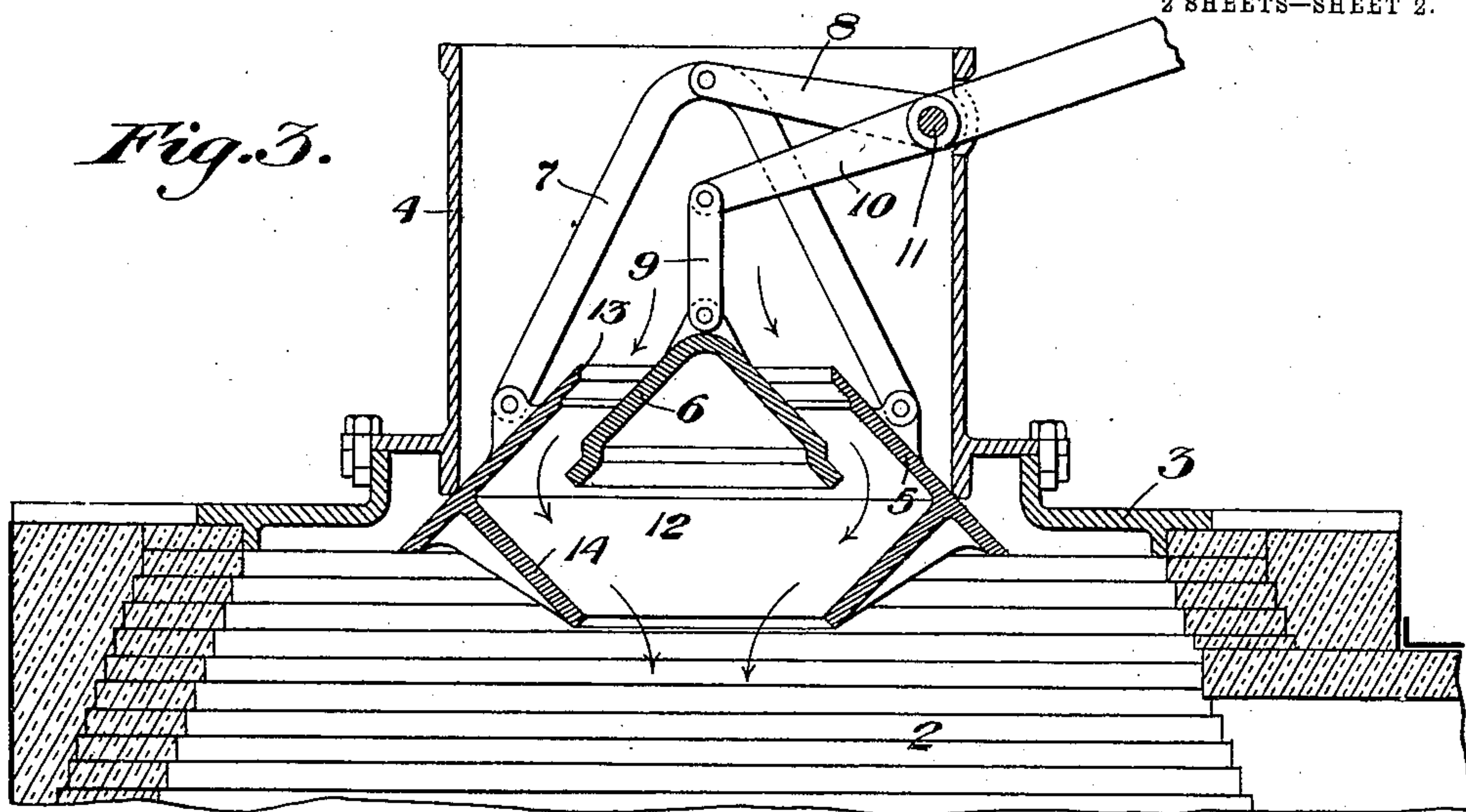
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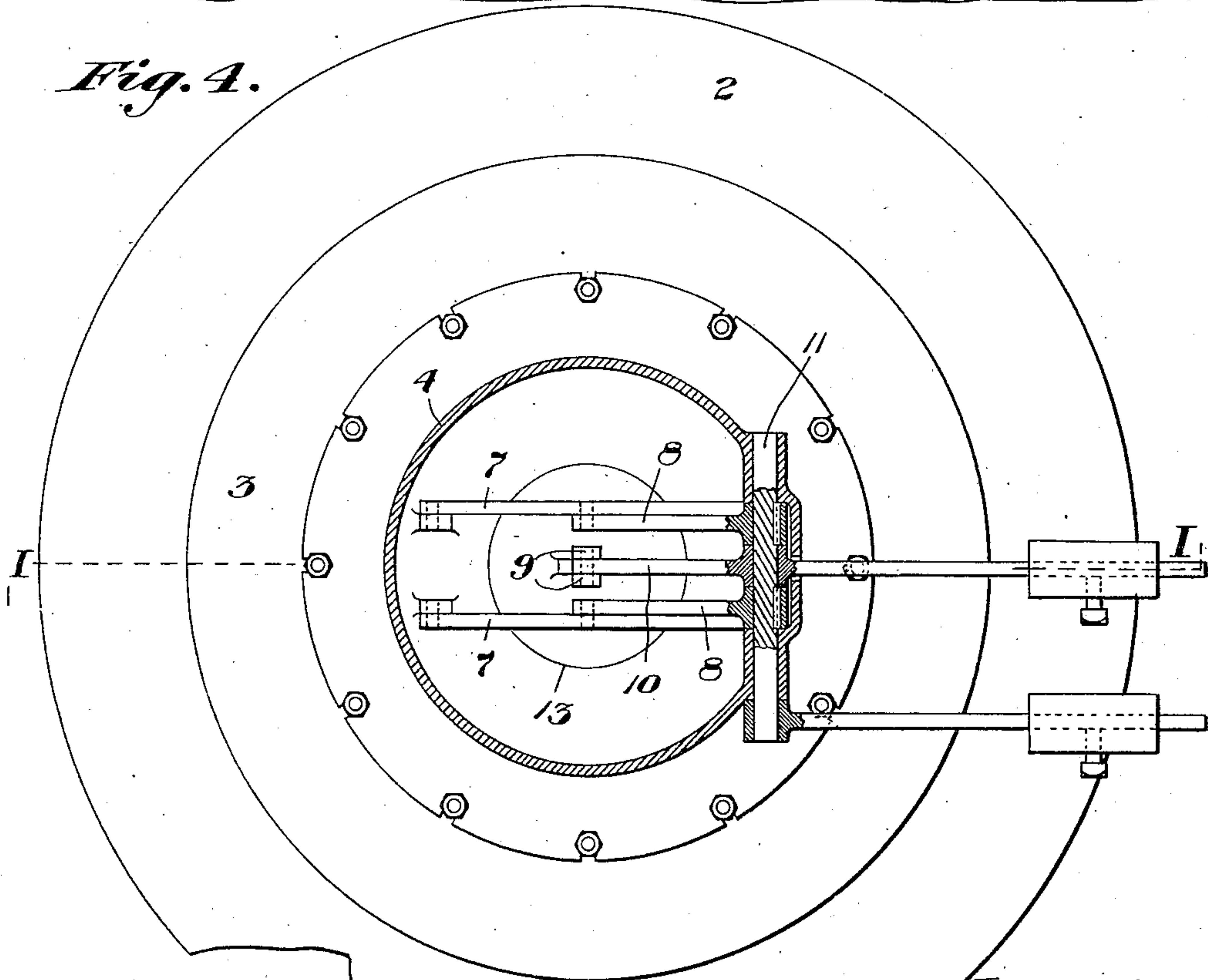
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2 SHEETS—SHEET 2.

*Fig. 3.*



*Fig. 4.*



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# UNITED STATES PATENT OFFICE.

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## FEEDING MECHANISM FOR GAS-PRODUCERS, FURNACES, &c.

No. 868,147.

Specification of Letters Patent.

Patented Oct. 15, 1907.

Application filed November 12, 1906. Serial No. 343,082.

*To all whom it may concern:*

Be it known that I, JOHN A. WALDBURGER, a citizen of the United States, residing at McKeesport, in the county of Allegheny and State of Pennsylvania, have  
5 invented certain new and useful Improvements in Feeding Mechanism for Gas-Producers, Furnaces, &c., of which the following is a specification, reference being had therein to the accompanying drawing.

My invention refers to improvements in feeding  
10 mechanism for gas producers, furnaces, etc. and it has for its object to charge quantities of fuel or other material into the furnace chamber from time to time evenly as to distribute the material over the surface of the charge.

15 With the ordinary bell and hopper construction the charge is distributed peripherally from the edge of the bell and lodges in the form of an annular ridge immediately within the walls of the furnace leaving an inverted conical cavity in the center.

20 My invention has in view to correct such an unequal distribution and to provide means which will insure the falling of the charge at the outside and center portions of the interior space, within control or regulation of the operator.

25 The invention consists generally in the combination with a receiving hopper, of a two-part bell arranged to be lowered as an entirety to distribute the charge to the outside, or whereby its inner portion may be lowered within its outer portion, said outer portion having interior sloping walls, to deflect the charge toward the center.  
30

Referring to the drawings;—Figure 1. is a vertical sectional view of the upper portion of a gas producer or other similar structure taken on the line 1. 1. of Fig. 4.  
35 Fig. 2. is a similar view showing the entire two-part bell lowered. Fig. 3. is a similar view showing the inner portion of the bell lowered. Fig. 4. is a plan view of the apparatus taken on the line IV. IV. of Fig. 1.

In the drawings 2 represents the producer or furnace  
40 structure which is usually cylindrical in form and is closed at its upper portion with a frame or coping plate 3 upon the upper portion of which is mounted the hopper 4 adapted to receive the charge of fuel or other material from any superimposed structure or vessel. The  
45 bottom of said hopper 4 empties, as usual, into the upper portion of the furnace or producer chamber, and is closed by my improved two-part bell construction, comprising the main outer bell 5 the sides of which slope outwardly and make a sealing contact with the  
50 lower edges of hopper 4, and also the relatively movable inner coping section 6, both of said portions being movable vertically with relation to the hopper 4. The outer bell 5 is suspended by links 7, 7, from the inner

end of lever 8 while the inner bell 6 is similarly supported by link 9 from the inner end of lever 10, both  
55 of said levers being mounted for independent operation upon a supporting shaft 11 and preferably provided with counterweights at their outer ends as will be readily understood. The lower peripheral edge of bell 6 terminates in a flange 12, preferably off-set below the general conical outer surface of the bell, said  
60 flange being adapted to interfit underneath the upper terminal peripheral edge 13 of the outer bell 5 as clearly shown in Fig. 1. By this construction, when both bells are assembled as shown in said figure, they constitute  
65 a practically single bell having a continuous smooth outer surface, the upper bell being capable of being lowered independent of bell 5 but necessarily resulting in lowering of the upper bell 6 when bell 5 is lowered. Also, when upper section 6 is raised it necessarily  
70 raises lower section 5, so that the effect of the counterweights of levers 8 and 10 is to normally maintain the two-part bell in sealing position as shown in Fig. 1.

In operation, when it is desired to empty the charge of hopper 4 into the furnace chamber and to distribute  
75 the contents around the outer interior, the entire bell is lowered as shown in Fig. 2, the effect being substantially the same as in the case of a solid single bell. When however, it is desired to distribute the contents toward the center the upper bell section 6 is lowered  
80 independently of the main bell 5, which will remain in its initial position, as shown in Fig. 3 and the contents of hopper 4 will pass through the opening of the upper portion of the main bell and downwardly over the peripheral edge of bell 6.  
85

For the purpose of positively deflecting the charge inwardly toward the center, main bell 5 is provided with an inwardly and downwardly extending flange or apron 14 which will arrest the charge and deflect it inwardly toward the center as clearly indicated by the  
90 arrows in Fig. 3.

Various other changes or modifications may be made by the skilled mechanic, but all such are to be considered as within the scope of the following claims.

What I claim is:

1. The combination with a furnace or producer and a superposed hopper opening thereinto, of an outer bell section adapted to seat underneath said hopper and provided with a central opening and an inwardly extending apron, a relatively movable inner bell section adapted for  
100 adjustment independent of said outer bell section, a rock shaft journaled in the side of the hopper, operating levers for the outer bell section secured to said shaft, and an operating lever for the inner bell section journaled upon said shaft, substantially as set forth.  
105
2. The combination with a furnace or producer and a superposed hopper opening thereinto, of an outer bell

section adapted to seat underneath said hopper and provided with a central opening and an inwardly extending apron, a relatively movable inner bell section adapted for adjustment independent of said outer bell section and  
5 provided with a depressed periphery adapting its upper surface to form a flush continuation with the upper surface of the outer bell, a rock shaft journaled in the side of the hopper, operating levers for the outer bell section secured to said shaft, and an operating lever for the inner

bell section journaled upon said shaft, substantially as set forth. 10

In testimony whereof I affix my signature in presence of two witnesses.

JOHN A. WALDBURGER.

Witnesses:

CHAS. S. LEPLEY,  
C. M. CLARKE.