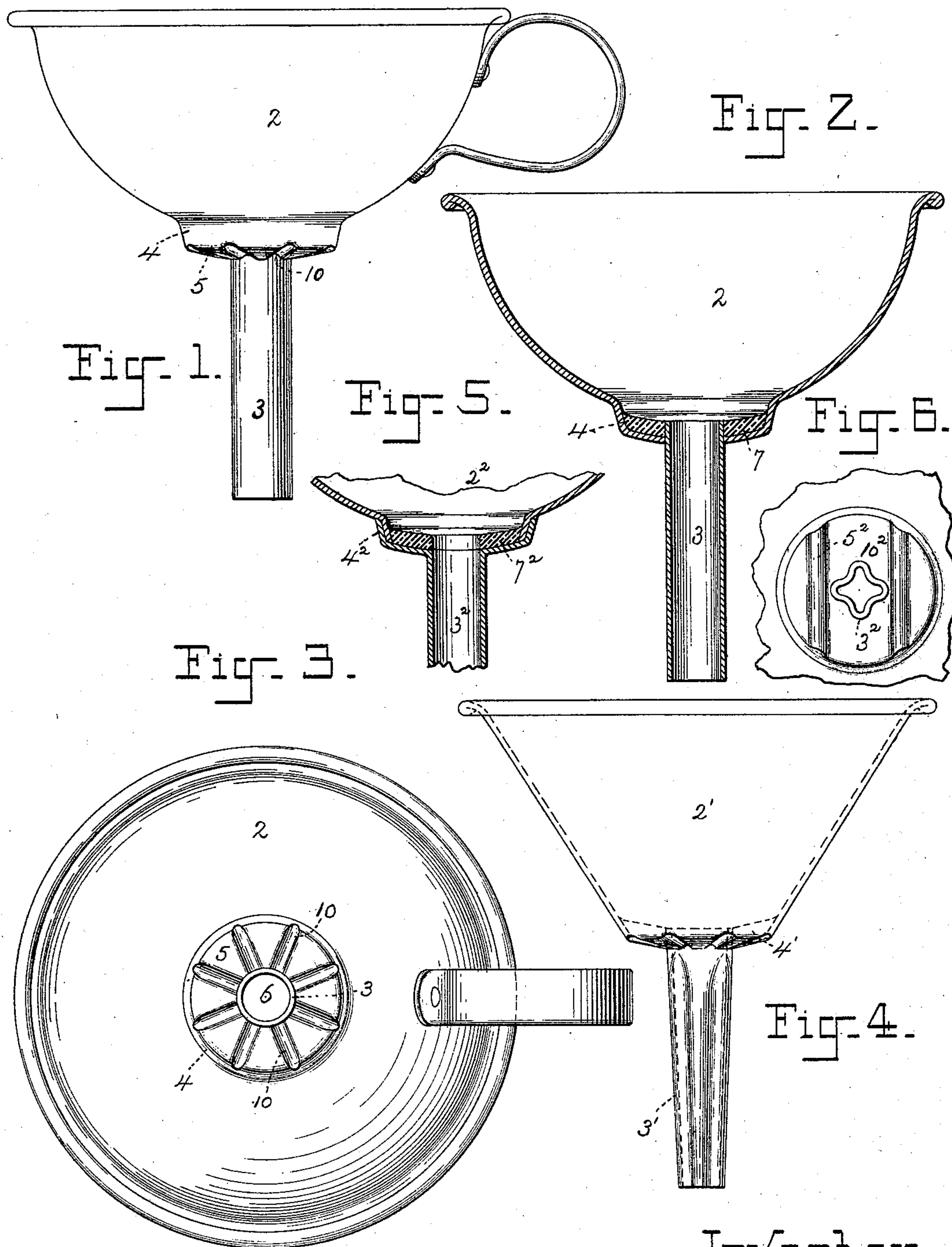


(No Model.)

H. STRATER.  
FUNNEL.

No. 539,965.

Patented May 28, 1895.



Witnesses.

*John F. Nelson.*

*Francis C. Stanwood*

Inventor.

*Herman Strater.*

*by H. C. Lodge, Atty.*



# UNITED STATES PATENT OFFICE.

HERMAN STRATER, OF BOSTON, MASSACHUSETTS.

## FUNNEL.

SPECIFICATION forming part of Letters Patent No. 539,965, dated May 28, 1895.

Application filed December 9, 1893. Serial No. 493,202. (No model.)

*To all whom it may concern:*

Be it known that I, HERMAN STRATER, a citizen of the United States, residing at Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Funnels; 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, reference being had to the accompanying drawings, and to figures of reference marked thereon, which form a part of this specification.

This invention relates to improvements in funnels employed in decanting or pouring liquid from one vessel to another; and it consists in a mouth piece, having a shoulder formed upon its bottom, and grooves or channels formed in the under side of the shoulder for the escape of air, combined with the spout, which extends a suitable distance up into the mouth piece, and a layer or mass of solder in the bottom of the shoulder for the purpose of stiffening and strengthening the shoulder and securing the spout in position, as will be more fully described hereinafter.

The objects of my invention are to provide a shoulder on the lower portion of the mouth piece, and which extends at an angle to the mouth of the vessel being filled, and forms a support for the funnel; and to strengthen and stiffen this shoulder at the same time that the spout is secured in place.

This invention furthermore may be considered as relating to an improvement upon that shown and described in patent granted to me on December 5, 1893, No. 509,966.

The object of my present invention is to simplify the construction, enable the article to be made more cheaply, and increase its durability.

The drawings represent, in Figure 1, a side elevation. Fig. 2 is a vertical diametrical section of a funnel embodying my invention. Fig. 3 is an inverted plan. Fig. 4 shows a modified funnel, the spout being longitudinally ribbed or grooved to form air-passages. Fig. 5 is a modified construction of funnel. Fig. 6 is a modified form of shoulder.

Funnels of the above class comprise two principal parts, a mouth-piece or liquid re-

ceiver, and a spout, the duty of which is to convey the liquid received in the mouthpiece and deliver it into the bottle, flask or other vessel into which the liquid is to be transferred.

In my present invention the funnel was provided with a removable collar or ring adapted to be applied exteriorly about the spout and was moreover formed with ribs or projections upon the under side in order to create passages for the air, which is expelled from the bottle as the act of filling progresses.

My present improvement relates particularly to the change in the form of the funnel with respect to the collar, whereby said collar is incorporated to form a portion of the funnel at the base of the mouthpiece proper and further is made to perform the same duties as the said removable collar.

In the drawings I have shown a funnel composed of the mouthpiece 2 which may be cup shaped or frusto-conical in form and to be united with a spout 3, which latter may be a short length of pipe cylindrical, as shown in Figs. 1 and 2, or tapered as in Fig. 4. In the construction of funnels of this class a very important feature is to provide for ready escape of the air from the receiving vessel otherwise liquid is carried over and waste occurs. Furthermore it is important that the funnel should likewise set firmly upon the nose of the receiving flask or bottle and not be liable to tip thus serving as a rest for the nozzle of the supply vessel. To accomplish these objects and at the same time to simplify the construction, I propose to form the mouthpiece with a shoulder 4. This is located at the base of said mouthpiece and is formed as an integral part thereof as shown in Fig. 2 in section. Hence a flat, or partially rounded surface may be created transversely of the spout at this point and such surface serves as a seat to support the funnel upon the nose of the vessel in process of filling.

To prevent the loss of liquid and to allow the air free vent from the bottle in process of filling I have formed radial corrugations which may be of any desired shape in cross-section. Said corrugations are struck up from the metal forming the shoulder, the latter in the present instance being a part of the mouthpiece and create air-passages 10. Said mouth-



piece is furthermore provided with a central opening 6 within which is positioned the spout. The upper extremity of the latter is preferably thrust a short distance above the inside surface of the mouth-piece in order to create an annular space which is filled with solder 7. By this method the mouthpiece is thickened and strengthened, since the solder fills the depressions formed upon the inside of the mouthpiece when the exterior radial corrugations are struck up. Thus there is no liability of the said air passages being obstructed or destroyed, while a stiff joint is created at the point of union between the spout and the mouth-piece. Moreover the chance of breaking through the thin metal forming the body of the mouth-piece is removed, since it cannot contact with the neck of the bottle, when actively employed.

When the funnel is placed in a flask or bottle it is evident that the ridges along the under surface of the shoulder rest on the neck of the bottle and serve as a series of bearing points. Hence the depressions or air passages are always free to permit escape of air.

In Figs. 1 and 2 the spouts are plain cylindrical tubes, but in lieu thereof they may be longitudinally corrugated, as shown in the tapered spout illustrated in Fig. 4 such as is in general use.

I do not desire to be limited to any particular form of spout in connection with the make up of a funnel as herein shown since I consider my invention to be embodied in the production of a funnel provided with a shoulder adapted to extend transversely of the spout at its junction with the latter, said shoulder

to be made integral with or molded from the material composing the funnel and furthermore furnished with corrugations upon its under surface to create air passages.

In Fig. 5 I have shown an evident alternative form of construction, that is in lieu of molding the shoulder from the material composing the mouth-piece as shown in Figs. 1, 2 and 3, I spin or draw out the metal at the upper extremity of the spout 32 in order to create a shoulder 42 and then unite the mouth-piece thereto. Since the air passages are formed upon the under surface of said shoulder it is evident the same results are obtained.

In Fig. 6 I have shown a modified shoulder wherein, in lieu of corrugations or grooves, one or more projections 52 are arranged transversely and laterally of the spout.

What I claim is—

In a funnel, a mouth piece, and a spout, one of which is provided with an integral shoulder which extends at an angle to the mouth of the vessel being filled, combined with a plate, or mass of solder placed in the shoulder around the upper end of the spout, and which serves both to help secure the parts together and to stiffen the shoulder, and which shoulder is provided with air passages in its under side, substantially as shown.

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

HERMAN STRATER.

Witnesses:

H. E. LODGE,  
FRANCIS C. STANWOOD.