

(No Model.)

G. W. BLAIR.

MANUFACTURE OF LAMP CHIMNEYS.

No. 375,796.

Patented Jan. 3, 1888.

Fig. 1.

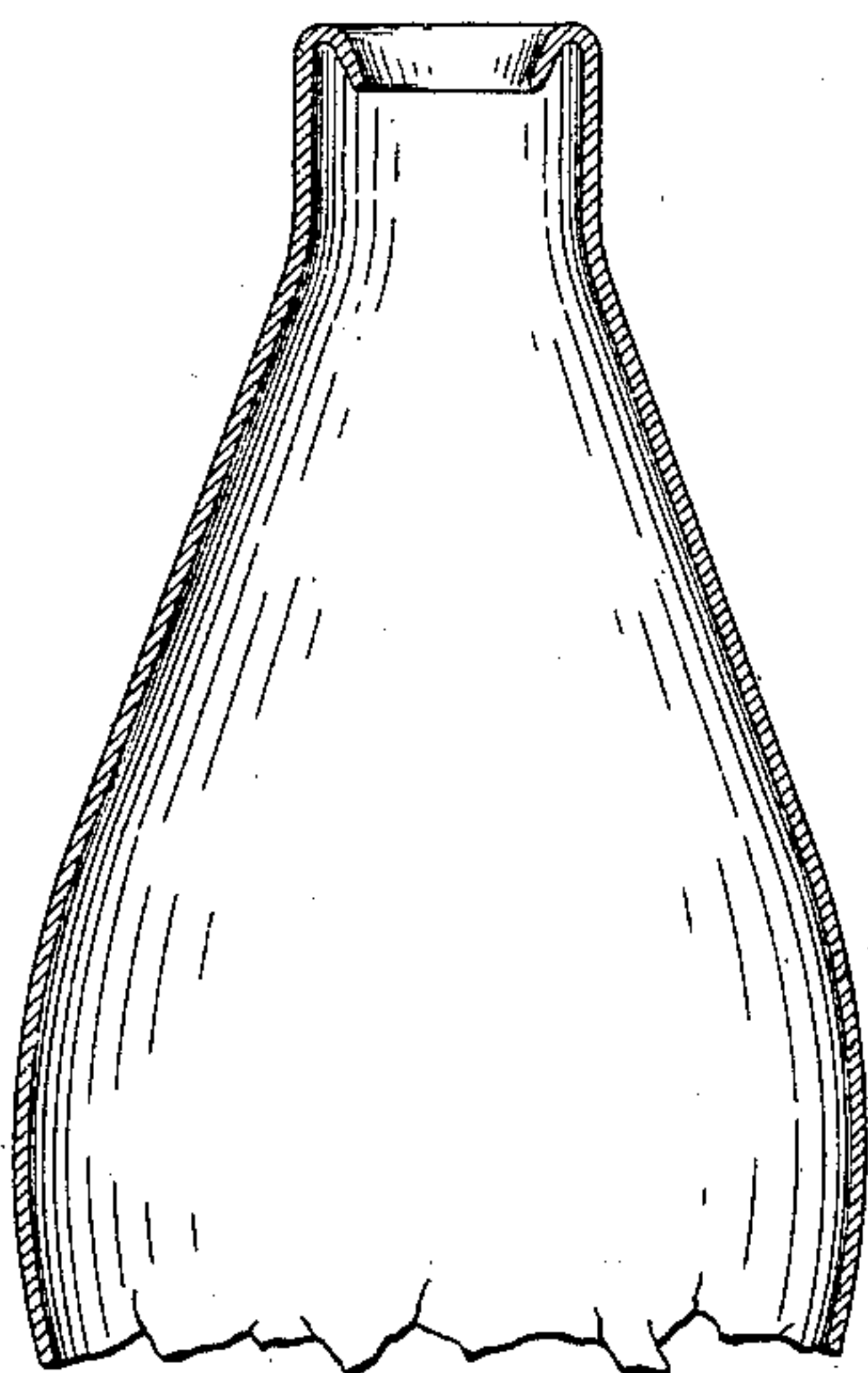


Fig. 2.

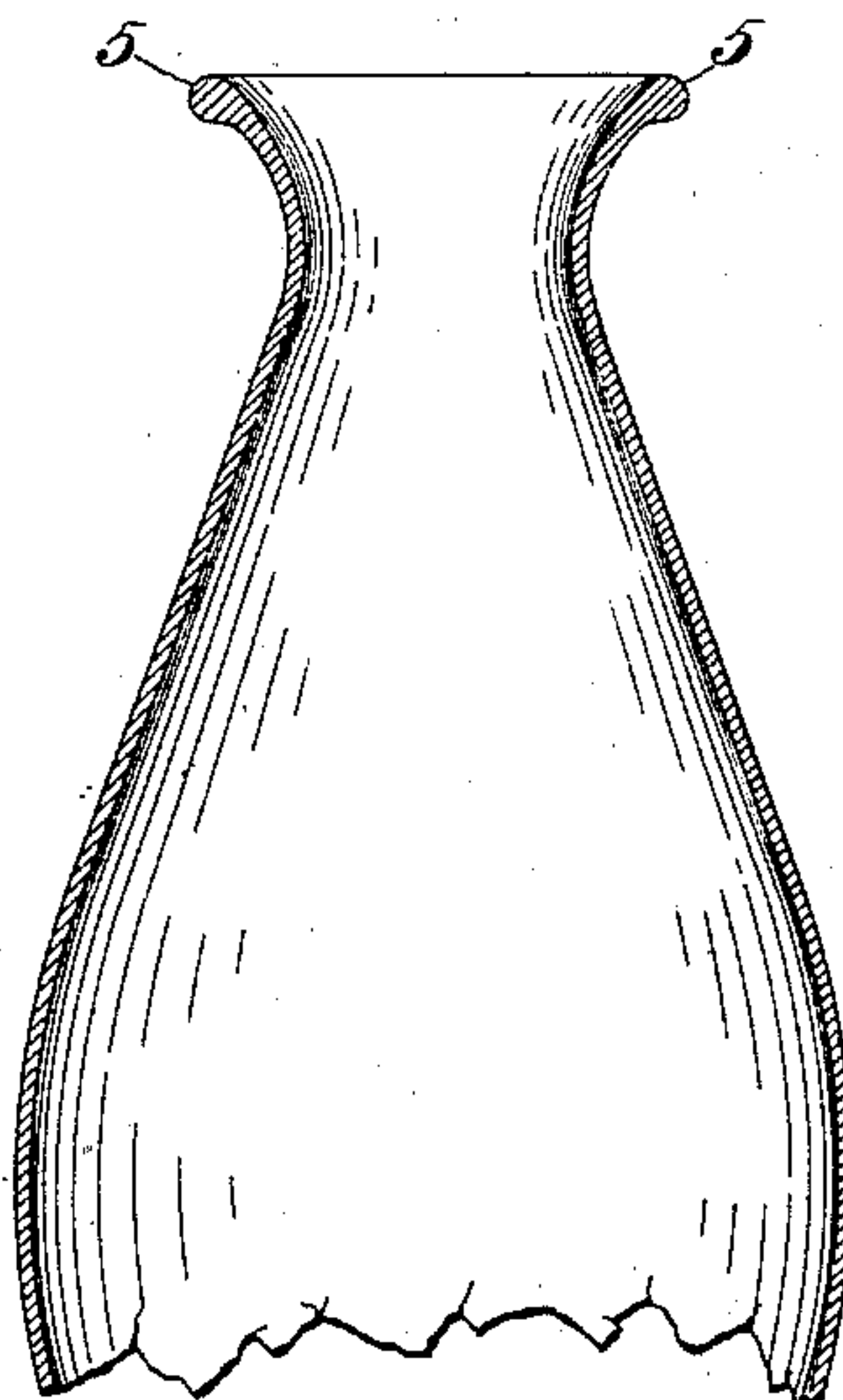


Fig. 3.

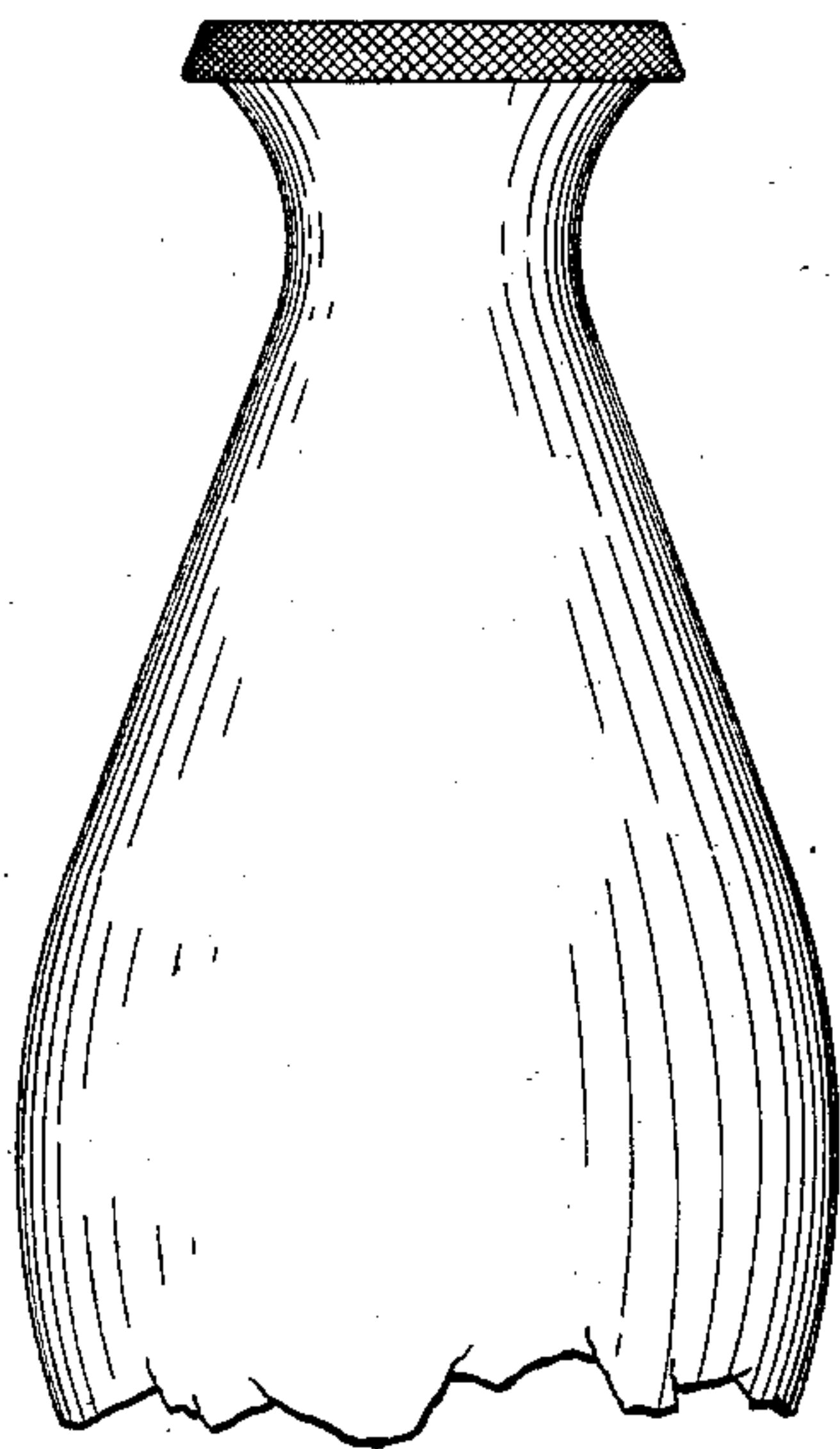
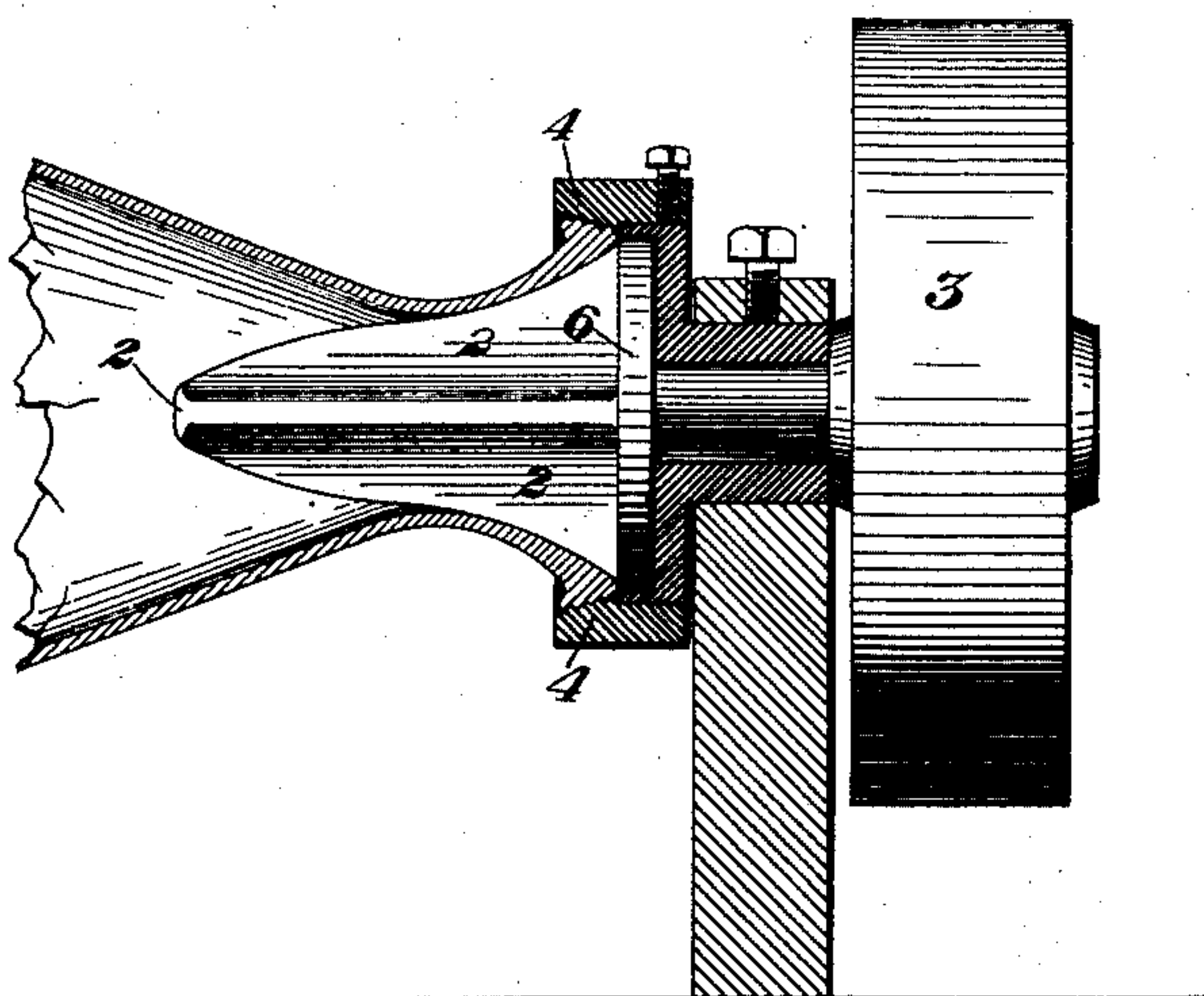


Fig. 4.



WITNESSES.

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# UNITED STATES PATENT OFFICE.

GEORGE W. BLAIR, OF PITTSBURG, PENNSYLVANIA.

## MANUFACTURE OF LAMP-CHIMNEYS.

SPECIFICATION forming part of Letters Patent No. 375,793, dated January 3, 1888.

Application filed June 8, 1887. Serial No. 240,657. (No model.)

*To all whom it may concern:*

Be it known that I, GEORGE W. BLAIR, of Pittsburgh, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in the Manufacture of Lamp-Chimneys; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an improvement in that part of the manufacture of lamp-chimneys and other hollow glassware which consists of flaring and crimping or figuring the upper ends or mouths of the chimneys after they have been blown. It is illustrated in the accompanying drawings, in which—

Figure 1 is a side view of a lamp-chimney in the process of formation, showing it with the end turned in. Fig. 2 is a similar view of a lamp-chimney after it has been welted by the flaring-tool. Fig. 3 is a similar view of the flared, welted, and figured chimney. Fig. 4 is a vertical axial section of the flaring and figuring tool.

Like symbols of reference indicate like parts in each.

In the manufacture of lamp-chimneys it has been customary after they have been blown to open and flare the upper ends by means of a rotary mandrel, tapering in shape, the small end of which enters the chimney. At the same operation the end of the chimney is sometimes crimped or figured by being forced against a stationary crimped or roughened box at the base of and around the rotary mandrel, as shown in my Patent No. 201,589. The effect of this is to figure the upper edge of the chimney with beads or other raised figures which refract the light of the lamp and give a brilliant and good effect.

As distinguished from this prior state of the art, my invention consists in the combination of a series of steps by which the chimney is treated, some or all of which steps may be used.

It has heretofore been the practice in flaring chimneys to heat and soften the end before a glory-hole and at the same time to rotate the chimney rapidly, so as by centrifugal action to prevent the end of the chimney from closing in or welting. When the glass is sufficiently softened, it is taken to the rotating

mandrel and pressed against it, so that the mandrel shall enter and open the end of the chimney, giving it the proper flare. This mandrel is shown in the drawings, Fig. 4, 2 being the conical mandrel, 3 the belt-wheel by which it is driven, and 4 the figured or crimped stationary box at the base of the mandrel. Instead of thus treating the chimney I rotate it slowly before the glory-hole, so that the glass at the end shall in softening turn inward, as shown in Fig. 1. Then, when the chimney is flared by the mandrel 2, the turned-in or thickened glass forms an annular welt, which makes the end of the chimney more substantial and stronger than it has been heretofore, and forms a body for the crimp marks or pattern, so that the chimney may not be unduly weakened by being thus marked. Besides these beneficial results, which have relation to the strength of the chimney, the welting is a benefit, because it improves the appearance of the article by forming a bead or thickened annulus around the chimney-top, as shown at 5 in Fig. 2. It is also of especial benefit with the peculiar form of crimping-box which I employ. Heretofore such boxes have had the figure marks or beads cut at the base of the box and sometimes at the base and on the sides, so that the top edge of the chimney, or the top edge and a lateral rim on the outside of the chimney at the top shall be marked. I have discovered that by impressing the chimney-top laterally and not at the top, and turning in the chimney-top, as before described, before it is figured or crimped, there is a solid substantial band formed around the chimney at the side of the top, which affords a good basis for the impress of the crimp. This peculiar form of crimp is shown in Fig. 3, the crimper-box being a cylindrical case the base of which is entirely filled with the circular base 6 of the rotary mandrel, and the side of the case being figured with a diamond pattern or with some other similar pattern, which will allow the chimney to clear itself in being withdrawn, and for the same purpose the case is made to flare outwardly, as shown.

Now, when the chimney is fed into the box, the mandrel opens out its mouth, the top edge of the chimney engages the rotary base 6 of the mandrel and does not touch the figured side



of the case; but the side of the top, being forced outward against the side of the case, is impressed with the crimp or figured pattern, and when the top is turned in before being thus crimped the impressions appear on a broad substantial base, as before described. The effect of keeping the top of the chimney in contact with the rotary surface of the mandrel is to impart to it a brilliant polished appearance, which is very agreeable to the eye, while if it should be permitted to come in contact merely with the stationary surface of the box it would have a dull look, which would materially impair the beauty of the whole chimney.

The finished chimney, made by first heating and turning in the top and then flaring and figuring it by a rotary mandrel in a box, wherein the top edge of the chimney is subjected to a rotary surface and polished, is shown in Fig. 3, and is very strong and ornamental; but I do not limit myself to the combination of all these steps. For example, the chimney may be simply turned and flared, when the advantages of my invention would be secured so far as relates to the welting, or it may be turned in and flared and figured, the figuring being either on the top or on the side, or it may be figured laterally and not on the top, without any welting.

As before stated, my invention may be applied to other hollow glass articles besides lamp-chimneys, and I desire to cover such application by the use of the word "lamp chimney."

I do not claim herein specifically an apparatus for flaring chimneys having a conical man-

drel tapering from point to base and having at the base a rotary polishing-surface, since I intend to make that the subject of a separate application.

I claim, broadly—

1. An improvement in the manufacture of lamp-chimneys, which consists in turning in the chimney-top and then flaring it, substantially as and for the purposes described.

2. An improvement in the manufacture of lamp-chimneys, which consists in turning in the chimney-top and then flaring and figuring it, substantially as and for the purposes described.

3. An improvement in the manufacture of lamp-chimneys, which consists in turning in the chimney-top, then flaring it by a rotary mandrel, and subjecting the chimney to contact with a box having lateral impressions, substantially as and for the purposes described.

4. An improvement in the manufacture of lamp-chimneys, which consists in turning in the chimney-top, then flaring it by a rotary mandrel, subjecting the side of the chimney to contact with a box having lateral impressions, and subjecting the top edge of the chimney to contact with a rotary surface at the base of the box, whereby it is polished, substantially as and for the purposes described.

In testimony whereof I have hereunto set my hand this 6th day of June, A. D. 1887.

GEORGE W. BLAIR.

Witnesses:

O. B. CRAIG,  
W. B. CORWIN.