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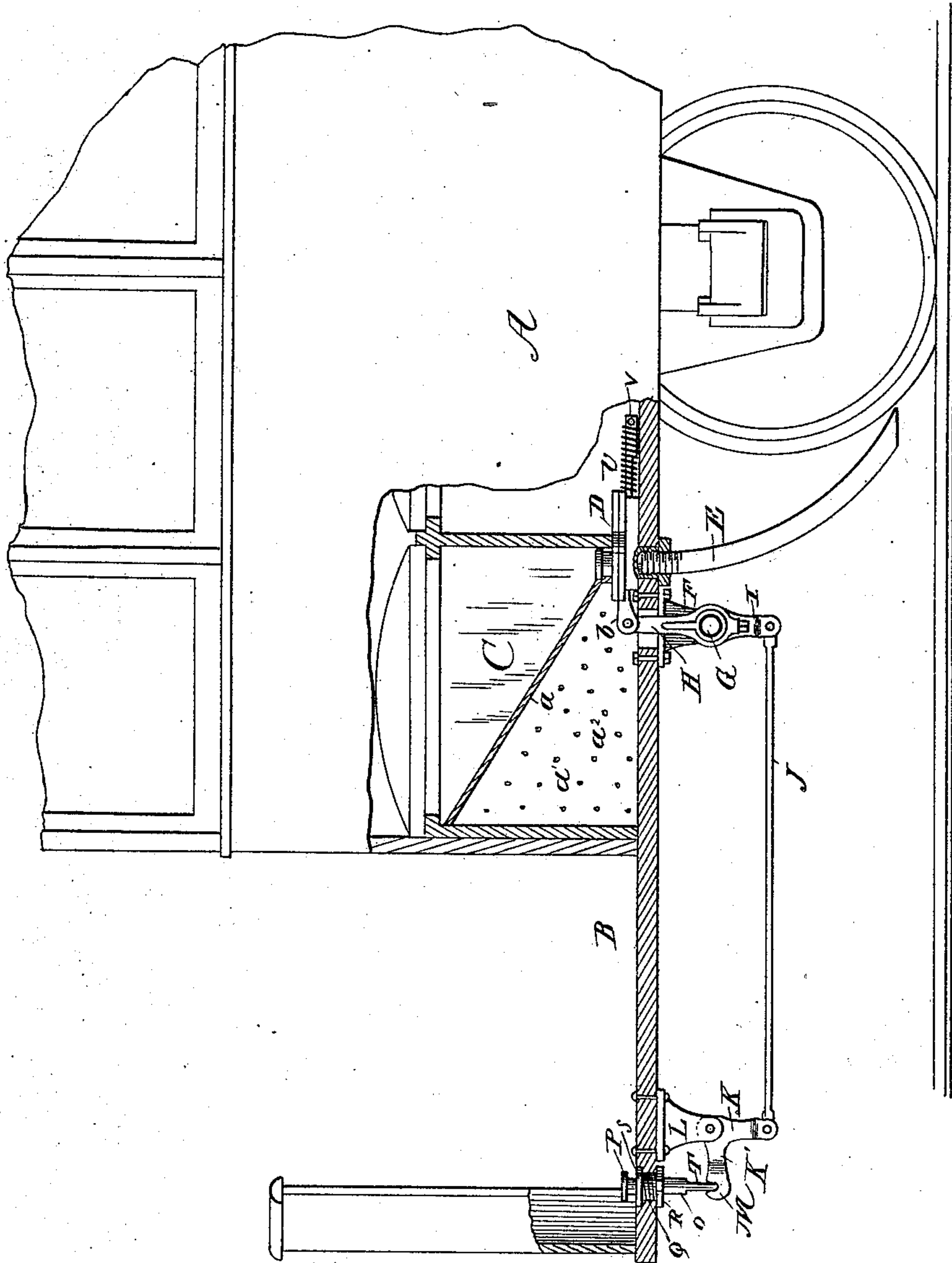
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H. MÜLLER, Jr., & M. A. CUMING.

SANDING APPARATUS FOR RAILWAY CARS.

No. 412,402.

Patented Oct. 8, 1889.



WITNESSES:

Chas. Benjamin
E. Keefe

Fig 1

INVENTOR

Henry Müller, Jr.
Mari A. Cuming

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(No Model.)

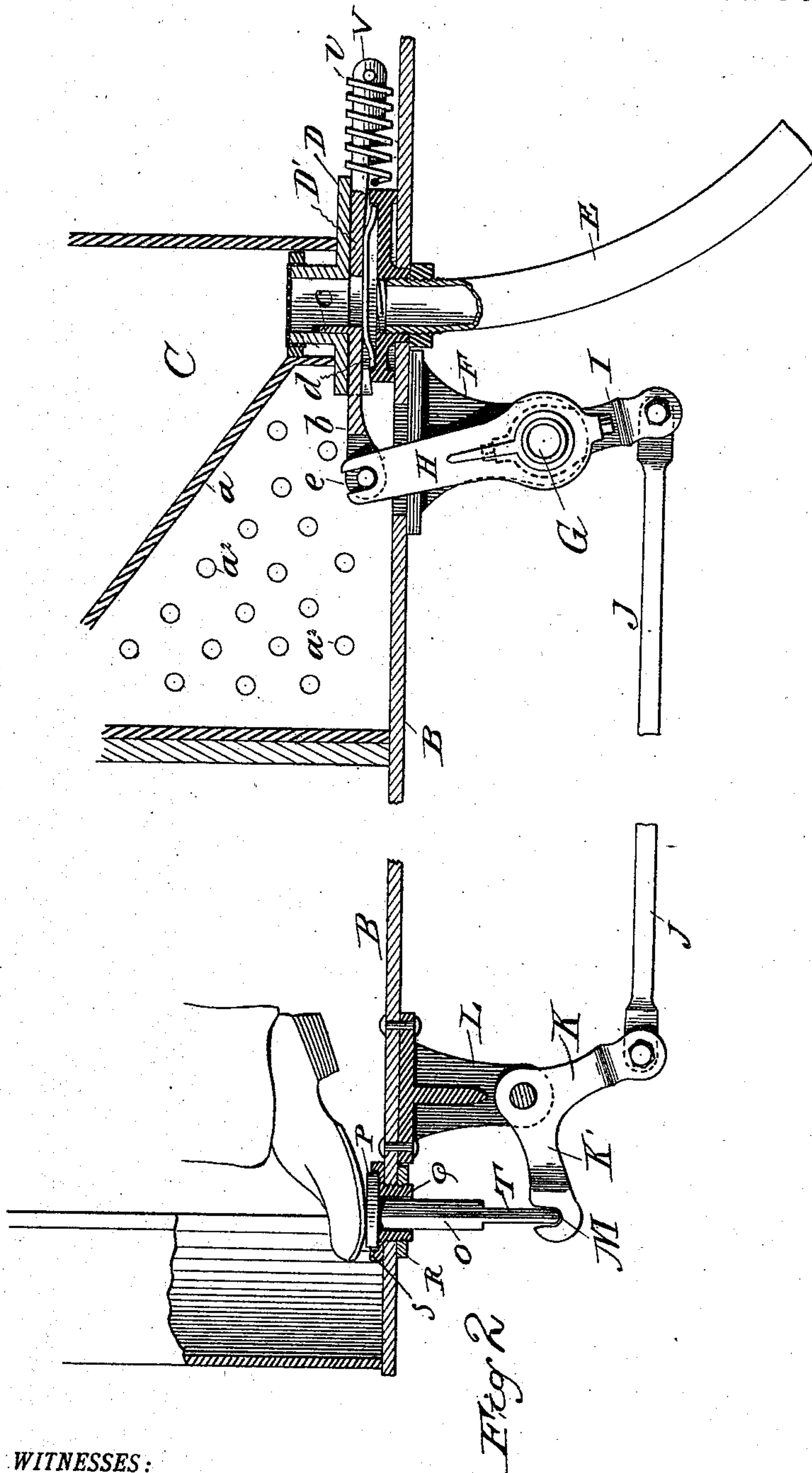
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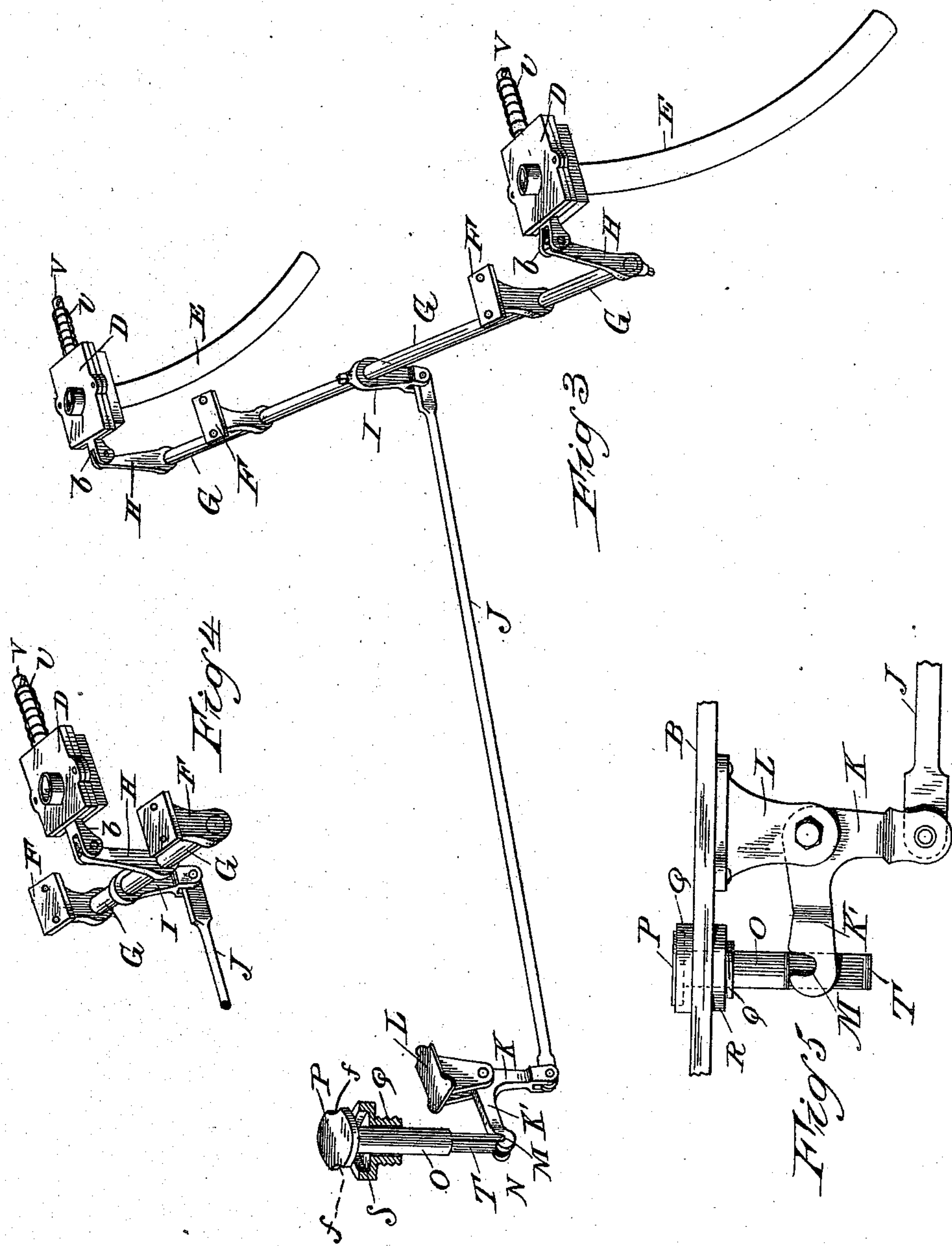
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UNITED STATES PATENT OFFICE.

HENRY MÜLLER, JR., OF NEW YORK, AND MARI A. CUMING, OF BROOKLYN,
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SANDING APPARATUS FOR RAILWAY-CARS.

SPECIFICATION forming part of Letters Patent No. 412,402, dated October 8, 1889.

Application filed December 24, 1888. Serial No. 294,512. (No model.)

To all whom it may concern:

Be it known that we, HENRY MÜLLER, Jr., residing at New York, in the county of New York and State of New York, and MARI A. CUMING, residing at Brooklyn, in the county of Kings and State of New York, both citizens of the United States, have made a certain new and useful Improvement in Devices for Operating Sand-Boxes for Railway-Cars, of which the following is a specification.

This invention relates to an improvement in sand-box-operating devices; and it consists in providing the sanding apparatus with a device whereby one or more sand-boxes can be operated simultaneously by means of a single treadle, thus doing away with a multiplicity of connecting-rods, &c., simplifying the device and subjecting it to less danger from breakage, getting out of order, and being clogged up with mud or ice, and by reason of its peculiar construction also presents the advantageous feature of enabling the whole sanding device, except the conducting-tube, to be placed within the car, thereby preventing the valve and its contained mechanism from becoming disarranged or broken from any of the causes before mentioned, also enabling the valve and its immediate connections to be removed and inspected or refitted without resorting to the usual trouble and annoyance of getting under the car to do so, which is very often not easily done.

Another feature of our invention consists in so constructing the treadle that when from any reason the sanding apparatus is not to be used the treadle may be made inoperative, and in such a way as to insure its remaining in a locked condition without encumbering the platform with protruding and intricate devices to perplex and hinder the manipulation of the device by the operator.

We have shown our invention in connection with the sand-box covered by the patents of Jordan, Mills, and Jordan, dated June 21, 1887, No. 365,076, and No. 408,178, dated July 30, 1889, and have used the device shown herein simply for convenience of illustration, and, further, for the purpose of showing a complete and operative sanding apparatus,

but do not intend to claim anything therein shown or described.

The invention further consists in certain combinations, which will be more fully pointed out in the specification and claims and illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation of a street-car with a portion broken away to more clearly show the position and relation of the various parts of the device; Fig. 2, an enlarged and partly-sectional side elevation of Fig. 1, showing the position of the parts of the device while being operated; Fig. 3, a perspective view of the device adapted to operate sets of sand-boxes; Fig. 4, a detached perspective view showing the device adapted to operate a single sand-box; and Fig. 5, a side elevation of the treadle and a portion of the car-platform, showing the push-pin out of operation.

Similar letters refer to similar parts throughout the several views.

In the drawings, A is the car-body, and B the platform thereof.

C is the sand-hopper, having an inclined bottom *a* and perforated sides *a'* leading into an air-space *a²* beneath the inclined bottom.

D is the valve-casing, located within the car and within line with the hopper C; D', the valve, and E the discharge-tube passing through the floor of the car. The valve is also provided with a stirrer *c* for breaking up lumps of sand, and a lug or projection *d* to limit the forward throw of the valve.

As the construction and particular function of the various elements shown herein are described in the patents before referred to, it is not necessary to describe them here at length.

The sand-box and valve-casing are placed in any desirable location in reference to the car-wheels; or if it is desired that they should be arranged in sets, then they should preferably be arranged in line transversely with each other. Upon the under side of the floor of the car are bolted two hangers F, and which are provided with a transverse rocker-shaft G, mounted to rotate in the said hangers.

When the device is designed to operate

two sand-boxes, the shaft G is provided with rocker-arms H, screwed or otherwise fastened to it, which pass up into the car through slots cut for them in the car-floor, and are pivotally connected to the valve-rod *b* of the valve D'. From the rocker-shaft G, and fastened to it by set-screws or otherwise, depends a crank-arm I in pivotal connection with the connecting-rod J, leading forward to the platform B of the car. The forward end of the rod J is pivotally connected with an arm of the bell-crank lever K, pivotally supported in the hanger L, which is bolted to the under side of the platform. One end K' of the bell-crank lever is provided with a depression M, which may be circular or otherwise shaped, and a longitudinal slot N, extending inwardly from the end of the arm K' of the bell-crank lever K, the function of both the said depression and slot being hereinafter set forth.

O is a push-pin engaging with the arm K' of the bell-crank lever, extending upwardly through the platform at any convenient point, and is provided with an enlarged head P, upon which the operator places his foot. The push-pin O passes through a bushing Q, secured to the platform by the nut R, and is provided with a seat S, in which the enlarged head P of the push-pin O may rest. The lower end of the push-pin O is reduced in diameter, as at T, in order that it may operatively engage with the arm of the bell-crank lever K, by resting in the depression M, provided for its reception.

Should it be desired to use the device in connection with but one sand-box, as shown in Fig. 4, the same parts can be used, except that the rocker-shaft G should preferably be made shorter and the rocker-arm H placed in such a position on the rocker-shaft as to be in line with the valve-case D.

The mode of operation is best seen in Fig. 2 and is as follows: The device when not in use assumes the position shown in Fig. 1, and when it is desired to sand the track or to operate the device for the purpose of stirring up the sand in the hopper the operator places his foot upon the head P of the push-pin O, and by pressing down upon the same the bell-crank lever K is vibrated, and with it, by means of the rod J and crank-arm I, the shaft G is vibrated, which in turn vibrates the rocker-arm H, and by so doing the valve-rod *b* is moved forward, sliding the valve D' within the valve-casing D. When sufficient sand has been allowed to issue from the sand-box, the operator removes his foot from the push-pin, and the spring U on the extended portion V of the valve will return the whole device to its normal position. If the spring U should be found insufficient to return the device to its normal position, or if the construction of the valve should be of such a nature as to prevent its use, then springs could be mounted upon the rocker-shaft G or under the push-pin O, or on any other desired portion of the device; but this is not considered

necessary, as one located as shown has been found sufficient.

When it is desired to so lock the device as to render it inoperative, the push-pin O is lifted up out of engagement with the depression M in the arm K' of the bell-crank lever K, and the end T of the push-pin is inserted in the longitudinal slot N, as shown in Fig. 5, thus of itself preventing the operation of the device. When it is desired to use the device, the push-pin can be again placed in engagement with the bell-crank lever by inserting any suitable tool, or the finger in the cuts *ff* in the enlarged head of the push-pin, (see Fig. 3,) raising it from its seat, turning it around sufficiently to present the end T to the depression M, and then dropping it into the same. The spring U also assists the push-pin in keeping the device inoperative, and springs can be located, as before stated, to take the place or assist the spring U if it is found not sufficient. It will thus be seen that this forms a convenient and handy means for rendering the device inoperative and bringing it back into operation again.

One of the main advantages derived from our device is that the entire sand-box can be placed within the car, and the upper end of the rocker-arm H is left open, as shown at *e*, Fig. 2, so that the entire sand-box, valve, &c., except, probably, the discharge-tube, can be removed without having to go under the car to do it; also, in placing the valve-casing within the car the danger of its getting broken, frozen, or clogged is entirely done away with, and the number of parts liable to harm from the same causes is reduced.

If it is desired to connect the sand box or boxes at both ends with one treadle mechanism, all that is necessary would be to continue on the connecting-rod J to another shaft, as G, and then proceed as before described.

What I claim, and desire to secure by Letters Patent, is—

1. The combination of a series of sand-boxes having horizontal valves, said valve and box being located above the car-floor, with a vibrating shaft having rocker-arms extending through the car-floor and engaging with the said valve, and a treadle mechanism, the said shaft and treadle being connected, substantially as described.

2. The sand-box C, provided with a horizontal valve D', located above the car-floor, in combination with the vibrating shaft G, arm H, connecting the said shaft and valve, arm I and treadle being connected, substantially as described.

3. In a treadle mechanism, the combination of a push-pin reduced in diameter at one end, and a bell-crank lever provided with a transverse depression and a longitudinal slot in one of its arms for interchangeable engagement with the push-pin, substantially as described.

4. The combination, with a sand-box, of a vibrating shaft operatively connected there-

to, a push-pin reduced in diameter at one end,
and a bell-crank lever provided with a trans-
verse depression and a longitudinal slot in
one of its arms, the said lever and shaft being
5 connected, substantially as set forth.

5. The combination, with a sand-hopper, of
a valve located beneath the hopper, a spring
connected directly to the valve, a vibrating
shaft operatively connected thereto, a push-
10 pin reduced in diameter at one end, and a
bell-crank lever provided with a transverse

depression and a longitudinal slot in one of
its arms, the said lever and shaft being oper-
atively connected, substantially as set forth.

Signed at the city, county, and State of New 15
York this 15th day of December, 1888.

HENRY MÜLLER, JR.
MARI A. CUMING.

Witnesses:

JOSEPH L. LEVY,
GEORGE W. BORCHERS.