

K. SPITZER.
 SUCTION DEVICE FOR DUST LADEN AIR.
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1,019,548.

Patented Mar. 5, 1912.

Fig. 1.

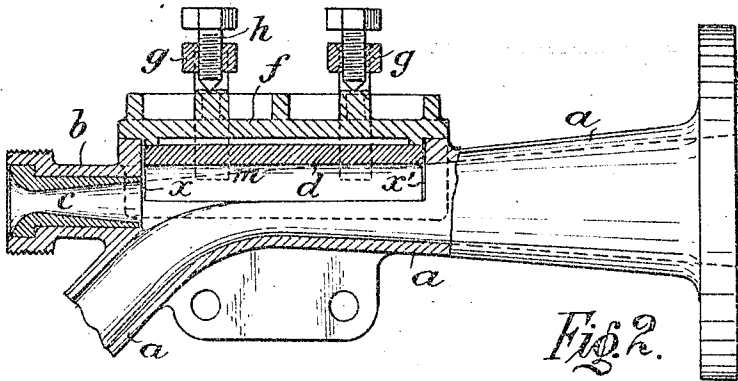
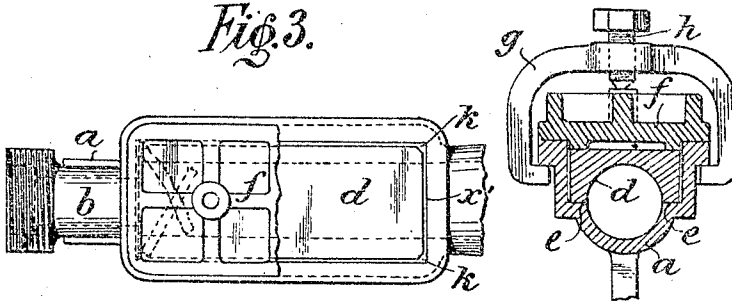


Fig. 2.

Fig. 3.



Witnesses

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UNITED STATES PATENT OFFICE.

KARL SPITZER, OF VIENNA, AUSTRIA-HUNGARY.

SUCTION DEVICE FOR DUST-LADEN AIR.

1,019,548.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, KARL SPITZER, a subject of the Emperor of Austria-Hungary, residing at Vienna, Empire of Austria-Hungary, have invented certain new and useful Improvements in Suction Devices for Dust-Laden Air; 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.

This invention relates to dust suction apparatus of that class in which a jet of steam or fluid under pressure is blown into an elbow-shaped tube communicating at one end with the dust collecting chamber and connected at its other end with the mouth piece sucking up the dust. In apparatus of this class the current of air carrying with it dust and other impurities strikes against the wall of the tube a short distance in front of the nozzle from which the jet of steam or fluid under pressure is blown. This causes an excessive wear of the elbow tube at the said place so that this tube is so injured at that point, that it must be replaced by a new one. Such exchange, however, is expensive. This inconvenience is avoided according to the present invention by removing that part of the elbow tube against which the dust strikes and replacing it by a readily exchangeable piece forming part of the wall of the tube, such piece being so constructed that it does not interfere with the proper movement of the air and that there can be no leakage at this part of the elbow tube. For protecting this part of the elbow tube against too rapid wear the elbow tube is enlarged at that part so that there is a sufficient distance between the jet blown out from the nozzle and the wall of the elbow tube to secure the formation of an air cushion concentric with the jet of steam or fluid under pressure which cushion prevents the particles of dust and other impurities from striking violently against the said piece.

In the annexed drawing Figure 1 is a longitudinal section, Fig. 2 is a transverse section and Fig. 3 a plan of an apparatus embodying this invention.

a is the elbow tube, *b* is a branch of the tube *a* for receiving the nozzle *c*. The branch *b* is cut away at its upper side so as to serve as a seat *e* for the piece *d* of the wall of the elbow tube such portion being of

rectangular shape in plan view. The piece *d* is held in position on the seat *e* by means of a cover *f*, yokes *g* and screws *h*. For facilitating the removal of the piece it fits the branch *b* with some play. For tightly closing the joints at the ends of the piece packing material such as asbestos cords is placed at *k* into the corners of the opening in the branch. For this purpose the upright edges of the piece *b* are beveled. The piece *b* is then brought into position and the ends of the packing cord projecting above the same are laid on its top and are compressed on screwing down the cover. Owing to this arrangement of the packing material the piece *b* may be readily removed and replaced by a fresh one. Nevertheless it so tightly fits the elbow tube that no suction can take place through the front joint *x'* to the rear joint *x* by the action of the steam jet blown out from the nozzle *c*.

For reducing the detrimental effect of the dust on that portion of the elbow tube which would be struck by the dust owing to the curvature of the tube the elbow tube is enlarged at this part so that the space *m* already mentioned is formed which is also subject to the suction effect of the jet issuing from the nozzle *c*. This space is therefore constantly filled with air which surrounds the issuing jet and thereby protects the part of the elbow tube against the violent action of the dust and other impurities contained in the current of air forced through the elbow tube, the elbow tube by the suction effect of the jet issuing from the nozzle *c*.

Claims:

1. In a suction device for dust laden air the combination of an elbow tube, a nozzle for fluid under pressure having its issuing end in the wall of the elbow tube and being substantially coaxial with the issuing end of the elbow tube, an opening in the elbow tube in front of such nozzle, a piece loosely fitting such opening and means for holding such piece in position on the elbow tube, substantially as and for the purpose described.

2. In suction device for dust laden air the combination of an elbow tube, a nozzle for fluid under pressure having its issuing end in the wall of the elbow tube and being substantially coaxial with the issuing end of the elbow tube, a rectangular opening in the elbow tube in front of such nozzle, a rectangular piece loosely fitting such open-

ing, packing cords inserted into the corners of the said opening and having their ends laid on top of the said piece, a cover and means for pressing the cover against the top of the said piece, substantially as and for the purpose described.

3. In suction device for dust laden air the combination of an elbow tube a nozzle for fluid under pressure having its issuing end in the wall of the elbow tube and being substantially coaxial with the issuing end of the elbow tube, a rectangular opening in the elbow tube in front of such nozzle, a rectangular piece loosely fitting such opening, the bottom side of such rectangular piece being provided with a semicylindrical

recess substantially coaxial with the nozzle, the radius of such recess being greater than the radius of the issuing end of the nozzle and the rear end of the said piece being in substantially the same plane as the issuing end of the nozzle and means for holding such piece in position on the elbow tube, substantially as and for the purpose described.

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

KARL SPITZER.

Witnesses:

ARTHUR GAUMANN,
AUGUST FUGGER.