

E. W. BEACH.
 FOUNDRY RIDDLE.
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1,131,768.

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Fig. 1,

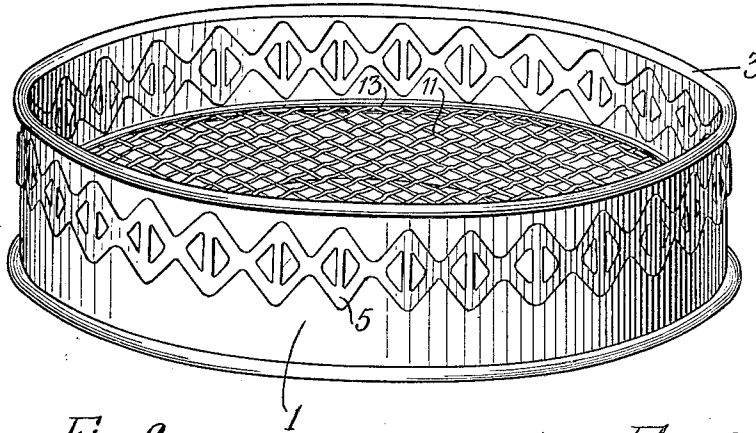


Fig. 2,

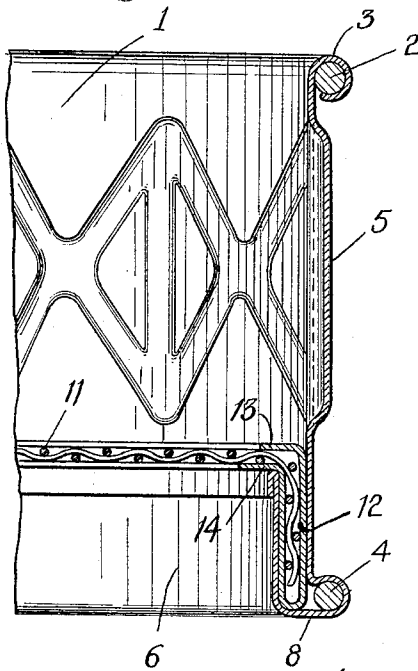


Fig. 3,

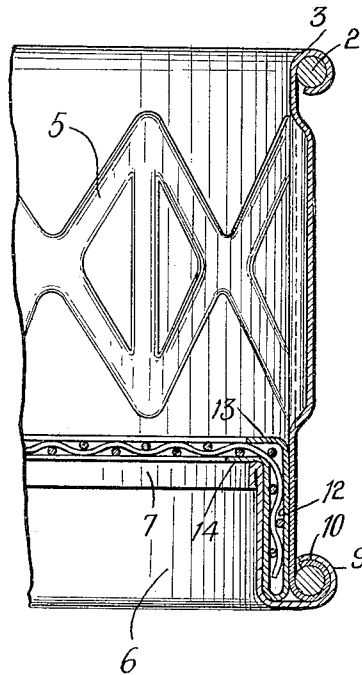
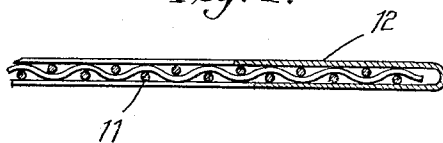


Fig. 4.



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FOUNDRY-RIDDLE.

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Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, EDWARD W. BEACH, a citizen of the United States, residing at Waterbury, county of New Haven, and State of Connecticut, have invented certain new and useful Improvements in Foundry-Riddles; 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.

The present invention relates to riddles or sieves for the use of foundrymen in riddling sand and the like, and has for its object the provision of an all metal riddle, light in weight and strong and rigid in construction, and well adapted to withstand the hard usage to which such devices are subjected whether used by hand or as parts of a shaking machine.

In the preferred embodiment of my invention, the riddle comprises a sheet metal body suitably reinforced, and has a sieve disk attached to the body in a very secure manner, but adapted for removal and replacement after the wires of the screen have become worn or frayed through use. More particularly, the riddle of my invention has a wire screen clamped at its edges between the inner and outer parts of a double hoop with inturned flanges, whereby the hoop may be driven into or out of a groove when the screen is to be renewed, this double hoop being attached in novel manner to the body of the riddle whereby it is securely held in place and whereby a broad, comfortable hand-hold is provided and other advantageous results attained, as will appear from the following detailed description and the accompanying drawings.

In the drawings, Figure 1 is a perspective view of the complete riddle; Fig. 2 is a section through the edge of the construction shown in Fig. 1; Fig. 3 shows a modification in which the inner ring, whereby the sieve is held in place, is made separate and bent up over the lower reinforcing wire ring of the body of the riddle; and Fig. 4 shows a double hoop which overlaps the edge of the wire screen before the latter has been bent down at its edge for introduction into the retaining groove or socket, wherein it is held when in use.

The body 1 of the riddle is made of heavy sheet metal, preferably with a welded seam, and is of uniform diameter from top to bot-

tom to permit the introduction of the removable sieve. This body is reinforced to withstand twisting strains and heavy usage, the reinforcement including a wire ring 2 around the top edge held in an outwardly turned bead 3. A second reinforcing wire ring 4 is positioned near the bottom of the body and corrugations 5 are pressed into the wall of the body to give it greater rigidity. Preferably these corrugations are disposed at an angle to the axis of the riddle and are formed in truss-like configuration. By use of the corrugations a stiff body is obtained, even though a relatively thin and light sheet metal is used.

At the bottom of the body and spaced therefrom, to form an annular groove or socket of uniform width from top to bottom, is a resilient ring 6 of sheet metal, the upper edge of which is doubled back on itself and pressed down to form a reinforcement 7. The bottom edge of ring 6 is bent outward, as an annular flange 8 forming a broad, comfortable hand-hold, and then is bent up and around the lower reinforcing wire ring 4 and is stiffened thereby. In the construction illustrated in Fig. 2, this annular flange is integral with the main body of the riddle, but in Fig. 3 its upturned portion 9 overlaps a bead 10 of the body so that in the latter construction the ring 6 can be made of a separate piece of metal, this being of some convenience in the processes of manufacture.

The removable sieve disk comprises a wire screen 11 of circular outline having its edge gripped between the folds of a double hoop 12 made from sheet metal folded over on itself to form an annular slot in which the edge of the disk is received. After the wire screen is in position, as shown in Fig. 4, the double hoop is bent inward to tighten its grip on the edge of the screen and to bring it into position for insertion between ring 6 and the body of the riddle. This transverse bend in hoop 12 is made far enough back from the edges of the metal to leave a pair of inwardly projecting flanges 13 and 14, serviceable to protect the bend in the screen, and also serving as projections whereby the sieve disk may be pounded into its groove or socket, or may be driven therefrom when a new disk is to be inserted. By inverting the riddle and pounding on flange 14 with a block of wood, it is easily possible to drive the sieve disk out through the body

of the riddle, and, similarly, when a new sieve is to be put in, it is possible to pound on flange 13 and drive the double hoop 12 into its groove or socket. Preferably hoop 12 fits tightly in its socket, and ring 6 is made sufficiently resilient to tightly grip the hoop after it is once in place.

With the construction above described, the frame is so reinforced by the wire rings held in the beads, and by the corrugations in the body, that practically no twisting or warping takes place even under severe use or abuse, and at the lower edge of the riddle the many thicknesses of metal stiffen the entire structure, and by preventing deformation protect the wires of the screen from undue stresses. The broad hand-hold at the lower edge makes the riddle comfortable in the hands of foundrymen, and the inturned flanges 13 and 14, in addition to serving as means whereby the sieve disk may be driven in or out, protect from wear those parts of the screen which have been bent and somewhat distorted by the bending of ring 12. Cross-wires under the screen are not necessary with riddles of this construction, and their omission lengthens the life of the screen by eliminating the chafing and localized wear ordinarily incident to the use of cross-wires.

It is common in foundry practice to put a small iron disk in the riddle with the sand and allow the disk to slide back and forth over the screen when the riddle is in use. The disk serves to cut the sand and to keep the mesh of the screen open. With the present construction the sides or body of the riddle are protected from the impact and wear of this disk by the inturned annular flange 13. In time, the wires of the screen will wear out and become broken, but the main portions of the riddle are relatively permanent and ordinarily will outlive a number of screens, and inasmuch as the screens are easily replaceable, the device as a whole is economical and in many respects superior to the wood-rimmed riddles which have been heretofore so commonly used, but which are now becoming difficult of production because of the scarcity of a suitable quality of lumber for the rims.

I claim:

1. In a foundry riddle, the combination of a cylindrical sheet metal body having a broad lower edge forming a comfortable hand-hold, a resilient ring spaced therefrom to form an annular socket, a wire screen for said riddle bent downward around its edge, and a double hoop integral throughout and formed of a single metal sheet folded on itself, said hoop gripping the edge of said screen and fitting snugly but removably in said socket, said hoop having a pair of inwardly projecting flanges overlapping the bend in said screen and serviceable as shoulders

for driving the hoop into and out of its socket when the screen is to be renewed.

2. In a foundry riddle, the combination of a sheet metal body, a resilient ring spaced therefrom to form an annular socket of uniform width from top to bottom, a hoop fitting snugly in said socket and consisting of a metal sheet folded on itself, and a wire screen bent down at its edge and gripped between the folds of said hoop, said hoop having an inwardly projecting annular flange overlapping the bend in the wire screen and serviceable as a shoulder whereby said hoop may be moved in its socket.

3. In a foundry riddle, the combination of a cylindrical reinforced sheet metal body, a resilient ring within said body and secured thereto, said ring forming a broad comfortable hand-hold and being spaced from the body to form an annular socket, and a sieve disk comprising a wire screen having its edge bent down and gripped between the sides of a folded sheet of metal forming a hoop, said hoop fitting tightly in said socket and having a pair of inturned annular flanges overlapping the bend in the wire screen, and serving as exposed shoulders whereby said hoop may be driven into or out of its socket when the sieve disk is being renewed.

4. In a foundry riddle, the combination of a cylindrical sheet metal body, reinforcements for said body, a resilient sheet metal ring within said body and spaced therefrom to form an annular socket of uniform width from top to bottom, said ring having its lower edge bent outward to form a wide hand-hold, and a sieve disk comprising a wire screen bordered by a metal ring, said ring fitting tightly in said socket but being removable therefrom, and having an inturned flange underlying a portion of said screen whereby the removal of the ring from its socket may be facilitated.

5. In a foundry riddle, the combination of a sheet metal body having reinforcements, a sheet metal ring within said body and spaced therefrom to form an annular socket, and having its lower edge shaped to form a broad hand-hold at which the riddle may be gripped by the foundryman, and a sieve disk comprising a wire screen bent down around its edge and gripped between the folds of a double sheet metal ring, said last named ring being removably held between the resilient ring and the body of the riddle, and having inturned annular flanges overlapping the bend in the wire screen and serviceable for driving the sieve disk into or out of its position in said socket.

6. In a foundry riddle, the combination of a cylindrical sheet metal body, a reinforcing wire near the bottom of said body and held in a bead thereof, a resilient sheet metal ring within said body and spaced therefrom

to form an annular socket, the lower edge of said ring being bent outward to form a broad hand-hold and overlapping the wire inclosing bead of said body, and a removable sieve disk fitting into said socket and yieldingly held between the riddle body and the resilient ring; substantially as described.

7. In a foundry riddle, the combination of a sheet metal body having at its lower edge a wire ring held in a bead, a resilient sheet metal ring fitted within said body and spaced therefrom to form an annular socket, the lower edge of said annular ring being bent outward to form a broad hand-hold and overlapping the wire inclosing bead of the riddle body to give a double thickness of metal over said wire, and a removable sieve disk having its edges held between the folds of a hoop, said hoop being seated in the socket between said resilient ring and the body of the riddle, and being removable therefrom when the sieve is to be renewed.

8. In a foundry riddle, the combination of a reinforced sheet metal body having near its lower edge a reinforcing wire ring, a resilient sheet metal ring fitted within said body and spaced therefrom to form a socket, the lower portion of said ring being bent outward to form a broad hand-hold and being turned up over said wire ring for reinforcement thereby, and a removable sieve disk comprising a wire screen gripped at its edges between the folds of a sheet metal

hoop, said hoop being adapted to enter the socket between said annular ring and the body of the riddle and be gripped thereby to removably hold said screen in place.

9. In a foundry riddle, the combination of a sheet metal body of uniform diameter from top to bottom and reinforced by a pair of wire rings held in beads, a resilient ring having its top edge doubled back for reinforcement and having its lower edge bent outward, as an annular flange and turned upward over one of said reinforcing rings and affording a broad hand-hold at the lower edge of the riddle, said resilient ring being spaced from the body to form a socket, a double hoop consisting of a single metal sheet folded on itself and a removable sieve disk consisting of wire mesh gripped at its edge between the folds of said hoop, said hoop being adapted to slide down through said body and fit into the socket between the resilient ring and the lower portion of the riddle body and having inwardly projecting annular flanges lying respectively above and below the wire screen whereby the ring may be driven into or out of its socket when renewals of the sieve disk are to be made.

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

EDWARD WELLS BEACH.

Witnesses:

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