Sept. 30, 1930. G. L. SOUTHARD 1,776,867

GAGGER

Filed April 8, 1929

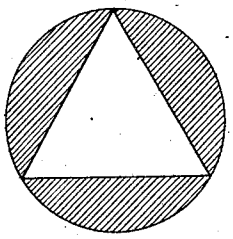


FIG. 5.

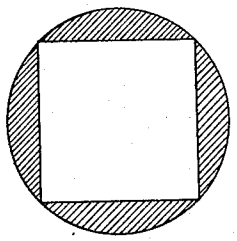


FIG. 6.

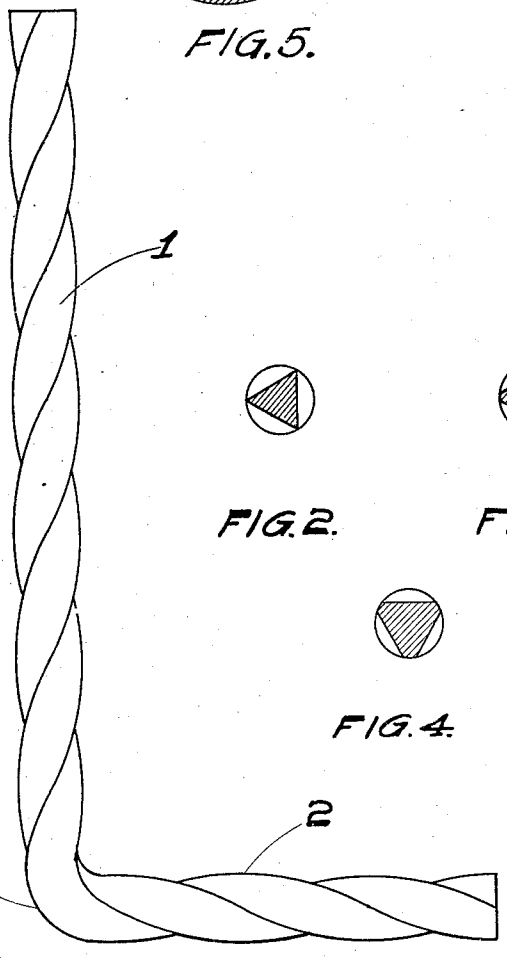


FIG. 2.



FIG. 3.

FIG. 4.

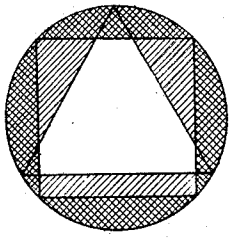


FIG. 7.

FIG. 1.

George L. Southard
INVENTOR

BY

Edward R. Inman
ATTORNEY

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UNITED STATES PATENT OFFICE

GEORGE L. SOUTHARD, OF FRANKLIN, PENNSYLVANIA

GAGGER

Application filed April 8, 1929. Serial No. 353,589.

This invention relates to a device for use in the foundry art and more especially for use in flasks for foundry molds; its function is to retain the sand in the drag, cheek-piece or cope of the mold or in either of them in which the sand might drop out or away from the mold, or tend to do so because of lack of sufficient support.

I am aware that gaggers formed from a twisted steel are not broadly new, but my improved gagger here shown and described relates especially to a new and efficient cross-sectional shape which is such that its vertical, sand-sustained leg is embedded and retained in the sand with greater tenacity, and consequently its horizontal or sand-sustaining leg has a greater retaining and sustaining power than any form of gagger which has heretofore been produced; to provide a gagger having such qualities is the object of this invention.

The construction whereby I am enabled to attain said objects is clearly illustrated in the accompanying drawings which form a part hereof and in which:

Fig. 1 is an elevation of a gagger embodying my inventive idea,

Figs. 2, 3 and 4 are transverse sections of a triangular twisted steel bar from which my improved gagger is made.

Figs. 5, 6 and 7 are described farther on in this specification where their particular object, respectively, appears.

My improved gagger comprises the leg 1 which usually is placed in a vertical position in a foundry flask and is sustained and retained in such position by being firmly embedded in the sand of the mold; it also comprises a toe 2, which usually occupies a horizontal position within the wall of, near to and along the cavity or matrix face of the mold, and sustains the sand from dropping into the cavity, also from the parting face of the mold; the corner 3 is termed the heel of the gagger.

The sectional views are given for the purpose of indicating various forms of corners of the bar; these variations may be either purposely caused, as by forming the groove in the roll to so shape them, or they may be caused by various circumstances such as passing the bar through the rolls at too low a temperature at the final pass or by a slight undersize in the bar at the last or finishing pass of same through the rolls.

It will be noted that the difference in the forms of the corners shown in Figs. 2, 3 and 4 is slight; and I do not wish to designate any particular one of them as the preferred form, but customers who express a preference in respect to the shape of the corner may have their orders filled accordingly.

The particular inventive idea embodied in my new form of gagger resides in the matter of forming it from a triangular bar of twisted steel.

In making known the particular advantage of said triangular form let it first be noted that the efficiency of a gagger depends primarily upon the tenacity of grip of the packed sand upon the vertical leg of the gagger; this determines its sustaining capacity for the sand that is super-posed upon the toe of the gagger. Said tenacity of hold of the vertical leg in the sand depends upon the density of the sand and the quantity thereof that would be broached out by drawing the vertical leg out of the sand longitudinally without permitting it to turn, as its spiral form or twist would tend to cause it to do. From an inspection of Figs. 2, 3 and 4 it will be noted from the area of the circumscribed circles and the relative areas of the respective bars, that the amount of sand that would be broached out would be considerably greater than it would be were the inscribed bar square or had the shape of nearly any other regular polygon of twisted construction.

For the purpose of illustrating the greater body of sand that would be so broached from the mold by a triangular bar than by a square bar, both of which could be circumscribed by a circle of exactly the same diameter, I have incorporated in the drawings Figs. 5, 6 and 7. Fig. 5 indicates a triangular bar, Fig. 6 indicates a square bar and Fig. 7 is a composite of said two bars.

From an inspection of these three figures it will be noted that considerably more of the inside of the circumscribed circle of Fig. 5

is occupied by cross hatching, which corresponds to tamped sand, than is so occupied in Fig. 6. Fig. 7 indicates this difference clearly.

Having thus described my invention what I claim as new and desire to secure by Letters Patent is:

1. A gagger for use in foundry molds comprising a metallic twisted bar of triangular cross section formed into an L shaped element for the purpose specified.

2. A gagger for use in retaining sand within the flask of a foundry mold comprising a metallic bar of triangular cross section, twisted and formed into an L shaped element so that one leg thereof may be embedded within the sand of the mold in a vertical position, and be so retained by having the sand tamped firmly thereabout, the other leg extending in a horizontal position adjacent a horizontally extending face of the mold so as to support the sand forming said face.

In testimony whereof I affix my signature.

GEORGE L. SOUTHARD.