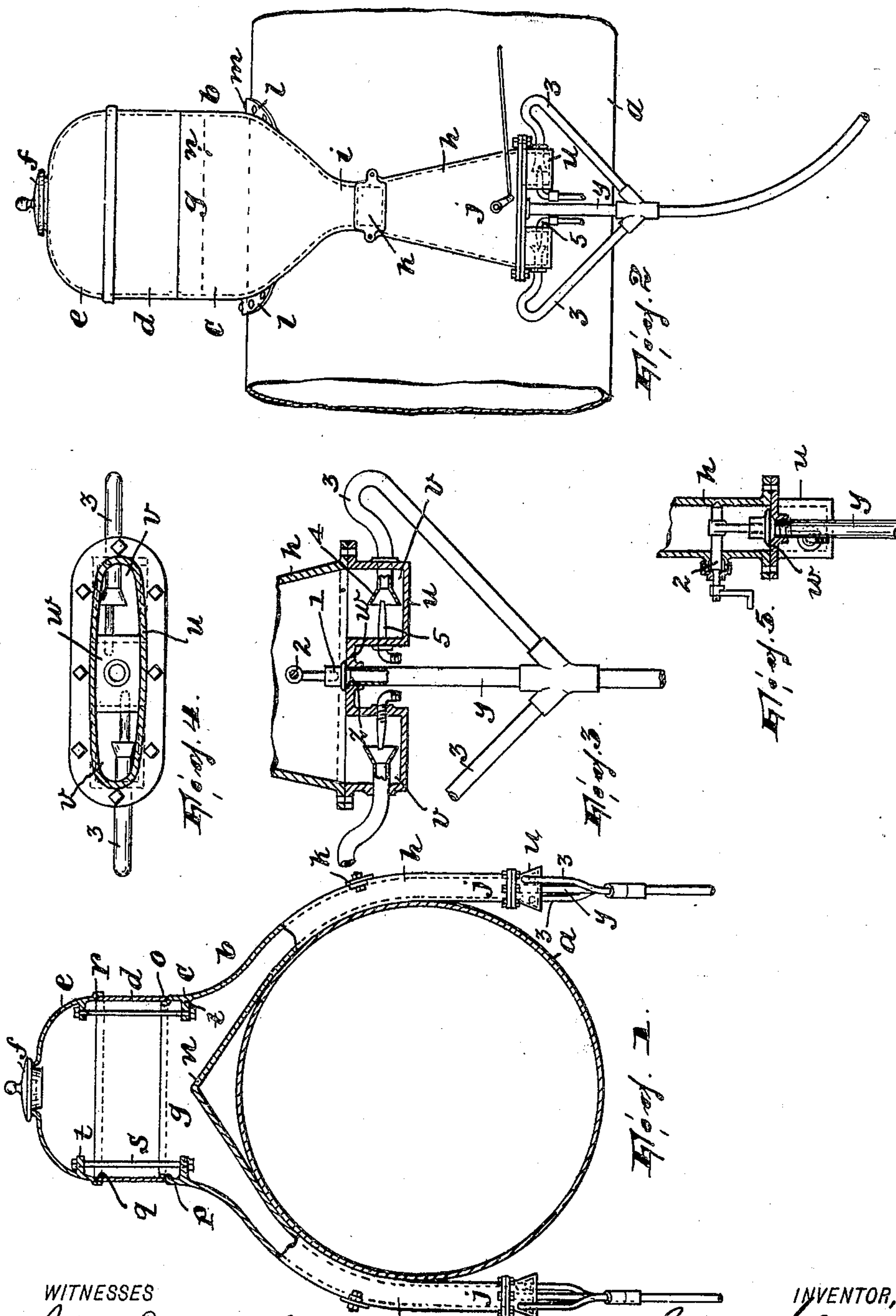


S. H. DUNNING.
LOCOMOTIVE SANDING APPARATUS.
APPLICATION FILED NOV. 30, 1907.

922,109.

Patented May 18, 1909.



WITNESSES

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UNITED STATES PATENT OFFICE

SAMUEL H. DUNNING, OF PATERSON, NEW JERSEY.

LOCOMOTIVE SANDING APPARATUS.

No. 922,109.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed November 30, 1907. Serial No. 404,564.

To all whom it may concern:

Be it known that I, SAMUEL H. DUNNING, a citizen of the United States, residing in Paterson, Passaic county, New Jersey, have invented a certain new and useful Improvement in Locomotive Sanding Apparatus; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to letters of reference marked thereon, which form a part of this specification.

My invention relates to sanding apparatus for locomotives and it has for its object to provide an apparatus of this nature which shall be substantially proof against the sand clogging therein in such a way as to prevent its flowing freely at any time when occasion to use it arises and which shall also be simple in construction and capable of being readily adapted to any locomotive without materially altering the design or construction of the locomotive itself.

The sanding apparatus commonly in use requires constant attention in order to keep it in proper working condition, principally because the conduits whereby the sand is led from the box or dome are not only of small diameter but of uniform dimension from end to end, so that, even though the sand be perfectly dry, which is a more or less unusual condition, if it is not used for some time it packs under the vibration of the engine and thus clogs; such apparatus is furthermore so constructed that when it is necessary to have access to its interior for cleaning or repairs, this is rendered extremely difficult, so that much time and labor are expended on work which is entirely collateral to that primarily requiring attention.

I have had the disadvantages of the present sanding apparatus in mind in devising my improved sanding apparatus herein set forth and which I have shown in the accompanying drawings in five different views, Figure 1 being a view in front elevation, partly in section, the boiler of a locomotive being shown in vertical section; Fig. 2 a view in side elevation of the improved sanding apparatus; Fig. 3 a vertical sectional view of the lower portion of one of the legs *h* of the apparatus; and, Figs. 4 and 5 views illustrating details.

The boiler of the locomotive is shown at *a*;

arranged on the boiler and straddling the same is a bifurcated box or casing *b* which may be described in detail as follows: Said box or casing comprises three sections *c*, *d* and *e*, the section *c* being the bifurcated portion of the box or casing, the section *d* its cylindrical or body portion, and the section *e* its dome or cover portion, the latter having the usual removable cap *f* which may be removed for the purpose of permitting the box or casing to be filled. The section *c* is substantially cylindrical in its top part *g* but in its bottom part it is formed as two tubular legs *h* each of which has preferably an elliptical cross-section and first tapers down to its smallest diameter, as at *i*, and then expands, giving its lower portion *j* a flaring form; each leg may be provided with a removable cap *k* which permits access to its interior for the purpose of freeing it of clogging sand. The section *c* has the flanges *l* which are so constructed that when the section *c* is arranged in proper position on the boiler, straddling the same, said flanges will lie squarely at all points against the top of the boiler and will serve as a means for riveting the section to the boiler; the rivets are indicated at *m*. The inside of the top part *g* of section *c* is formed with a longitudinal ridge *n* whose sides incline downwardly and merge into the inside surfaces of the legs *h*; the purpose of this is to avoid the production of a horizontal surface on which the sand might remain when otherwise free to descend. The section *d* has its lower edge *o* fitting into a rabbet *p* formed in the top of section *c*; similarly, said section has its upper edge *q* fitting into a rabbet *r* formed in the top section *e*. The three sections may be conveniently secured together by bolts *s* engaging the lugs *t* in the sections *c* and *e*.

To the bottom of each leg of the section *c* is bolted a valve casing *u*; the bottom wall of each leg opens into this valve casing which comprises two compartments *v* separated by a horizontal wall *w* into which is tapped the pipe *y* which leads down to and discharges on the track in proper relation to one of the driving wheels. The port *z* formed at the upper end of this pipe is controlled by the manually operated slide-valve 1 which moves on the wall *w* when actuated from the cab through its bell-crank lever 2, fulcrumed in leg *h* of the casing *b*. This latter mechanism forms what is commonly known as the "hand sander." From the opposite walls of the

compartments *v* lead the pipes 3 which connect with pipe *y* and into whose flaring upper ends 4 discharge the ejector-nozzles 5 which are suitably connected with the air-supply, this mechanism forming what is known as a "pneumatic sander."

The operation of the apparatus will be clearly understood by those familiar with the art without description. It may be remarked, however, that the improved sander distinguishes from those at present in use and possesses certain advantages over them which may be set forth as follows: Owing to the internal construction of the box or casing, the sand will stand free at all times from the highest level thereof clear to the valve casing; it cannot "pile" in the portion of the casing which is directly over the boiler because of the ridge *n*, and the hour-glass formation of each of its legs, taken with the fact that they are of ample inside proportions, will prevent the sand from clogging therein so long as it is free beneath them. The only parts of the mechanism which are likely to clog are those which depend from the valve casing, and the valve casing being readily detachable from the legs of the casing it is only required to remove the valve casing in order to clear the pipes or such other parts as may become clogged.

Having thus fully described my invention,

what I claim as new and desire to secure by Letters Patent is:

1. In a sanding apparatus, the combination of a hollow casing having outlets, the portions thereof having said outlets being tapered partway downwardly and being then formed flaring, substantially as described.

2. In a sanding apparatus, the combination of a hollow casing having outlets, the portions thereof having said outlets being tapered partway downwardly and being then formed flaring, and being elongated in the longitudinal cross section thereof, substantially as described.

3. The combination of a locomotive boiler, and a sanding apparatus comprising a hollow casing bifurcated in its lower portion and straddling the boiler, said bifurcated portion of the casing having its lower extremities tapering partway downwardly and then formed flaring and formed with outlets and means for controlling the flow of the sand from said outlets, substantially as described.

In testimony, that I claim the foregoing, I have hereunto set my hand this 7th day of November, 1907.

SAMUEL H. DUNNING.

Witnesses:

WM. D. BELL,
JOHN W. STEWARD.