W. B. SHULL.

PNEUMATIC RAIL SANDER.

APPLICATION FILED JAN. 6, 1911.

990,016. Patented Apr. 18, 1911.

Fig. 1.

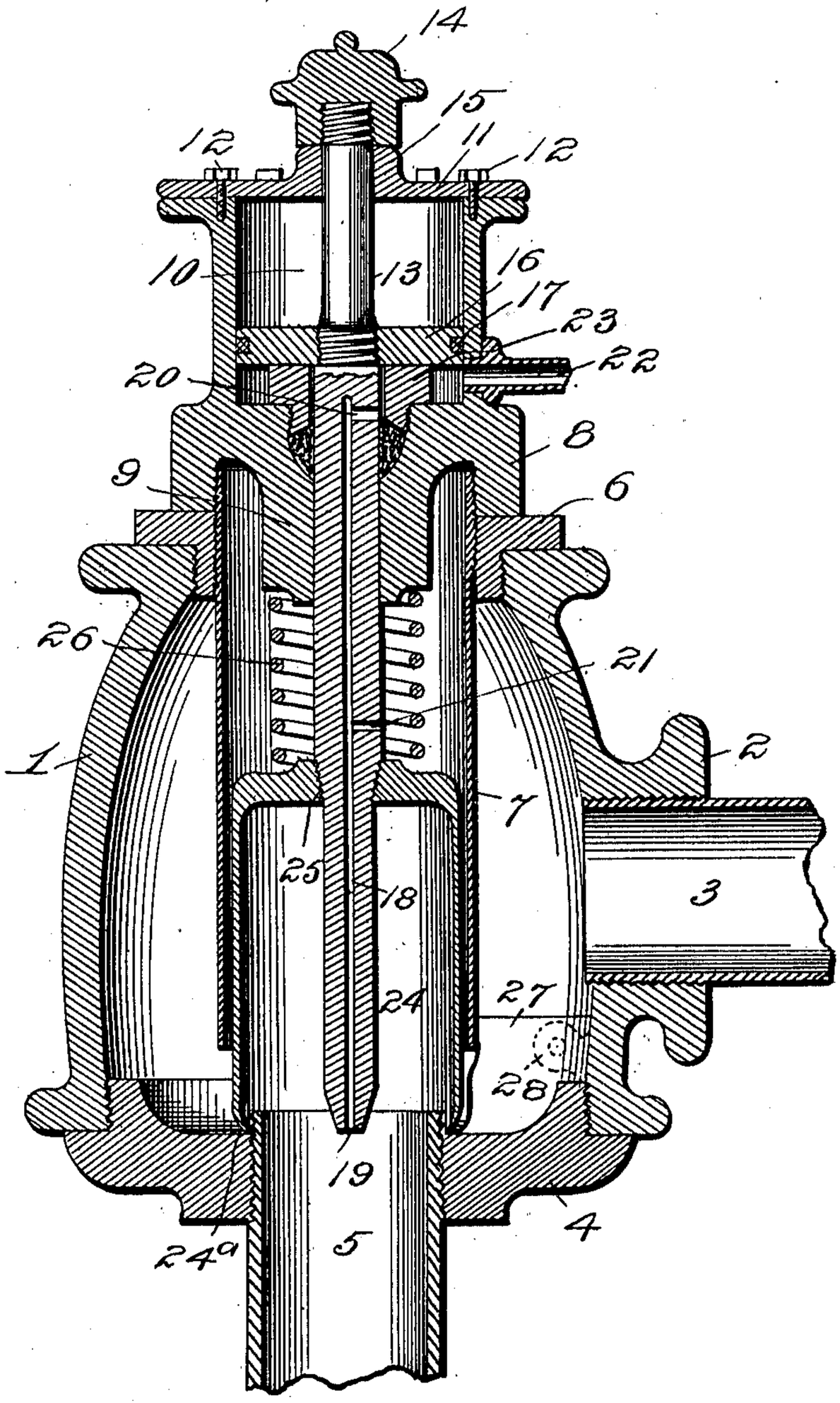

Fig. 2.

Witnesses

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WILLIAM B. SHULL, OF GOODLAND, KANSAS.

PNEUMATIC RAIL-SANDER.

990,016. Specification of Letters Patent. Patented Apr. 18, 1911.

Application filed January 6, 1911. Serial No. 601,077.

To all whom it may concern:

Be it known that I, WILLIAM B. SHULL, a citizen of the United States, residing at Goodland, in the county of Sherman and State of Kansas, have invented certain new and useful Improvements in Pneumatic Rail-Sanders, of which the following is a specification.

This invention relates to pneumatic rail sanders and one of the principal objects of the invention is to provide simple, reliable and efficient means for depositing sand upon the rails immediately in front of the wheels of a locomotive or motor car by positive means.

Another object of the invention is to provide a pneumatic sander for depositing sand upon the rails in front of the wheels and to provide means for blowing the sand out through a pipe which leads to the rails.

The rail sanding devices in common use deposit the sand by gravity upon the rails and owing to the vortex created by the motion of the train the sand is blown from the tracks before the wheels pass over it. This objection is overcome by a pneumatic sander which will blow the sand upon the tracks immediately in front of the wheels.

The objects and advantages above referred to may be attained by means of the construction illustrated in the accompanying drawing, in which:

Figure 1 is a central vertical section taken through a pneumatic sander made in accordance with my invention. Fig. 2 is a detailed perspective view of the deflector made for the sand.

Referring to the drawing, the numeral 1 designates a hollow casing provided with an internally threaded boss 2. Fitted in the threaded opening of the boss 2 is a sand pipe 3 which leads from the sand box and connects with the interior of the casing 1. Fitted to the lower end of the casing 1 is a threaded cap 4, said cap having a centrally threaded opening in which is fitted a discharge pipe 5 for the sand, said pipe 5 designed to be located in alinement with the rail immediately in front of one of the wheels of a locomotive or motor car. Fitted in the top of the casing 1 is a threaded nut 6, said nut having a central opening therein to which is fitted a stationary guard tube 7, the lower end of which extends to a point near the cap 4 at the bottom of the casing 1. Fitted to the threaded upper end of the guard tube 7 is a threaded member 8 having an internally extended guide projection 9. The guard tube 7 is also connected to the nut 6. The member 8 is formed integrally with an air cylinder 10 provided with a cylinder head 11 secured thereto by means of lag screws or bolts 12.

Extending through the air cylinder 10 is a piston rod or stem 13 and fitted to the upper end of this rod is a cap nut 14, the lower end of which is designed to rest upon a boss 15 formed on the cylinder head 11. Connected to the piston rod or stem 13 is a piston head 16 fitted within the cylinder 10 and provided with packing 17. An air duct 18 is formed centrally in the lower end of the stem 13, said air duct having a discharge opening 19 in the lower end thereof. An inlet air port 20 connects with the air duct 18 in the stem 13 and a bleed port 21 communicates with the air duct 18 at a point below the inlet port 20. An air inlet pipe 22 is fitted to the cylinder 10 at a point near the bottom thereof, underneath the piston head 16, said air inlet pipe leading to a compressed air tank or other compressed air supply. A stuffing box 23 is fitted to the lower end of the cylinder 10 and the stem 13 extends through the stuffing box. A hollow cuplike valve 24 is secured by a threaded connection 25 to the stem 13 near its lower end. The valve 24 is designed to normally rest upon the upper surface of the cap 4 and is bent inwardly at its lower edge as at 24ª, said valve being normally held closed by means of a spring bearing upon its upper end and seated against the lower end of the guide projection 9.

A deflector for the sand is shown in Fig. 2, and consists of diverging portions 27 provided with a lug 28 secured to the casing 1 immediately under the sand pipe 3 to deflect the sand as it is discharged into the casing 1, and to provide means for depositing it around the discharge pipe 5.

The operation of my invention may be briefly described as follows: When compressed air is forced through the pipe 22 underneath the piston head 16, said head rises in the cylinder 10 against the tension of the spring 26 until the air port 20 is within the cylinder 10 at which time the air is blown through said port 20 into the duct 18 and out through the discharge opening 19 to blow the sand which has entered the casing 1 through the pipe 3 on to the surface

of the rails. When the compressed air is cut off the spring 26 will force the valve 24 downward and thus prevent the feeding of the sand to the track. Whenever it is found desirable the cap nut 14 may be grasped to raise the cylinder head 16 by hand.

From the foregoing it will be obvious that my invention provides positive means for depositing sand upon the rails and that the device is simple in construction, can be immediately brought into use by turning on the compressed air and can be instantly shut off when not required for use. Moreover, the device may be operated by hand for depositing sand whenever required upon the tracks.

I claim:

In a pneumatic rail sander, a casing provided with a sand inlet, a sand deflector in said casing below said inlet, said casing being provided with an outlet in close proximity to the sand deflector, an air cylinder connected to said casing, a piston in said air cylinder, a rod connected to said piston, said rod having a longitudinal air duct and a port connecting the air duct with the air cylinder when the piston is in raised position, said rod having an air port leading from said air duct to a point intermediate its inlet and outlet, a sand shell fixed upon said rod, a tube fixed in the casing closely surrounding the periphery of said shell to within a short distance from the open end of said shell, and a spring to return the piston and rod to its lowermost or normal position.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM B. SHULL.

Witnesses:

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K. W. LEONARD.