A. L. FRAME.

VACUUM CLEANER NOZZLE.

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1,192,408.

Patented July 25, 1916.

Fig. 1.

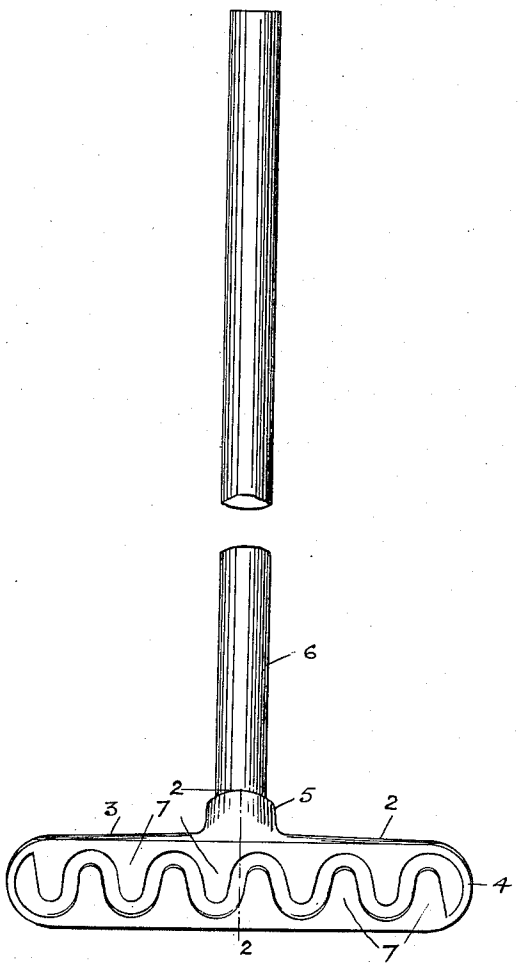


Fig. 2.

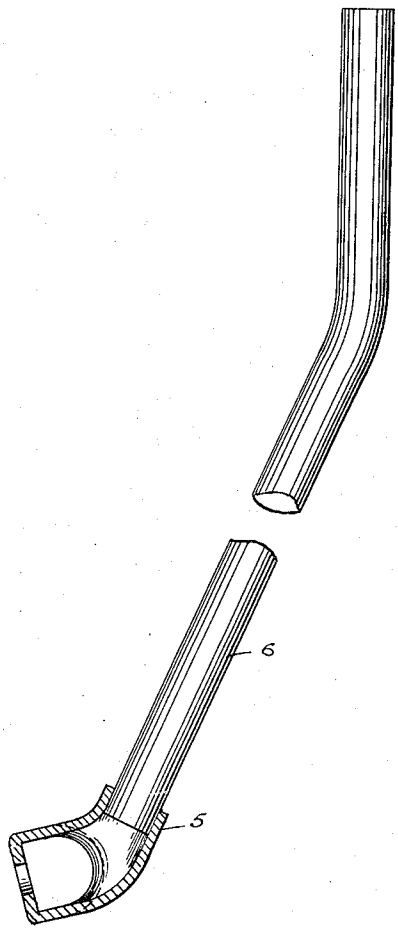
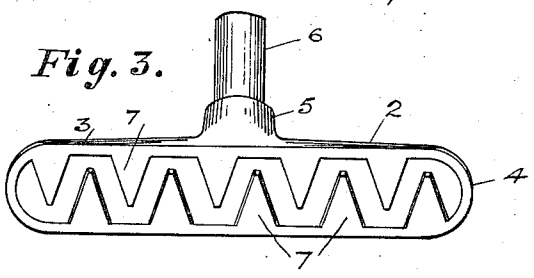


Fig. 3.



Witnesses:

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UNITED STATES PATENT OFFICE.

ABRAHAM L. FRAME, OF READING, PENNSYLVANIA.

VACUUM-CLEANER NOZZLE.

1,192,408. Specification of Letters Patent. Patented July 25, 1916.

Application filed December 5, 1912. Serial No. 735,015.

To all whom it may concern:

Be it known that I, ABRAHAM L. FRAME, a citizen of the United States, residing at Reading, in the county of Berks and State of Pennsylvania, have invented certain new and useful Improvements in Vacuum-Cleaner Nozzles, of which the following is a specification.

This invention relates to nozzles for vacuum cleaning apparatus, the object of the invention being to provide an improved nozzle, simple in its construction, durable and efficient in use.

In the drawings accompanying and forming part of this specification Figure 1 is a bottom plan view of this improved nozzle; Fig. 2 is a cross-sectional view thereof taken in line 2—2, Fig. 1; and Fig. 3 is a bottom plan view of a somewhat modified form of the structure shown in Fig. 1.

Similar characters of reference indicate corresponding parts throughout the figures of the drawings.

The present improved nozzle comprises a chambered head 2 having a curved top wall 3 and end walls 4, and is preferably about 1¼″ in width, and this chambered head is provided with a projecting nipple 5 for the reception of the usual handle 6. The opposed side walls at the bottom of the nozzle are provided with a series of inwardly extending tapered projections 7, preferably arranged in alternation, and forming an irregular opening throughout the length of the nozzle head, that of Fig. 1 being of a sinuous form, while that of Fig. 3 is of angular form.

In the form shown in Fig. 1 the alternately extending projections are formed with curved sides, while those of the form shown in Fig. 3 are formed with straight sides. In practice these alternately extending tapered projections extend from the side walls at the bottom of the head, preferably a considerable distance beyond the median line of the head, so that the portion of the opening adjacent the terminus of each projection is adjacent to one of the side walls of the head.

In practice the nozzles of the structure shown have proven very efficient in that they provide a very much increased area of opening over what is obtained in a nozzle having simply a straight slot, and also by reason of the fact that the opening is a continuous one in the direction of its length. The nozzle has proven efficient for the removal of threads and other debris of this general character.

From the foregoing it will be observed that the chambered head 2 has its irregular or sinuous formed opening located in a bottom plate and that, as hereinbefore stated, by providing an opening of a sinuous form a very much increased area of opening is obtained over that which would be obtained by simply providing a straight slot. Moreover, as the opening is a continuous one there is no interruption of the current of air from one end of the nozzle to the other.

I claim as my invention:—

1. A vacuum cleaner nozzle comprising a chambered head having a pair of side walls and a bottom plate for contact with the surface to be cleaned, said bottom plate provided with an uninterrupted serpentine inlet opening lengthwise of said head, whereby the nozzle is provided with an uninterrupted inlet opening of considerably greater length than the length of the nozzle.

2. A vacuum cleaner nozzle comprising a chambered head having a pair of side walls and a bottom plate for contact with the surface to be cleaned, said bottom plate provided with an uninterrupted serpentine inlet opening lengthwise of said head, whereby the nozzle is provided with an uninterrupted inlet opening of considerably greater length than the length of the nozzle, said opening having substantially uniform width throughout substantially its entire length.

3. A vacuum cleaner nozzle comprising a chambered head having a pair of side walls and a bottom plate for contact with the surface to be cleaned, said bottom plate provided with an uninterrupted zigzag opening lengthwise of said head with the diagonal portions thereof extending substantially from side to side of such head, whereby the nozzle is provided with an uninterrupted inlet opening of considerably greater length than the length of the nozzle.

4. A vacuum cleaner nozzle comprising a chambered head having a pair of side walls and a bottom plate for contact with the surface to be cleaned, said bottom plate provided with an uninterrupted zigzag opening lengthwise of said head with the diagonal portions thereof extending substantially from side to side of such head, whereby the nozzle is provided with an uninterrupted inlet opening of considerably greater length

than the length of the nozzle, said opening being of substantially uniform width throughout substantially its entire length.

5. A vacuum cleaner nozzle comprising a chambered head having a bottom plate for contact with the surface to be cleaned, said bottom plate having an uninterrupted inlet opening from one end of the nozzle to the other extending alternately in diagonally opposite directions.

6. A vacuum cleaner nozzle comprising a chambered head having a bottom plate for contact with the surface to be cleaned, said bottom plate having an uninterrupted inlet opening from one end of the nozzle to the other alternately in diagonally opposite directions, the diagonal portions of said inlet opening being of such length that the length of the inlet opening is substantially twice the length of the nozzle.

7. A vacuum cleaner nozzle comprising a chambered head having a bottom plate for contact with the surface to be cleaned, said bottom plate having an uninterrupted inlet opening from one end of the nozzle to the other alternately in diagonally opposite directions, the diagonal portions of said inlet opening being of such length that the length of the inlet opening is substantially twice the length of the nozzle, said opening having substantially uniform width throughout substantially its entire length.

8. A vacuum cleaner nozzle comprising a chambered head having a pair of side walls and a bottom plate for contact with the surface to be cleaned, said bottom plate provided with a series of alternately located overlapping projections and an uninterrupted sinuous inlet opening lengthwise of said head, whereby the nozzle is provided with an uninterrupted inlet opening of considerably greater length than the length of the nozzle.

9. A vacuum cleaner nozzle comprising a chambered head having a bottom plate for contact with the surface to be cleaned, said bottom plate having a series of alternately located overlapping projections and an uninterrupted inlet opening from one end of the nozzle to the other alternately in diagonally opposite directions.

10. A vacuum cleaner nozzle comprising a chambered head having a bottom plate for contact with the surface to be cleaned, said bottom plate having a series of alternately located overlapping projections and an uninterrupted inlet opening from one end of the nozzle to the other alternately in diagonally opposite directions, the diagonal portions of said inlet opening being of such length that the length of the inlet opening is substantially twice the length of the nozzle, said opening having substantially uniform width throughout substantially its entire length.

11. A vacuum cleaner nozzle having at its underside along its length a series of alternating projections forming an irregular inlet slot.

12. A vacuum cleaner nozzle having at its underside along its length a series of alternating tapered projections forming an irregular inlet slot.

13. A vacuum cleaner nozzle having at its underside along its length a series of alternating projections forming an irregular inlet slot, each of said projections extending beyond the median line of such nozzle.

14. A vacuum cleaner nozzle having at its underside along its length a series of alternating tapered projections forming an irregular inlet slot, each of such projections extending beyond the median line of such nozzle.

15. A vacuum cleaner nozzle having at its underside along its length a series of alternating projections forming an irregular inlet slot, each of said projections extending beyond the median line of such nozzle and said inlet slot having increased length as compared with the length of the nozzle.

16. A vacuum cleaner nozzle having at its underside along its length a series of alternating tapered projections forming an irregular inlet slot, each of such projections extending beyond the median line of such nozzle and said inlet slot having increased length as compared with the length of the nozzle.

17. A vacuum cleaner nozzle having at its underside along its length a series of alternating tapered projections forming an irregular inlet slot, each of such projections extending beyond the median line of such nozzle and said inlet slot having increased length as compared with the length of the nozzle and also having substantially uniform width.

Signed at Reading, Pennsylvania, this 30th day of November, A. D. 1912.

ABRAHAM L. FRAME.

Witnesses:

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