

E. F. KELLY.
SMOKE RING BLOWER.
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1,013,296.

Patented Jan. 2, 1912.

Fig. 1.

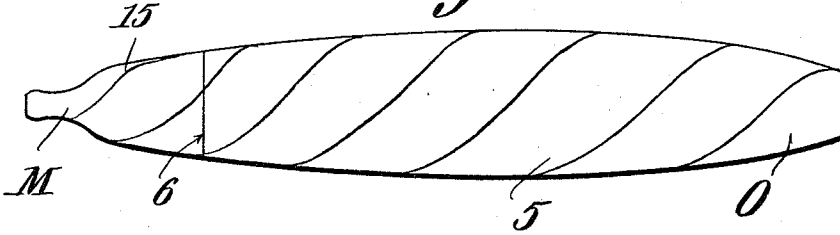


Fig. 2.

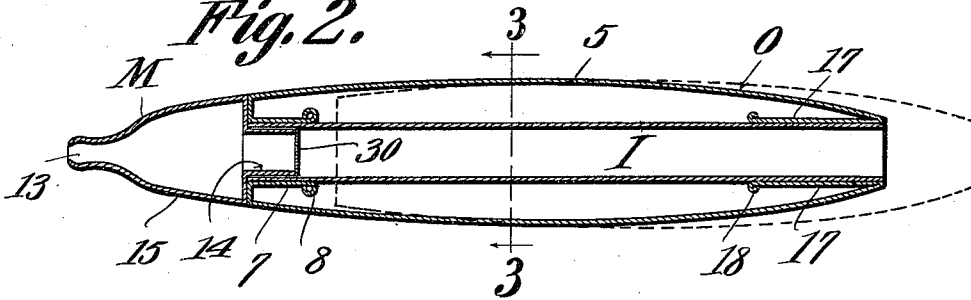


Fig. 3.

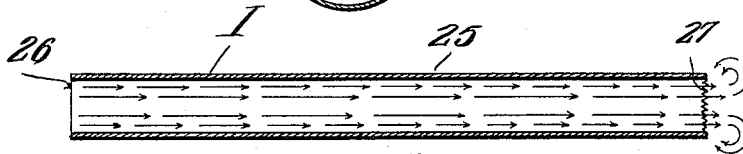
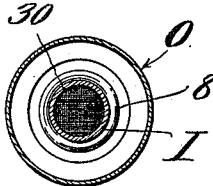


Fig. 4.

Witnesses

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SMOKE-RING BLOWER.

1,013,296.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD F. KELLY, a citizen of the United States, residing at Cairo, in the county of Alexander and State of Illinois, have invented a new and useful Smoke-Ring Blower, of which the following is a specification.

This invention relates to toys of that character adapted for the blowing of rings of smoke, and the object of the same is the production of such rings in a scientific manner.

To this end the invention consists in an article which is telescopically adjustable in its length and which is adapted for use in connection with a diffuser, which latter together with the possibility of adjustment adapts the device for use by operators whose throats are differently formed and manipulated and with smoke of different densities, in apartments with more or less draft and under varying conditions of the atmosphere.

The following specification describes and claims my invention in its preferred form and with certain modifications, and in the drawings Figure 1 is a side elevation of this toy. Fig. 2 is a central longitudinal section thereof, showing the adjustment in dotted lines. Fig. 3 is a cross section on the line 3—3 of Fig. 1. Fig. 4 is a central longitudinal section of the barrel slightly modified at its outlet end.

The essential features of my invention include a barrel, herein illustrated as a thin round tube, having means on its interior at its discharge end for retarding the flow of smoke through the barrel, and a large and wide open inlet constituting an expansion chamber as described below.

The preferred features of my invention in connection with the essential features will now be described.

In the drawings, the letter O designates an outer member or shell, M is a mouth piece, and I is the inner member or barrel. Said outer member and mouth piece are here shown as exteriorly shaped to simulate the appearance of a cigar, the shell constituting most of the body thereof as indicated at 5, its inner end cut off flat as at 6 and turned inward if it be of metal, and the bore at this end being formed by an inwardly extending extension 7 which is truly cylindrical on its interior and whose inner ends may be beaded as at 8. Its outer end is by preference likewise turned inward into an

extension 17 beaded as at 18. The whole may be conveniently formed of thin metal, although it is quite within the spirit of my invention that the same may be molded. The mouth piece M is here shown as having a body 15 complementing the shape of the body 5 so as to simulate a cigar upon its exterior, cut off flat at its outer or larger end, and having projecting axially from the latter a large, tubular, cylindrical nipple 14 which is in direct line with the inlet end or mouth piece proper 13 of the mouth piece 10. When so formed, the exterior of the nipple is slightly smaller in circumference than the interior of the extension 7 at the inner end of the shell O. The outer extension 17 thereof should be quite long, and the inner extension may be equally long or may be as short as illustrated in Fig. 2.

The inner member or barrel I is by preference truly cylindrical interiorly and is preferably formed of light metal tubing of a length corresponding with that of the outer member and of an exterior circumference adapting it to fit closely but slidably within the extensions 7 and 17 of said outer member or shell. Its body 25 is straight and plain and rather long, its inner end 26 is cut off straight as shown in Fig. 4, and in the same view at 27 its outer end is shown as serrated or toothed. I consider it essential, however, that externally this barrel shall fit closely but slidably within the bore of the shell which bore is of course formed by its extensions, and that internally its inner end shall be of a size to fit rather closely around the nipple 14 at the outlet end of the mouth piece M. Between the inner face of the barrel and the outer face of the nipple are interposed the edges of a screen 30 which may well be a piece of coarse cheese cloth or extremely fine wire netting, and the body of this screen stands over the outer end of the nipple and forms what I call a "diffuser" whose use will appear below. If the device were of fine wire netting, it is clear that its edges would maintain it within the inlet end of the barrel without the presence of any nipple whatever, but it will be observed that at neither side of said diffuser is there any restriction of the axial passage through the toy.

The purpose of this toy is the production of a device by means of which rings of smoke can be blown by different users and in varying conditions, and no matter what the

smoke is. The action which takes place I describe minutely, as the result of long experiment and observation, although of course it can be stated theoretically only. As a toy or novelty, the fact that it simulates the shape of a cigar is but a matter of choice, and as intimated above the mouth piece might well be done away with entirely as far as the blowing of rings of smoke is concerned, although I consider the use of the diffuser essential especially if the mouth piece is done away with or if the barrel is short.

Assuming that the parts are assembled as shown in Fig. 2, the operator places his lips at the point 13 and gently blows a cloud of smoke into the device. The smoke enters the body of the mouth piece M rather warm and with some considerable volume, and ordinarily it enters in such way that quite strong currents are set up in it although usually the main draft generated by the throat contraction of the operator will be along the axis of the mouth piece and nipple which latter forms the true inlet of the barrel. The interior of this nipple may well be called the "expansion chamber" because, no matter what swirling motions or currents exist within the body of the mouth piece, I am convinced that within the nipple they practically disappear. It will be conceded that at a point more remote from the mouth of the operator the smoke becomes cooler, and my theory is that within the nipple the cooling smoke while condensing or contracting in the size of its units does expand in the size of its entire volume as it comes temporarily to rest therein against the diffuser 30. The object of the latter will now be apparent. Instead of the smoke being blown into and through the barrel along a line through the axis of the latter, it is blown into it along parallel lines extended from all the fine mesh holes through the diffuser as indicated by the arrows in Fig. 4, and hence the smoke passing along through the barrel consists of a large number of units moving in parallel lines and with equal speed. But it will be clear that those units on the exterior of this group which are moving through the barrel will come in contact with the inner face thereof, and whatever the material of the barrel such contact will set up a slight resistance. The result will be that to an extent the core of this mass of units will move a little faster than its periphery. The teeth 27 retard the column of smoke at the periphery as the smoke emits out of the barrel 25 and expands to cause a whirling motion of the smoke resulting in the cylindrical smoke rings. At any rate I have discovered that the result of this combination of structures is such that by slightly puffing the operator may cause the volume of smoke within the toy to be emitted at its outlet end in rings

which would be rather large with the device shown in Figs. 2 and 4.

It sometimes occurs that with a user whose throat action is different from that common to smokers, or with smoke of different kinds or in an apartment where there may be drafts, it is desirable to lengthen the barrel. For this purpose the outer member O can be telescopically moved along upon the inner member I. It is obvious, therefore, that the extensions 7 and 17 upon the shell 5 come into play at this time by sliding along upon the exterior of the tubular barrel 25, and such sliding in no way affects the position of the diffuser 30. It is also obvious that if the user employ care the mouth piece may be entirely omitted, the inlet end of the barrel to the left of the diffuser then constituting the expansion chamber.

What is claimed as new is:—

1. In a smoke ring blower, a barrel formed from a thin metal tube and having a bore of some considerable size open at both ends; combined with an outer shell consisting of a body of substantially the same length as said barrel, and intumed extensions at its extremities each having a bore of a size to fit closely but slidably upon the exterior of said barrel and a diffuser for diffusing the smoke passing through the barrel.

2. In a smoke ring blower, a barrel formed from a thin metal tube and having a cylindrical bore of some considerable size open at both ends, the outlet end of the tube having means for retarding the exit of the smoke near the walls of the tube; combined with an outer shell surrounding said barrel telescopically, a mouth piece having a nipple fitting frictionally into the inlet end of said barrel and a diffuser for diffusing the smoke passing through the barrel.

3. In a smoke ring blower, a barrel formed from a thin metal tube and having a cylindrical bore of some considerable size open at both ends; combined with a shell consisting of a tubular body of substantially the same length as said barrel and cut off flat at its inner end and intumed extensions at its extremities fitting slidably around the exterior of the barrel, and a mouth piece including a body complementing the body of said shell, its outer end being cut off flat to fit against the flat end thereof, a tubular nipple at the axis of said outer end fitting frictionally within the inlet end of said barrel and a diffuser for diffusing the smoke passing through the said barrel.

4. In a smoke ring blower, a barrel formed from a thin metal tube and having a bore of some considerable size open at both ends; combined with a shell consisting of a tubular body of substantially the same length as said barrel and cut off flat at its inner end and intumed extensions at its extremities

fitting slidably around the exterior of the barrel, a mouth piece including a body complementing the body of said shell, its outer end being cut off flat to fit against the flat
5 end thereof, and a tubular nipple at the axis of said outer end fitting frictionally within the inlet end of said barrel, and a diffuser consisting of a foraminous sheet standing across the interior of the barrel and
10 the inner end of the nipple with its edges

clamped between the adjacent walls of these elements.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

EDWARD F. KELLY.

Witnesses:

I. L. TALLO,
C. R. WHITE.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents
Washington, D. C."
