

J. M. COLEMAN.

SANDER.

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1,072,206.

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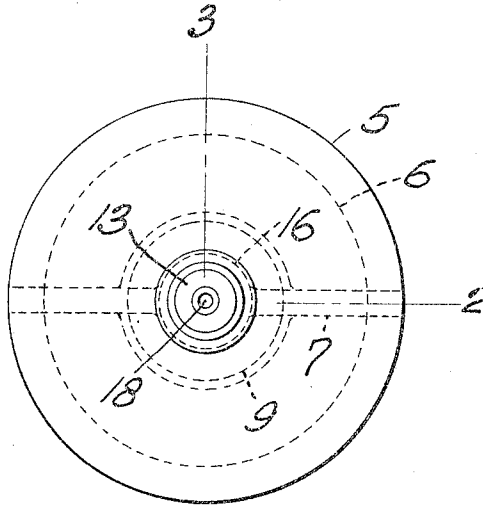


FIG. 1.

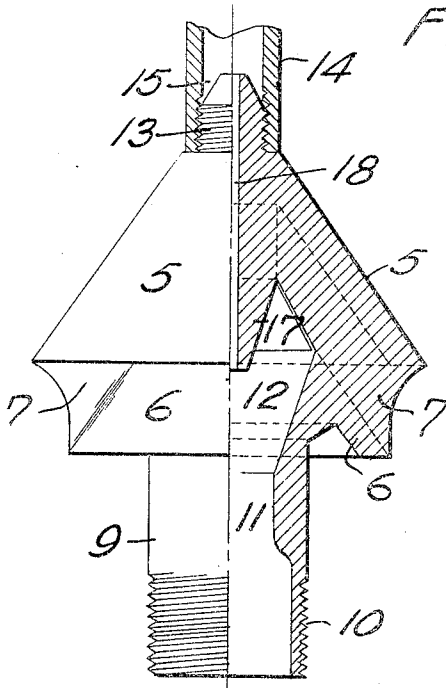


FIG. 2.

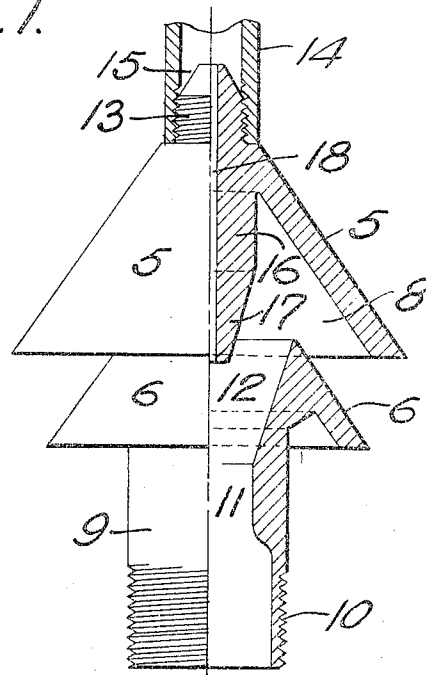


FIG. 3.

Witnesses

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SANDER.

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To all whom it may concern:

Be it known that I, JAMES M. COLEMAN, of the city of Montreal, in the Province of Quebec and Dominion of Canada, have invented certain new and useful Improvements in Sanders, of which the following is a full, clear, and exact description.

This invention relates to improvements in means for discharging finely divided material such as sand, and the principal application of the device is to the sand boxes of locomotives, street cars and the like.

A further object is to provide a sand discharging device of great simplicity and efficiency, and one which will not become clogged with pebbles or other objects which may be found in the sand.

The device consists essentially of a pair of substantially conical hoods, the lower of which is provided with a large central discharge passage. The upper hood is provided with the nozzle projecting into the discharge passage.

In the drawings which illustrate the invention:—Figure 1 is a plan view. Fig. 2 shows on the left a front elevation and on the right a section on the line 2, Fig. 1. Fig. 3 shows on the left a side elevation and on the right a section on the line 3, Fig. 1.

Referring more particularly to the drawings, 5 and 6 designate hollow conical hoods of which 6 is the smaller, and is arranged below and partially within the upper hood 5. These two hoods are preferably cast, and when so made are connected by a pair of radial webs 7, which hold them a certain distance apart, thus forming a substantially annular passage 8. The lower hood 6 is provided with a large central supporting neck 9 which is threaded at 10 and is provided with a large central passage 11, the upper portion 12 of which is flared. The upper hood is provided at the apex with a threaded nipple 13 to which a compressed air pipe 14 may be screwed. Above the threads this nipple is substantially conical in form so that an annular recess 15 is formed between the nipple and pipe. Within the hood 5 is a nozzle 16 tapered at its lower end as shown at 17 and projecting a short distance into the flared mouth 12 of the discharge passage 11. A small air passage 18 is formed through from the end of the nipple to the end of the nozzle.

In use, the device is placed in a sand box, the neck 9 passing through the bottom of

the box and being secured to a suitable discharge pipe by means of the threads 10. When the box is filled with sand, the force of gravity acting on the sand above forces the sand part way up in the annular passage 8. When air is turned on through the pipe 14, it passes through the reduced aperture 18 with very high velocity and creates a partial vacuum between the hoods, which draws the sand in through the passage 8 into the passage 11 through which it is discharged by gravity and by the air blast. The area of the passage 8 is so much greater than the area of the passage 11 that a considerable portion of it may be closed with pebbles or the like without interfering with the efficiency of the device. The width of the passage 8 is considerably less than the diameter of the passage 11, so that nothing can enter between the hoods which would clog the passage 11. The annular space 15 around the nipple forms a pocket for any scale which may break from the inside of the pipe 14, and thus prevents blocking of the air passage 18.

The device may also be used by applying a suction device to the passage 11. In this case, however, a separator would need to be provided for the sand and air to prevent sand being drawn into the suction device.

Having thus described my invention, what I claim is:—

1. A device of the character described comprising a pair of integral conical hoods spaced a short distance apart, a discharge passage through the center of one hood, and a blast nozzle attached to the other hood projecting a short distance into said passage.

2. A device of the character described comprising a pair of conical hoods arranged one within the other and spaced apart whereby an annular passage is formed between the two hoods, a central discharge passage through the inner hood communicating with the annular passage, and a nozzle secured to the other hood and projecting a short distance into said discharge passage whereby a fluid jet of high velocity issuing from the nozzle will create a vacuum in the discharge and annular passages.

3. A device of the character described, comprising a pair of substantially conical hoods arranged co-axially one within the other and spaced apart to form an annular passage, a neck projecting from within the

inner hood having a discharge passage therethrough flared at its upper end and communicating with the annular passage, a nozzle secured within the outer hood having its lower end tapered and projecting a short distance into the flared mouth of the discharge passage, and webs holding said hoods in fixed relation to one another.

4. A device of the character described comprising a pair of substantially conical hoods arranged one within the other and spaced apart to form an annular passage, a neck secured to the inner hood having a discharge passage therethrough communicating with the annular passage, a nozzle within the outer hood projecting a short distance into the discharge passage, and a threaded

nipple at the apex of the outer hood forming a continuation of the nozzle, said nipple having its end tapered whereby an annular scale pocket will be formed between the nipple and a pipe connected thereto.

5. A device of the character described, comprising a pair of hoods spaced apart, a discharge passage through one of said hoods communicating with the space between the hoods and a blast nozzle arranged to direct a fluid jet through said discharge passage.

In witness whereof I have hereunto set my hand in the presence of two witnesses.

JAMES M. COLEMAN.

Witnesses:

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