No. 780,880. PATENTED JAN. 24, 1905.

G. W. FRAZIER.

SANDER FOR LOCOMOTIVES.

APPLICATION FILED MAY 26, 1904.

2 SHEETS—SHEET 1.

Fig. 1.

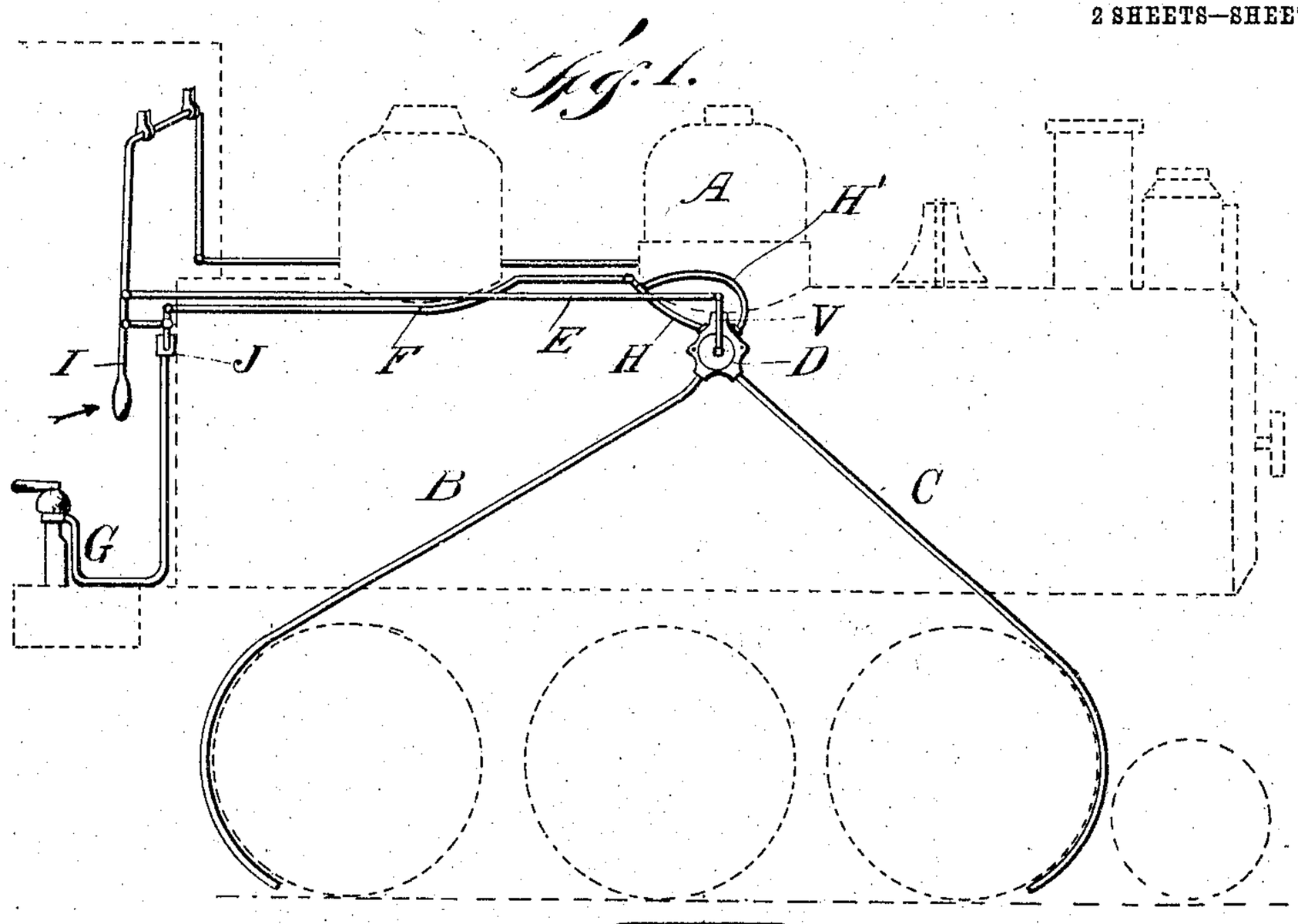
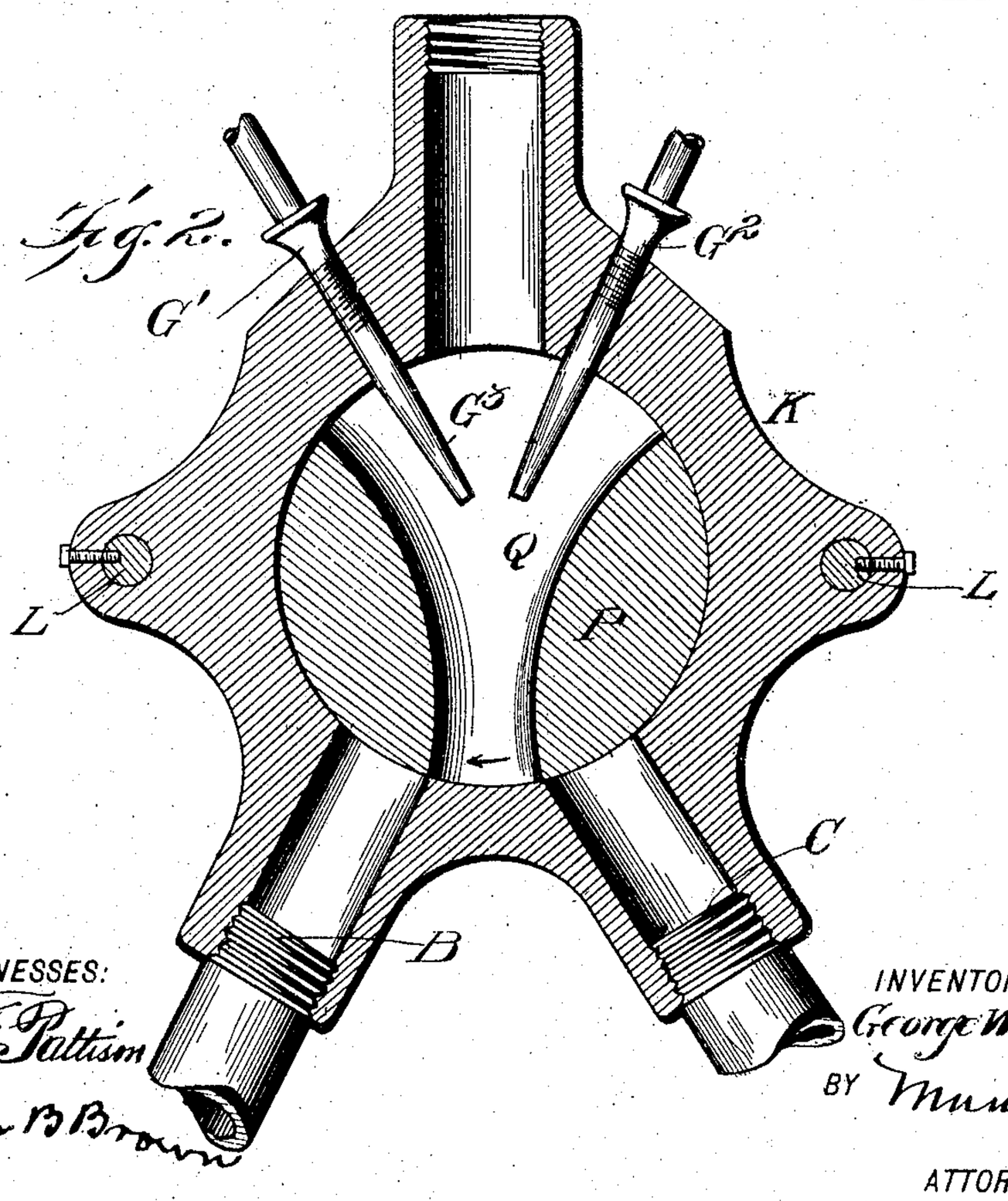


Fig. 2.



WITNESSES:

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Fig. 3.

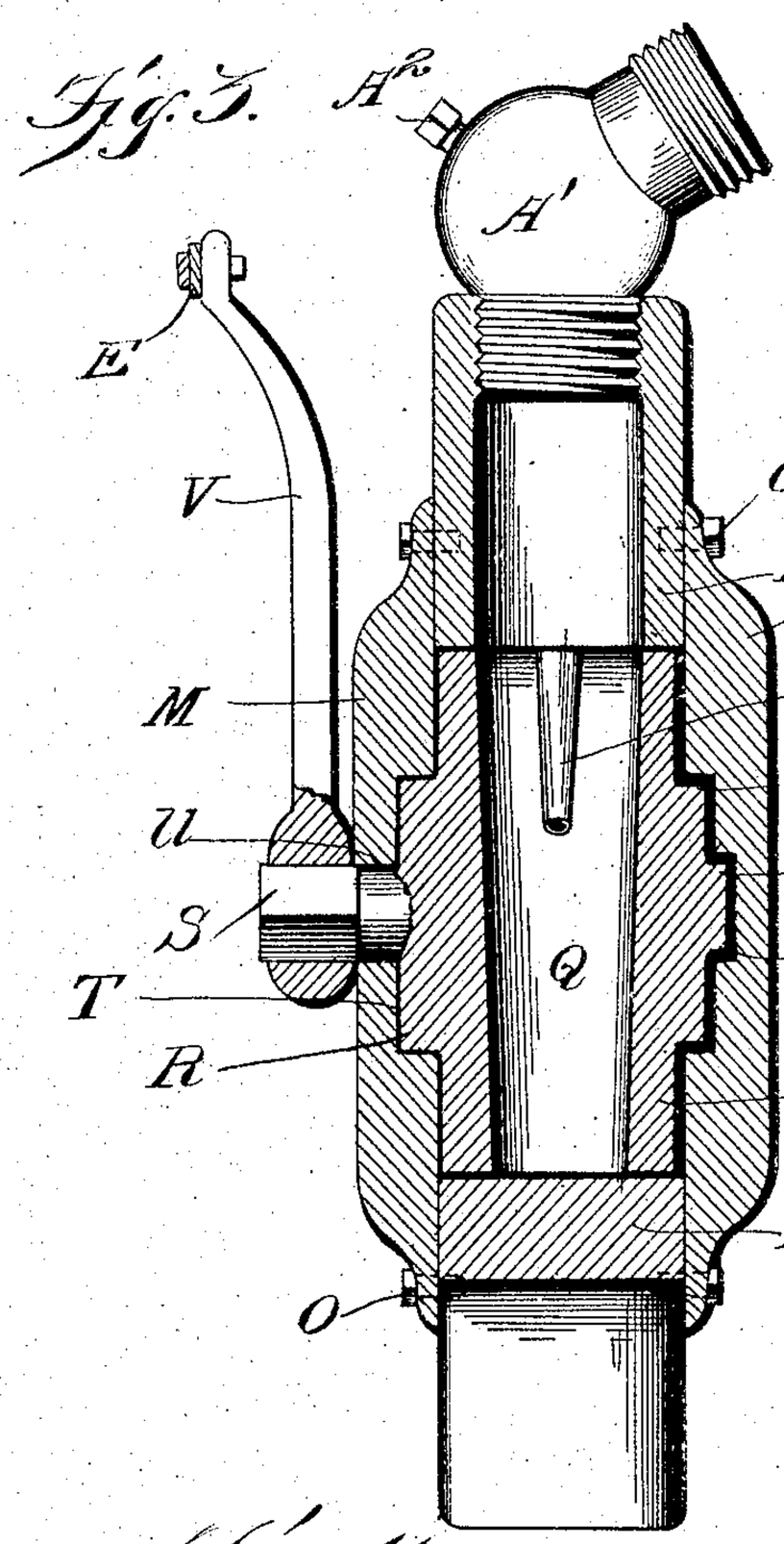
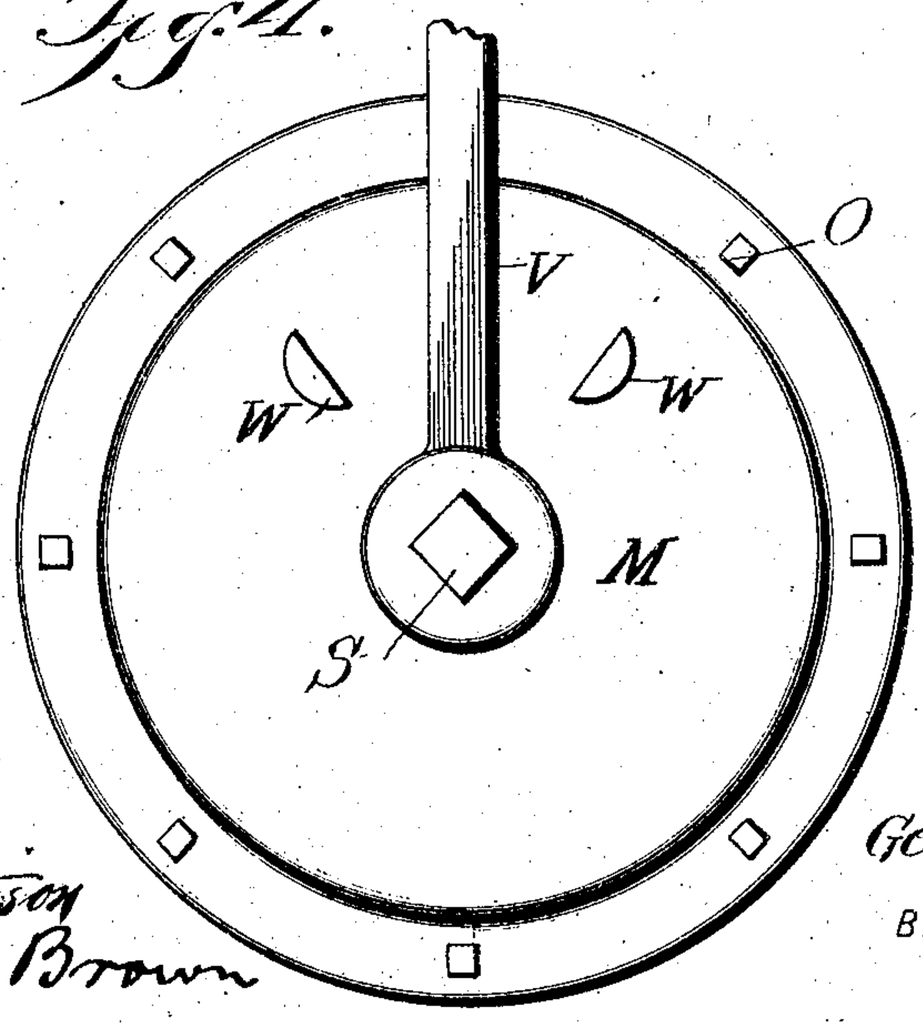


Fig. 4.



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UNITED STATES PATENT OFFICE.

GEORGE W. FRAZIER, OF ALAMOGORDO, TERRITORY OF NEW MEXICO.

SANDER FOR LOCOMOTIVES.

SPECIFICATION forming part of Letters Patent No. 780,880, dated January 24, 1905.

Application filed May 26, 1904. Serial No. 209,885.

To all whom it may concern:

Be it known that I, GEORGE W. FRAZIER, a citizen of the United States, and a resident of Alamogordo, in the county of Otero and Territory of New Mexico, have invented certain new and useful Improvements in Sanders for Locomotives, of which the following is a specification.

This invention relates to sanding devices for use on locomotives to prevent slipping action of the drivers upon the rails.

The invention has for its object to simplify and improve certain details of construction, more particularly the sand feed or cut-off valve devices.

It consists of the special construction, arrangement, and combination of parts, which will hereinafter be fully described, shown in the accompanying drawings, and pointed out in the claims.

In the drawings, Figure 1 is a view illustrating my invention in use on a locomotive, the latter being shown in dotted diagram. Fig. 2 is a central vertical sectional view through the sand cut-off. Fig. 3 is a similar view thereof, but taken in reverse direction therethrough; and Fig. 4 is a detail view showing the front plate of the sand-cut-off casing and a portion of the cut-off crank-arm.

While the features of novelty reside in peculiar sand feed and cut-off devices, I have thought best to describe and illustrate them in connection with one form of sanding apparatus, which I will briefly describe as follows:

A denotes the sand-box; B, the back-up delivery-pipe; C, the forward delivery-pipe; D, the sand cut-off in a passage-way leading from the sand-box A into the said back-up and forward delivery-pipes, and E a suitable rod extending from the locomotive-cab to said sand cut-off, wherethrough the latter is worked.

F denotes an air, gas, or fluid pipe leading from any suitable supply means G and having branches H H′ extending into opposite sides of the sand-cut-off valve D through means of nozzles G′ G^2, as shown in Fig. 2.

The sand cut-off D is designed to be worked, through the rod E, by means of a hand-lever I in the locomotive-cab, and air-pipe F may have a suitable cut-off at J, having suitable operative connection to the hand-lever I, adapting it for adjustment conjointly with opening action of the sand-cut-off valve, as shown in Fig. 1. The sand cut-off D consists of a case K, supported by fixed arms L on the locomotive and having front and rear plates M N, secured by bolts O or other suitable means. An oscillating valve P, having a downwardly-tapering passage-way Q, is arranged in the case K. The valve Q is supported by centering or projecting bosses R R′ and a spindle S, seated in like shaped recesses T and the bearing U in the front and rear plates M N, as shown in Fig. 3. A crank-arm V is arranged on the outer end of the spindle S, having suitable connection with the forward end of the rod E. Suitable stops W may be arranged on the front plate M of the valve-case, whereby to limit action of the crank-arm V, and thus insure proper adjustment of the passage-way Q through the valve P to the back-up or forward delivery-pipes B C. It will be noticed that the nozzles G′ G^2 are extended, as at G^3, into the valve passage-way Q and that they are disposed for directing the air, gas, or fluid jets together and thereby downwardly into the delivery-pipes B C with minimum guiding or abrasive action, if not entirely so, against the side walls of the valve passage-way. The valve-casing K is made connecting with the sand-box A through means of a suitable nipple or union A′, having a clean-out plug A^2.

Operation of my improved sander will be understood from the above description upon reference to the several figures of the drawings, in which all the parts are shown at closed adjustment—*i. e.*, with flow of the air and sand cut off. Upon shoving the handle I in direction indicated by the arrow (see Fig. 1) through means of the rod E and crank-arm V the valve passage-way Q will be adjusted, as indicated by the arrow at its lower end, for leading sand into the back-up pipe B. Reverse move of the handle I will adjust the valve P, leading sand into the forward delivery-pipe C, as will be understood. It will be further un-

derstood that the cut-off J in the air, gas, or fluid pipe F is opened conjointly with each sand-feeding adjustment of the valve P.

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

1. The combination in a sander employing back-up and forward delivery-pipes, fluid-conveying means, and operating means, of a sand cut-off between the sand-supply and the delivery thereof, consisting of an oscillating valve adapted to be adjusted through action of said operating means, and nozzles at the feeding end of the fluid-pipe, leading in the valve and disposed for impingement of their jets in the valve passage-way, substantially as described.

2. In a sander, a sand cut-off, consisting of a suitable casing having an oscillating valve therein, and nozzles adapted to feed fluid-jets at an angle into the valve passage-way, and into impingement one with the other, substantially as described.

GEORGE W. FRAZIER.

Witnesses:
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