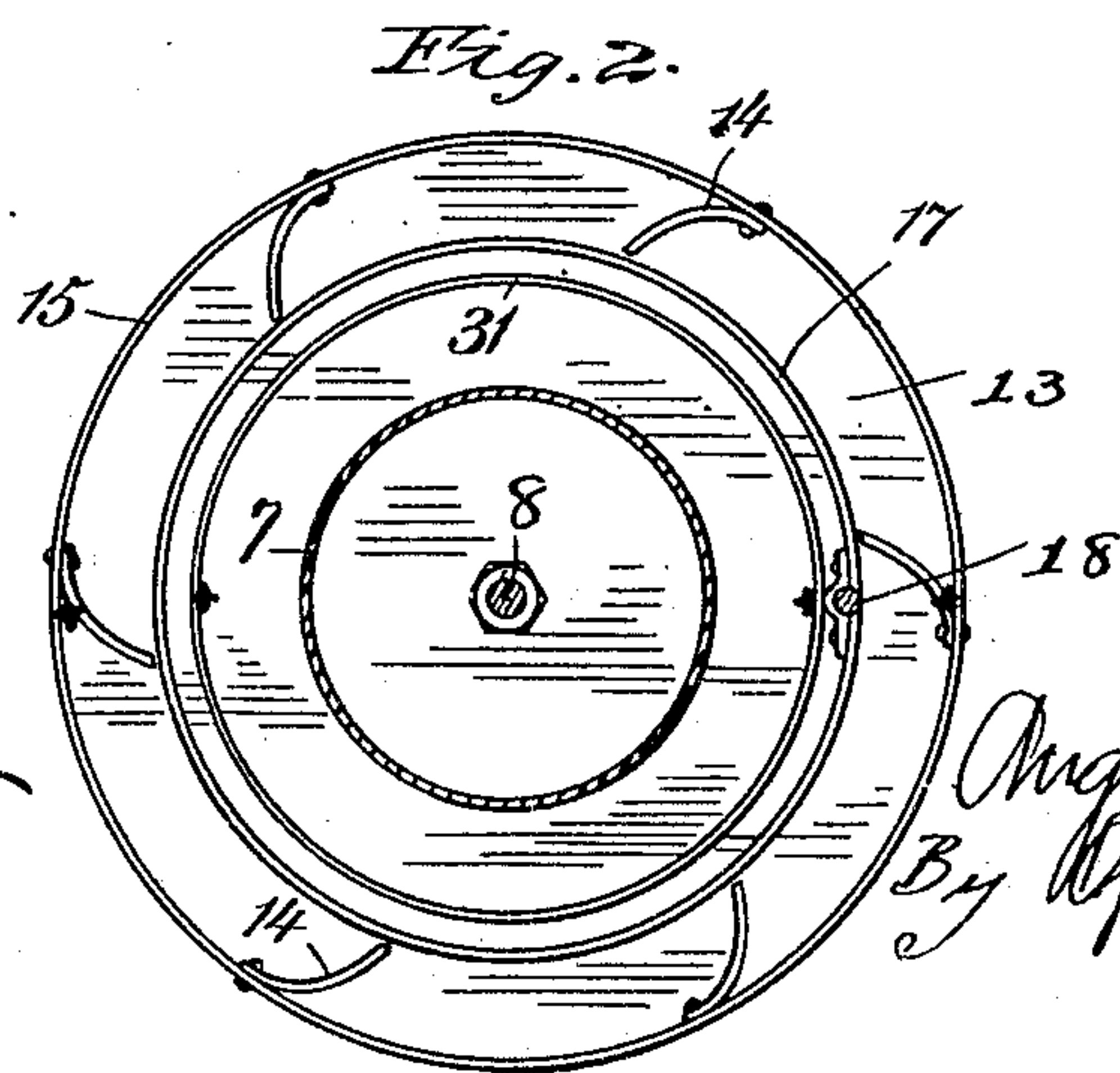
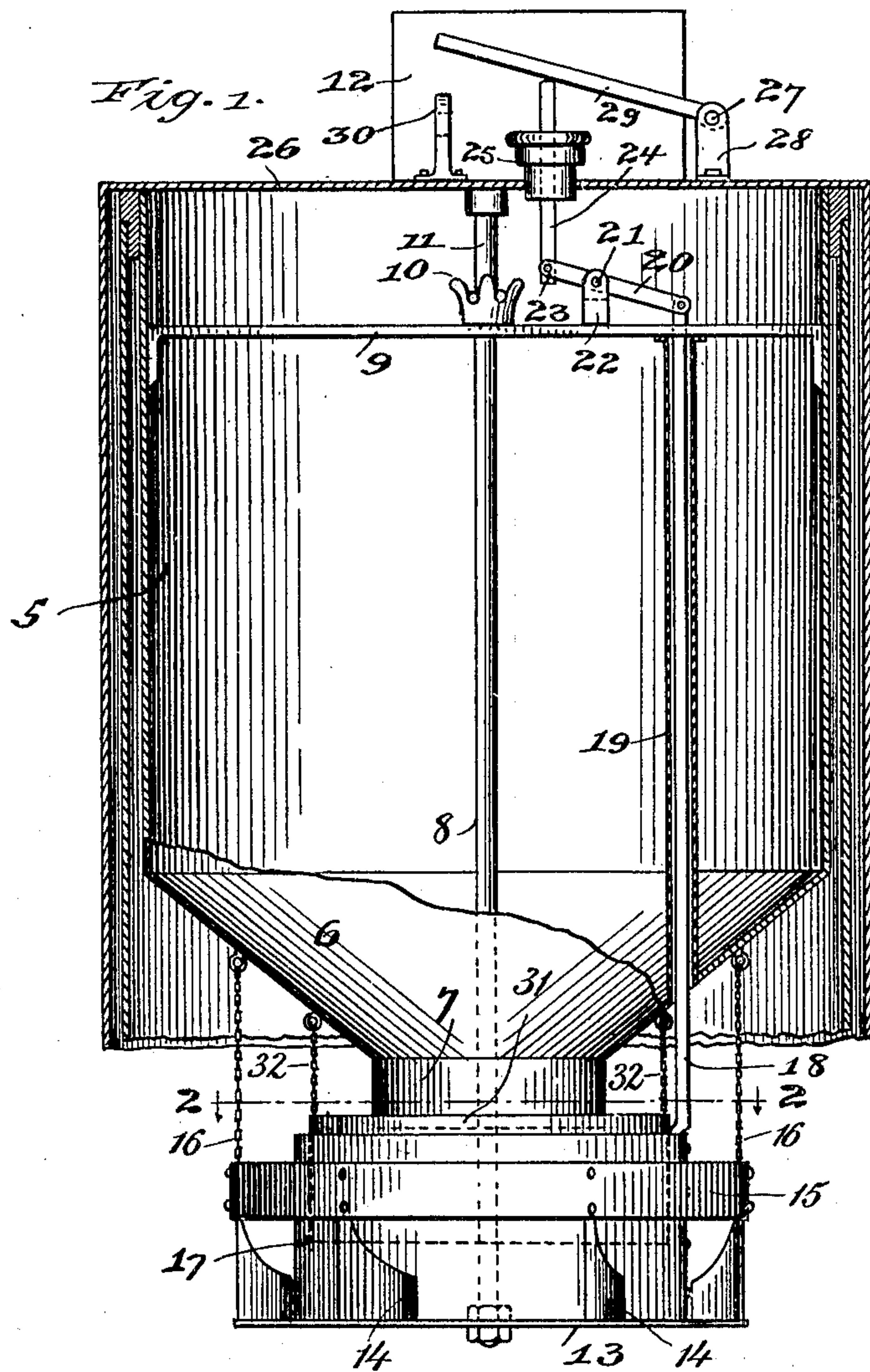


No. 871,570.

PATENTED NOV. 19, 1907.

A. DAVIS.  
CARBID FEEDING DEVICE.  
APPLICATION FILED JUNE 4, 1906.



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# UNITED STATES PATENT OFFICE.

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## CARBID-FEEDING DEVICE.

No. 871,570.

Specification of Letters Patent.

Patented Nov. 19, 1907.

Application filed June 4, 1906. Serial No. 320,058.

*To all whom it may concern:*

Be it known that I, AUGUSTINE DAVIS, a citizen of the United States, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Carbid-Feeding Devices, of which the following is a specification.

This invention relates to devices for feeding carbid in acetylene generators, and has reference more particularly to a novel device in the nature of a guard or shield for preventing accidental discharge and flow of the carbid through the feeding device when the latter is idle.

The device of the present invention is designed more particularly for coöperation with a carbid feed of the type shown in Letters Patent to Augustine Davis and Paris L. Davis, No. 705,739, granted July 29, 1902, (Figures 1, 2 and 5) and to Augustine Davis, No. 719,091, granted January 27, 1903 (Fig. 3).

The invention will be readily understood when considered in connection with the accompanying drawings illustrating the same, wherein,—

Fig. 1 is an elevational view, partly in vertical section, of a carbid-feeding device, showing my improvements applied thereto; and Fig. 2 is a horizontal sectional view on the line 2—2 of Fig. 1.

Referring to the drawings, and first briefly describing the main parts of the carbid-hopper and feed mechanism, for a fuller description of which reference may be had to the Letters Patent above referred to, 5 designates the carbid-hopper having a downwardly convergent or flaring bottom wall 6 terminating in a central discharge throat 7. Mounted centrally and co-axially within the hopper 5 is a vertical shaft 8, which has its bearings in one or more transverse supporting pieces 9 and is provided at its upper end with a coupling member 10, by means of which it may be connected with the driving shaft 11 of a suitable motor, conventionally illustrated at 12. The shaft 8 extends down through the discharge mouth 7 of the hopper and is provided at a distance below the same 50 suitable for the feed of the carbid with a horizontal feed-plate 13 of round or disk-like form and rotated by the shaft 8. The location of this feed-plate is such that as the carbid passes out of the discharge mouth of the 55 hopper it falls upon said feed-plate, and

when said feed-plate is rotated it carries around with it the carbid lying upon it, with a circular motion in a plane at right angles to the direction of feed, which is vertical. This movement results in a centrifugal action, 60 which tends to cause the carbid lying on the feed-plate to move out toward the edge of the same, it being eventually discharged over the edge of said plate. In conjunction with the rotating feed-plate there is employed one or more non-rotating sweeps or 65 scraper blades 14, arranged obliquely with reference to the radius of the disk 13, and consequently at an angle to the path of motion of the surface of the disk. These sweeps 70 are located immediately above the upper surface of the feed-plate and approximately at a right angle to the plane thereof. These sweeps are carried by a ring or annulus 15 suspended by chains or other flexible connections 16 from the bottom of the carbid-hopper in such a manner that the sweeps are not rigidly held, but are free to yield to a limited extent, and thus prevent clogging and excessive resistance to the action of the 80 motor. The ring and sweeps are conveniently made in one piece by cutting out the sweeps along their front and top edges and bending their free ends inward toward the shaft 8, the cut-out portions thus forming 85 openings for the discharge of the carbid from the feed-plate.

31 designates a guide-ring located inside the ring 15 and sweeps 14 and surrounding the discharge mouth of the hopper; said 90 ring being loosely suspended by chains 32 and terminating some distance above the feed-plate 13, and having for its function to regulate the feed of the carbid to the feed-plate in proper quantities, said ring also aiding in effecting a substantially uniform distribution of the carbid from the discharge 95 mouth onto the feed-plate.

Referring now more particularly to the immediate subject-matter of the present invention, 17 designates a collar or sleeve 100 of suitable diameter to loosely fit within the annulus 15 and its sweeps or blades 14, and surrounding the guard-ring 31, as shown. To this collar is secured an actuating rod 18 105 which extends upwardly through a tubular guide 19 formed in the carbid hopper, and is connected at its upper end to one end of a lever 20 pivoted at 21 on a lug or bracket 22 resting on the cross-piece 9, the other end 110



of said lever being pivotally connected at 23 to the lower end of a rod or stem 24 that extends upwardly through a packed joint 25 in the top or cover 26 of the hopper. Piv-  
 5 oted at 27 in the upper end of a bracket or post 28 on the cover 26 is an operating lever 29 that rests on the upper end of the rod 24, the free end of said lever being adapted, when depressed, to engage beneath a hook  
 10 30 also mounted on the cover 26.

From the foregoing it will be seen that when the carbid feed device is to be started in action, by depressing the lever 29 and engaging the free end of the same with the hook  
 15 30, the collar or sleeve 17 is raised above and out of the way of the annular discharge throat of the carbid-feed mechanism, thus permitting the normal operation of the latter in the manner fully set forth in the Letters Patent  
 20 above referred to. On the other hand, when the motor, and consequently the carbid-feed mechanism, is stopped, either automatically or manually, the lever 29 is released from the hook 30, and the weight of the collar causes  
 25 it to drop into substantial engagement with the feed-disk 13, as shown by full lines in Fig. 1, the collar in such position forming in effect a closure or shield to prevent accidental dropping or flow of the carbid by gravity  
 30 over the edge of the feed-disk.

The device of the present invention is particularly useful as applied to machines designed to be employed on railway wrecking cars, wherein the generator is not in opera-  
 35 tion when the car is moving from one point to another, but is used when the wrecking machinery is in operation. An additional and useful function served by the shield is to guard the carbid from dampness and to pre-  
 40 vent hydration.

It will be evident that changes and modifications in the specific details of the device shown and described might be made by those skilled in the art without departing from the

principle or sacrificing the advantages of the 45 invention; and hence the latter is not limited to the particular form shown and described, except to the extent indicated in specific claims.

I claim:

1. The combination with a carbid feed 50 hopper having a discharge throat and a rotary feed disk mounted horizontally below the lower end of said throat, of a sleeve loosely surrounding said throat, means mounted on 55 and externally of said hopper for moving said sleeve into either operative or inoperative position when the hopper is closed, and connections between said actuating means and said sleeve. 60

2. The combination with a carbid-feed hopper having a discharge throat and a rotary feed-disk mounted horizontally below the lower end of said throat, of a sleeve 65 loosely surrounding said throat, an actuating lever mounted on and externally of the carbid-hopper, and connections between said lever and said sleeve whereby the latter may be raised above the annular space be- 70 tween the lower end of said discharge-throat and feed-disk.

3. The combination with a carbid-feed hopper having a discharge-throat and a rotary feed-disk mounted horizontally below the lower end of said throat, of a sleeve 75 loosely surrounding said throat, an actuating lever mounted on and externally of the carbid-hopper, and lever and link connections between said lever and said sleeve whereby, upon depressing said actuating lever, said 80 sleeve may be raised above the annular space between the lower end of said discharge-throat and feed-disk.

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