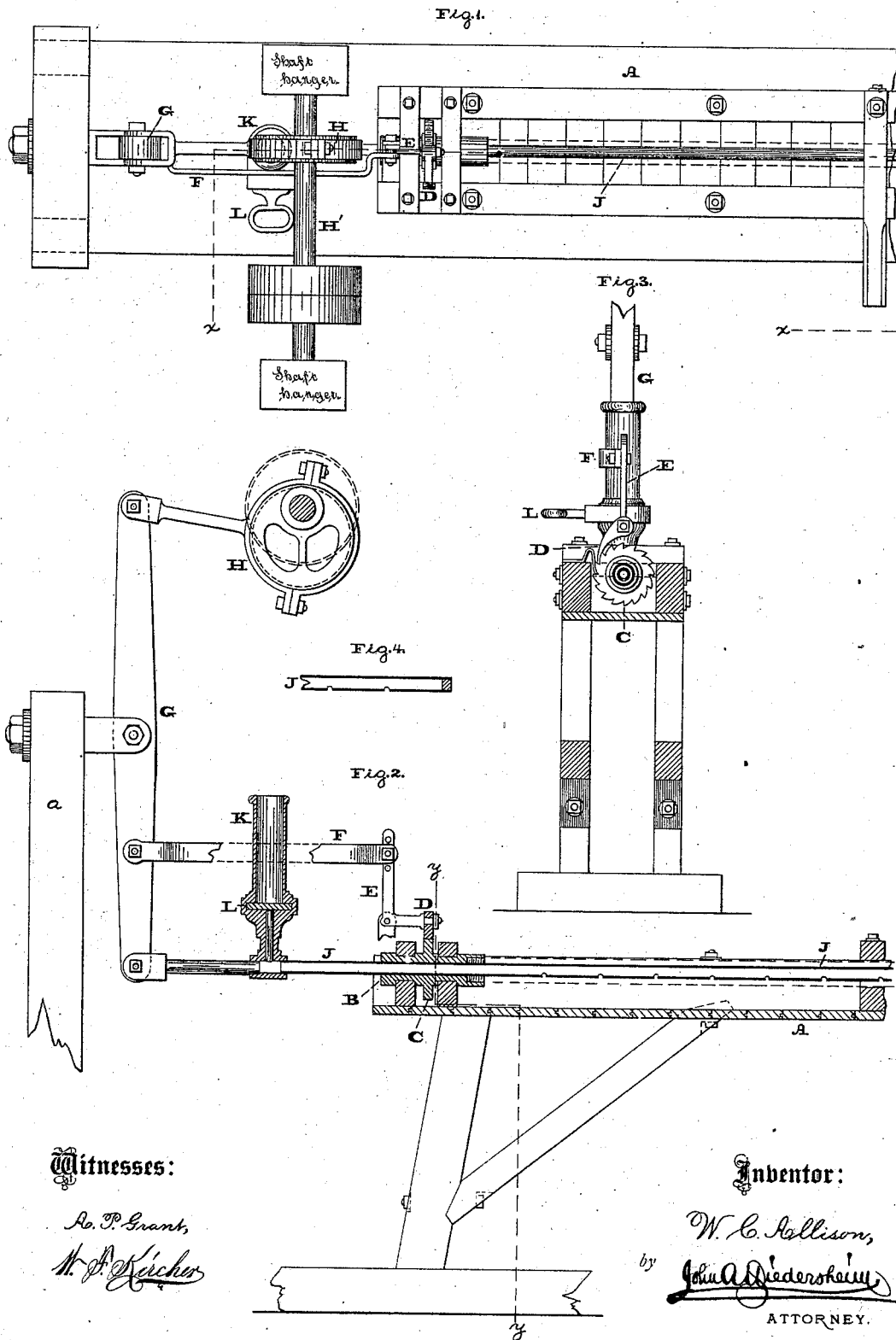


W. C. ALLISON.
Machine for Scouring Metal-Tubes.
No. 219,195. Patented Sept. 2, 1879.



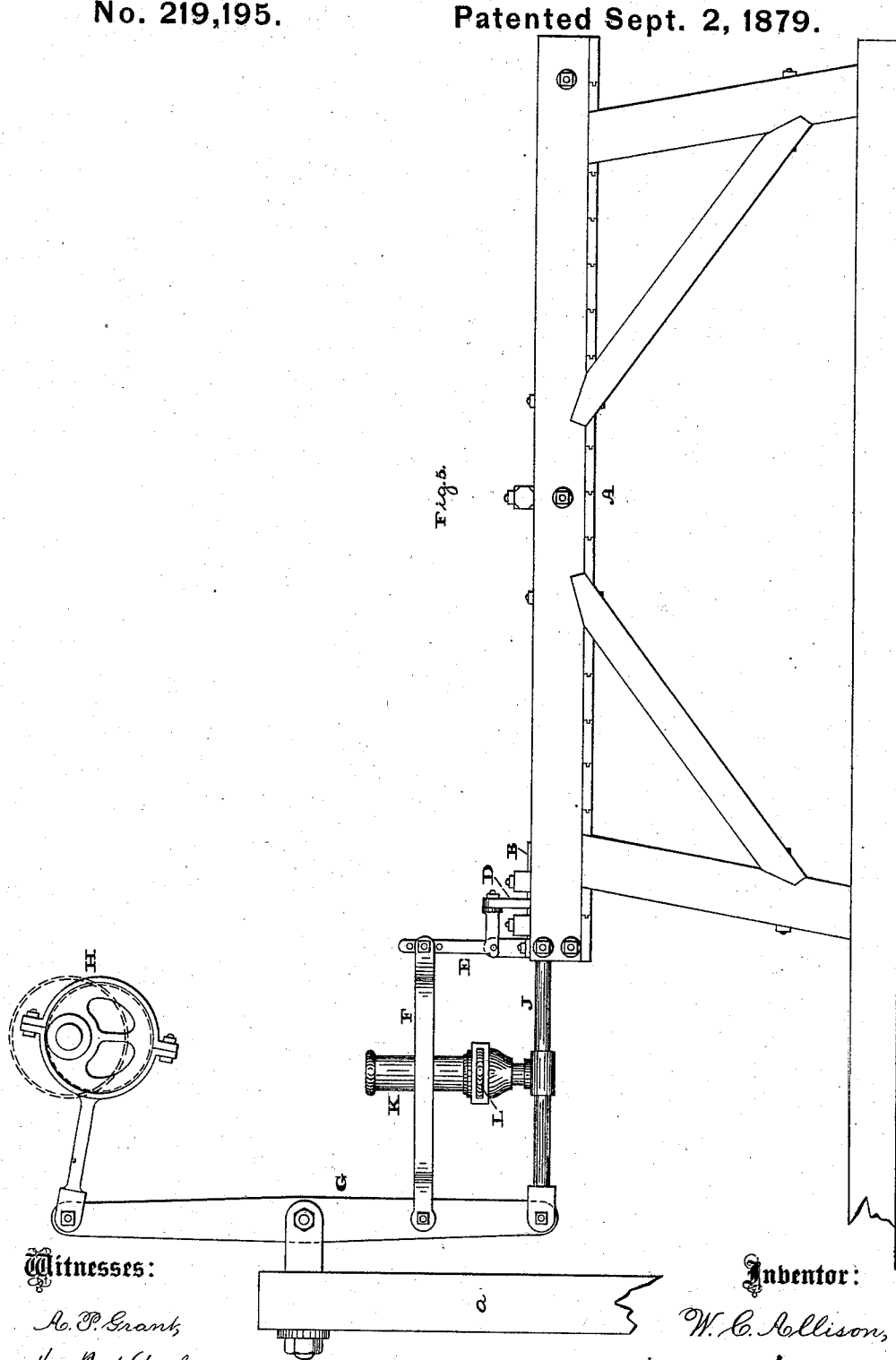
Witnesses:

R. P. Grant,
H. P. Fisher

Inventor:

W. C. Allison,
by John A. Diederichsen
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W. C. ALLISON.
Machine for Scouring Metal-Tubes.
No. 219,195. Patented Sept. 2, 1879.



Witnesses:

A. P. Grant,

W. F. Kitcher

Inventor:

W. C. Allison,

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UNITED STATES PATENT OFFICE.

WILLIAM C. ALLISON, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO
WILLIAM C. ALLISON & CO., OF SAME PLACE.

IMPROVEMENT IN MACHINES FOR SCOURING METAL TUBES.

Specification forming part of Letters Patent No. **219,195**, dated September 2, 1879; application filed
June 2, 1879.

To all whom it may concern:

Be it known that I, WILLIAM C. ALLISON, of the city and county of Philadelphia, and State of Pennsylvania, have invented a new and useful Improvement in Machines for Scouring Metal Tubes, which improvement is fully set forth in the following specification and accompanying drawings, in which—

Figure 1 is a top or plan view of the machine embodying my invention. Fig. 2 is a vertical section thereof in line *xx*, Fig. 1. Fig. 3 is a vertical section thereof in line *yy*, Fig. 2. Fig. 4 is a view of a detached part. Fig. 5 is a side elevation of the machine embodying my invention.

Similar letters of reference indicate corresponding parts in the several figures.

My invention has for its object the scouring and removal of imperfections and roughness from the interior of metal tubes.

The said invention consists, chiefly, in a perforated pipe, in combination with suitable means for continuously reciprocating it within the tube to be scoured, the pipe being adapted to receive and discharge the scouring material during its reciprocation.

The said invention further consists in a perforated pipe, in combination with suitable means for continuously reciprocating it within the tube to be scoured, and with means for rotating the latter tube, the said perforated pipe being adapted to receive and discharge the scouring material during its reciprocation.

It also consists in the combination of a discharge-fountain with said perforated pipe adapted as above stated, and with the devices for reciprocating said pipe, as set forth.

It also consists in a hollow rotary bearing or collar, in combination with said pipe thus adapted, and with the devices for reciprocating the pipe and rotating the tube to be scoured, as stated.

It also consists in a trough, in combination with said bearing, the perforated pipe adapted as above stated, and the other devices hereinbefore mentioned.

Referring to the drawings, A represents a table or trough, which is properly supported, and at one end thereof is mounted a hollow bearing or collar, B, having on its periphery

a ratchet, C, with which engages a pawl, D, depending from a crank-arm, E, pivoted to one end of a connecting-arm, F, whose other end is pivoted to a lever, G, suitably mounted on frame-work or support *a*, said lever being operated by an eccentric, H, or other mechanism on a shaft, H', supported on hangers and receiving power in any proper manner.

To the lower end of the lever G is pivoted a horizontally-arranged pipe, J, which passes freely through the hollow bearing B and projects into the space of the trough A. Secured to and communicating with said pipe is a fountain, K, which is provided with a valve, L, so as to close and open communication with said pipe J, the fountain being adapted to receive sand or other scouring material and distribute it to the pipe.

The end of the bearing or collar B on the side opposite to the fountain K is screw-threaded for engagement with the threads of the tube to be cleansed, or provided with clamping mechanism for attaching the tube to said bearing.

The pipe J is perforated, preferably at its lower portion, and the end within the trough A is closed by a plug or stopper, but free for the passage of the tube to be scoured.

The operation is as follows: The tube is slipped over the distributor J and secured to the bearing or collar B, and is otherwise supported on the trough A. Sand or other scouring material is placed in the fountain K and the valve L duly opened.

Power is communicated to the shaft H', whereby, as the lever G is operated, reciprocating motions are imparted to the tube J, and the bearing or collar B is rotated, thus rotating the tube to be scoured.

The scouring material is distributed from the fountain into and through the pipe J by agitation due to the reciprocations of the pipe, and escapes through the perforations thereof into the tube. As the latter is rotated and a portion of its inner surface constantly subjected to the attrition of the scouring material due to the rubbing movements of the pipe, it is evident that said surface will be scoured and imperfections and roughness removed. When the operation is completed the tube is

released and withdrawn, and the scouring material therein poured into the trough A, from whence it may be collected and returned to the fountain.

The pipe J may be operated by a cam or eccentric in one direction and a spring in the other direction, and blows may be imparted to it to increase the agitation of the scouring material.

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

1. A perforated pipe, in combination with suitable means for continuously reciprocating it within the tube to be scoured, the pipe being adapted to receive and discharge the scouring material during its reciprocation.

2. A perforated pipe, in combination with suitable means for continuously reciprocating it within the tube to be scoured, and with means for rotating the latter tube, the said perforated pipe being adapted to receive and discharge the scouring material during its reciprocation.

3. The combination, with supply-fountain K and perforated pipe J, of suitable devices for reciprocating said pipe within the tube to be scoured, the said perforated pipe being adapted to receive and discharge the scouring material during its reciprocation.

4. The hollow rotary bearing or collar B and perforated pipe J, in combination with devices for reciprocating said pipe within the tube to be scoured, and with suitable devices for rotating the latter tube, said perforated pipe being adapted to receive and discharge the scouring material during its reciprocation.

5. The trough A, bearing B, and perforated pipe J, in combination with suitable devices for reciprocating said pipe within the tube to be scoured, and with suitable devices for rotating the latter tube, said perforated pipe being adapted to receive and discharge the scouring material during its reciprocation.

WILLIAM C. ALLISON.

Witnesses:

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