

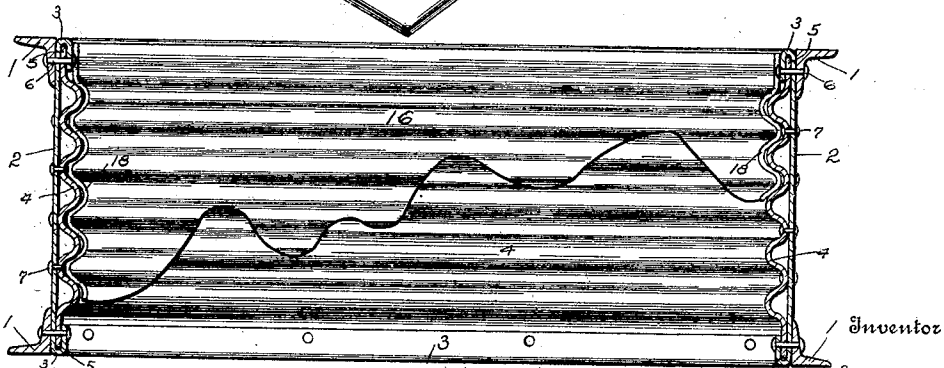
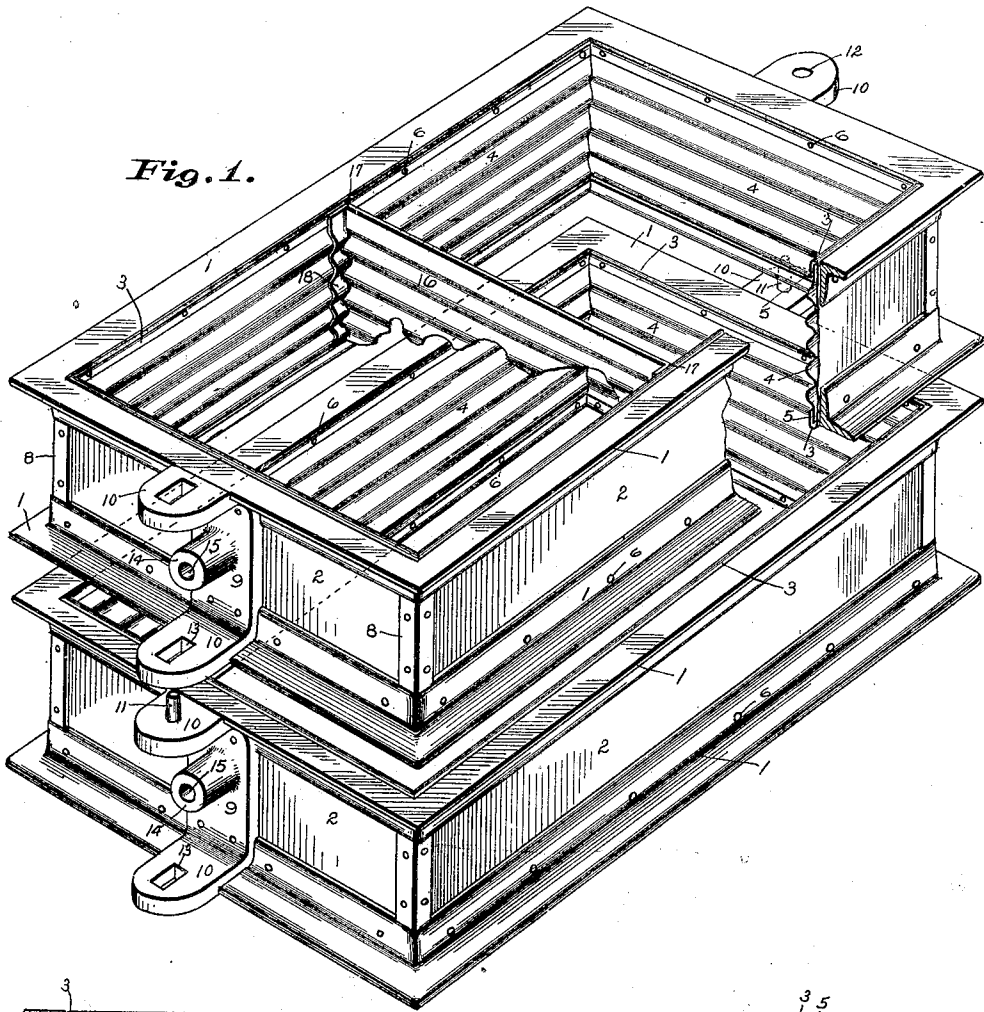
J. L. BUTLER.

FLASK.

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921,949.

Patented May 18, 1909.



Witnesses

Harry O. Rastetter.

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Fig. 2.

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JAMES L. BUTLER, OF ALLIANCE, OHIO.

FLASK.

No. 921,949.

Specification of Letters Patent.

Patented May 18, 1909.

Application filed April 9, 1908. Serial No. 426,022.

To all whom it may concern:

Be it known that I, JAMES L. BUTLER, a citizen of the United States, residing at Alliance, in the county of Stark and State of Ohio, have invented a new and useful Flask, of which the following is a specification.

My invention relates to improvements in foundry flasks, in which sheet metal, appropriately supported and reinforced, is used in the construction of the various parts of the flask and in which corrugated sheet metal is used for the lining, of said parts, and for the gaggers as hereinafter fully set out; and the objects of my improvement are, first, to provide a foundry flask having the qualities of durability and strength in combination with a comparative lightness in weight; second to provide a flask in which the sand will be firmly held by means of the corrugations extending around its inner surfaces and into which corrugations the sand may be readily tucked in the operation of ramming-up; third to afford means for readily locating an adjustable gagger at any point throughout the length of the flask. I attain these objects together with others, which will be apparent to those skilled in the art, by the construction illustrated in the accompanying drawing, in which—

Figure 1 is a perspective view of a two part flask showing my improvement, the cope and drag being illustrated as separated from each other, a portion of one of the sides of the cope being broken away. Fig. 2 is a transverse cross-section through the sides of the cope showing the construction of said sides and the arrangement of the gagger with relation thereto.

Similar numerals of reference indicate similar parts throughout the several views.

1 indicates a frame, each part of the flask having two such frames extending around its sides, the one at the top and the other at the bottom of the part as shown in the drawing. This frame may be formed of one continuous piece or may be formed in parts and secured together in any practical mechanical manner. Between the two frames of each part the flat sheet metal sides 2 extend entirely around the part. The edges of the sides 2 extend past the frame a short distance and may be returned or bent over as shown at 3. Before the said edges 3 are bent or returned the corrugated lining 4 is placed on the inside of the flat sides 2, the

said lining 4 having at each edge a flattened portion 5 running throughout its length.

It will be understood that when the portion 3 of the sides 2 are returned or bent over they will engage the flattened portion 5 of the lining and tend to hold said lining in place. Rivets 6 are used to fasten the frame, the side 2, the lining 4 and the bent over portion 3 together, said rivets being arranged at intervals around each of the frames. If as a matter of practical manufacture it is thought best, rivets or other fastening devices 7 may be employed at various places to fasten the corrugated lining to the sides 2 intermediate the frames 1. If it is desired, pieces of angle-iron may be attached at the corners upon the outside of the sides 2 as shown at 8, the two sides of the angle extending in such way as to engage the two sides of the corner as shown, and also extending between the two frames to further support them in their spaced relation to each other.

Upon two of the sides or ends of each part of the flask are arranged an improved form of flask pin, together with a device whereby the part may be readily grappled by means of a suitable crane or hoisting attachment, whereby either part, but more usually the cope, may be lifted and turned over. Extending between the frames is the base portion 9, which is securely attached to the said frames. At each end of the said base portion is a portion extending at right angles to said base the same being numbered 10. The outside surface of the portion 10, it should be understood is in a plane with the side of the frame forming the edge of the part. On the part designed for the drag the upper portion 10 at each end is provided with a projecting pin 11. The lower portion 10 at one end of the drag is provided with a round hole such as shown on the cope at 12, which snugly fits the pins 11 on other parts, all such pins being of a uniform diameter. While at the other end of the said drag a hole 13 is arranged in the lower portion 10, said hole being of rectangular form, its width being equal to the standard diameter of the pins 11, and its length extending in a line with the flask pin attachment at the opposite end or side of the part, the length of said hole being somewhat greater than its width.

Extending from the base 9 intermediate the two portions 10, is the portion 14, which

in transverse cross-section is round and is drilled hollow longitudinally at 15. It will be understood that this extension will afford ready opportunity for the attachment of a lifting device by the insertion of a suitable pin into each of the portions 14, upon which the part may be turned after it has been lifted into a free position.

On such parts as are especially designed for use as copes, no pins are provided on the portions 10, but the said portions are provided at one end with the round holes 12, such as previously described, and at the other with the rectangular holes 13, also previously described. It will thus be seen that by an appropriate selection of various parts provided with various appropriate flask pin devices as described, flasks of two, three or any desired number of parts may be built up. In placing one part upon the other, the pin 10 of one part is brought into engagement with one of the holes 12 on the other part and the pin on the opposite side or end is then brought into engagement with the rectangular hole 13. This will center the flasks properly, and at the same time will allow for slight variations; for the pin registering with the round hole 12 will hold the parts in proper longitudinal and transverse relationship, but will allow slight adjustment longitudinally to accommodate variations in the parts.

Flasks of the construction herein disclosed may be made of different sizes as required and it will be understood that in case of the smaller sizes the projecting portion 14, may be omitted, as such smaller sizes may be easily handled without the use of any hoisting device.

The gagger or sand support 16 is constructed of corrugated material, preferably sheet metal, and consists in a corrugated sheet or strip extending from the corrugated lining of one side of the part to the corrugated lining of the other side.

At 17 at each end of the strip 16, the said strip is bent at right angles and the portion 18 is provided with transverse corrugations to match the corrugations of the lining of the part. The length of the strip 16 is such that it will be held rigidly in place by reason of the engagement of the corrugations on the bent portion 18 with the corresponding corrugations of the lining 4, when the said strip 16 is at right angles with the sides of the flask as shown in Fig. 1, and it will be understood that the gagger may be readily moved or taken from the part by disarranging the position of one of its ends so as to destroy its transverse arrangement. In Fig. 2 the portion 18 is shown in engagement with the lining 4, which lining is shown in cross section, and the arrangement and relation of the device to the side and lining of the part

will be more fully understood by reference to said figure.

While I have shown the flask as constructed entirely of metal, it will be understood that any suitable material may be used for the various parts, and practically the same construction may be employed for all sizes and shapes of flasks, and details of construction herein shown may be somewhat changed without departing from the true spirit of my invention.

Having fully described my invention what I claim as new and desire to secure by Letters Patent, is—

1. In a flask, a part provided with frames spaced from each other and sides attached to said frames, said sides composed of flat sheet metal portions and corrugated sheet metal portions, the said flat and corrugated portions being fastened to each other.

2. In a flask, a part provided with sides, said sides comprising a flat sheet metal portion and a corrugated sheet metal portion, and the said flat and corrugated portions fastened together, whereby the said flat portion is braced and strengthened by said corrugated portion.

3. In a flask, a part, said part comprising flat sheet metal sides, a separate corrugated lining located on the inner surface of said sides and fixedly attached to the same, substantially as and for the purpose specified.

4. In a flask, a part comprising angle-iron frames spaced from each other, sheet metal sides, a corrugated lining having a flattened portion along its longitudinal edges, the said corrugated lining located on the inner surface of the sheet metal sides, portions of the sheet metal sides returned or bent over the said flattened portion of the corrugated lining, and the said lining, sides, and frames fastened together substantially as and for the purpose specified.

5. In a flask of the character described, a part comprising frames, sides and corrugated lining and two flask pin devices, located on opposite sides of the said part, the said devices provided with extended portions, the said portions being drilled hollow longitudinally, whereby said part may be readily grappled by a lifting device, substantially as and for the purpose specified.

6. The herein described flask consisting of cope and drag, the drag being provided upon opposite sides with flask pin devices, the said devices provided with base portions, upper and lower right angled extensions of said base portions, the upper extension on each end provided with a pin and the lower extension on one end provided with a round hole of equal diameter with the diameter of the pins and the lower extension upon the other end provided with a rectangular hole of a width equal to the diameter of the pins and a

length greater than the said diameter, substantially as and for the purpose specified.

7. The herein described flask consisting of cope and drag, the cope being provided upon opposite sides with flask pin devices, the said devices provided with base portions, upper and lower right angled extensions of said base portions the said extensions at one side of the cope being provided with round holes and the extended portions on the opposite side being provided with rectangular holes, the width of said rectangular holes being equal to the diameter of the round holes on the device opposite and the length of said rectangular holes being greater than their width, the holes in the said extensions being adapted to engage pins provided on the drag, substantially as and for the purpose specified.

8. In a flask provided with a corrugated lining, a gagger or sand support formed from a sheet of corrugated metal, the said sheet provided with a bent-over portion at each end, said bent-over portions having corrugations adapted to engage the corrugations of the lining on opposite sides of the said part, whereby the said gagger is held in place and may be fixed at different locations in said part, substantially as and for the purpose specified.

9. In a flask composed of parts, the combination of angle iron frames, flat sheet metal sides, corrugated metal lining for said sides, angle iron pieces on the outside corners of the

sides, flask pin devices upon opposite sides of the drag, the upper right-angled portions of said devices provided with pins, the lower right-angled portion on one side provided with a round hole and the lower right-angled portion on the opposite side provided with a rectangular hole, flask pin devices upon the corresponding opposite sides of the cope, both upper and lower right-angled portions of the device on one end provided with round holes and both upper and lower right-angled portions on the opposite side provided with rectangular holes, the length of said rectangular holes being greater than their width and a corrugated sheet metal gagger adapted to extend between the sides of either part of the flask and to be held in place by engagement with the corrugated lining thereof, substantially as and for the purpose specified.

10. In a flask, a part having sides, the inner surface of said sides provided with corrugations, and a gagger provided with corrugations at its ends, the said corrugations in the ends of the gagger adapted to engage the corrugations on the inner surfaces of the sides.

In testimony that I claim the above, I have hereunto subscribed my name in the presence of two witnesses.

JAMES L. BUTLER.

Witnesses:

D. SMELTZ,
W. N. CRONCK.