Sept. 2, 1930. C. H. REEDER 1,774,668

WEB FORMING ATTACHMENT FOR FOUNDRY PATTERNS AND THE LIKE

Filed May 31, 1929

Fig. 1.

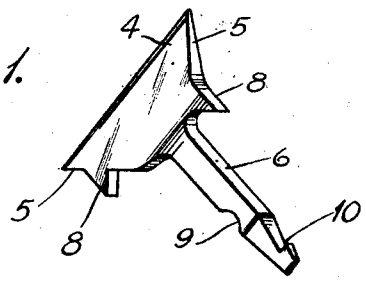


Fig. 3.

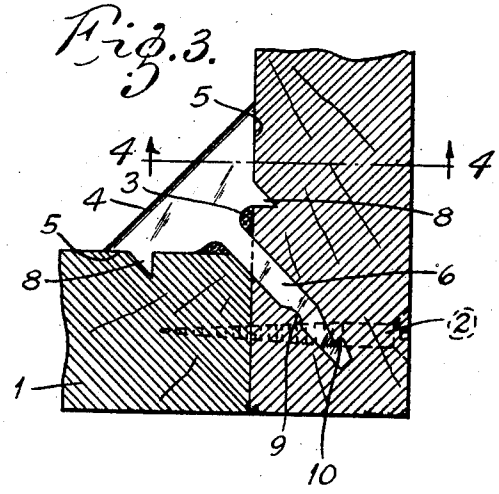


Fig. 2.

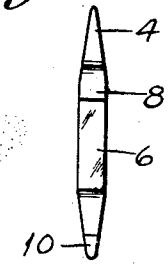
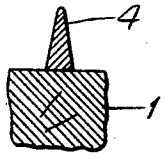


Fig. 4.



INVENTOR:
C. H. REEDER

BY Albert J. McCauley

ATTORNEY.

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UNITED STATES PATENT OFFICE

CHARLES H. REEDER, OF ST. LOUIS, MISSOURI

WEB-FORMING ATTACHMENT FOR FOUNDRY PATTERNS AND THE LIKE

Application filed May 31, 1929. Serial No. 367,190.

This invention relates to web-forming attachments for foundry patterns and the like, adapted to be associated with a pattern, or core box, to form impressions in the molding sand, such impressions forming webs in the casting which is ultimately produced by pouring molten metal into the mold.

Attachments of this kind are known to the trade as cracking strips and chill ribs. When in service, they are subjected to stresses tending to loosen and displace them in the pattern or core box. This is especially true during the ramming operation when the sand is very forcibly rammed onto the edge and both sides of the web-forming wings.

A large pattern or core box requires the use of numerous web-forming wings, and some pattern shops install such wings at the rate of several hundred per day. The wings must be accurately located and securely held in their predetermined positions. Therefore, it is very advantageous to quickly install the wings in the pattern, and most important to so secure them that they will not become loose or be displaced by the severe stresses to which they are subjected.

An object of the invention is to produce a simple device of this kind including a wing having a stem, or prong, adapted to be driven into a pattern to secure the wing, and also having an extremely simple means to positively prevent displacement of the wing.

I will hereafter refer to anchoring means on the stem whereby it is securely held in the pattern, and means on the wing adapted to enter into the pattern, so as to prevent rotary displacement of the wing. These elements are easily and quickly located in the pattern by merely driving the device into the pattern, and when so located they very firmly secure the wing and prevent displacement in any direction.

Fig. 1 is a perspective view of a web-forming attachment embodying the features of this invention.

Fig. 2 is an edge view of the same.

Fig. 3 is a view showing the attachment anchored in a pattern.

Fig. 4 is a section on the line 4—4 in Fig. 3.

To illustrate one form of the invention, I have shown in Fig. 3 a portion of a foundry pattern, or core box, made of wood and including wall members 1 located at an angle to each other and united by a screw 2. A fillet 3 is arranged in the corner formed at the junction of these wall members, said fillet being of the ordinary type usually made of leather, or similar material, and glued or otherwise secured in place.

The attachment shown in the drawings comprises a web-forming wing 4 preferably made of metal, said wing being wedge-shaped so that it can be readily drawn from the molding sand. This wing has edge faces 5 formed at an angle to each other to seat against the wall members 1, as shown in Fig. 3.

A stem, or prong, 6 extends from the wing 4 and passes through the fillet 3 and into the pattern or core box formed by the members 1. This prong 6 is preferably integral with the wing 4. It may be rectangular in cross-section and provided with a tapered end as shown in Fig. 1, so the device can be easily driven into a wooden pattern or core box.

In actual practice, a large number of these attachments are often applied to a single pattern, and it is convenient to first bore relatively small and shallow holes at the desired locations, and to then drive the prong 6 of one of the attachments into each hole. This driving operation can be easily performed by hammering the wing 4 to firmly seat its edge faces 5 on the wall members 1.

I will now refer to the means for preventing displacement of the attachment.

The service stresses, especially the severe ramming operations at opposite sides of the wing 4, tend to cause a rotary or pivotal displacement around the axis of the prong 6, and also tend to loosen the attachment in the wooden pattern.

As an illustration of a means to prevent the rotary or pivotal displacement, I have shown a short sharp prong 8 formed integral with and extending from each of the edge faces 5, but it is to be understood that the desired result may be accomplished by one or any desired number of prongs. In some cases the space to receive such prongs is limited by conditions in the pattern or core

box, so I have shown them located at different distances from the main prong or stem 6. The outer faces of the prongs 8 may be parallel with the main prong 6, and all of these prongs are driven into the pattern by merely striking hammer blows or otherwise exerting pressure on the wing 4.

Another feature of the present invention lies in a means for anchoring the prong 6 in the pattern or core box. To illustrate this I have shown an anchoring abutment formed by a wall of a notch 9 in one edge of the prong 6 to receive a portion of the wood into which the prong is driven.

I have also shown, in the opposite edge of said prong, an anchoring hook 10, said hook being at the wedge-shaped end of the prong, while the notch 9 lies between said end and the wing 4. The hook 10 is produced by a recess and an abrupt shoulder at the bottom of said recess, as shown in Figures 1 and 3. Each of the elements 9 and 10 provides an anchoring abutment to retain the prong 6 in the pattern.

There is an obvious advantage in using the anchoring abutment alone to prevent longitudinal displacement of the stem or prong 6, and another independent advantage in the auxiliary prongs 8 which prevent rotary displacement of the wing 4. The invention includes each of these separate features, in addition to the combination wherein the anchoring means on the main prong 6 cooperates with the wing 4 to retain the auxiliary prongs 8 in their operative positions.

In the preferred form of the invention all of these results are most effectively accomplished by an extremely simple and inexpensive device made of a single piece of metal, and adapted to be very quickly installed by an ordinary workman, without requiring the services of a skilled pattern maker.

I claim:

1. In a web-forming attachment for foundry patterns and the like, a web-forming wing having a fastening prong united therewith and adapted to be driven into a pattern to secure said wing to the pattern, and another prong extending from said wing and adapted to be driven into the pattern to prevent rotary displacement of said wing.

2. In a web-forming attachment for foundry patterns and the like. a web-forming wing having a fastening prong united therewith and adapted to be driven into a pattern to secure said wing to the pattern, and another prong extending from said wing and adapted to be driven into the pattern to prevent rotary displacement of said wing, said prongs being integral with said wing.

3. In a web-forming attachment for foundry patterns and the like, a web-forming having an attaching stem adapted to be forced into a pattern to secure said wing to the pattern, said wing having edge faces at an angle to each other adapted to engage the pattern, and a prong extending from one of said edge faces adapted to be forced into the pattern to prevent rotary displacement of said wing.

4. In a web-forming attachment for foundry patterns and the like, a web-forming wing having a stem adapted to be forced into a pattern to secure said wing to the pattern, said wing having edge faces at an angle to each other adapted to engage the pattern, and prongs extending said edge faces and adapted to be driven into the pattern to prevent rotary displacement of said wing, said prongs being located at different distances from said stem.

5. In a foundary pattern, or the like, wall members located at an angle to each other to form a corner, and a web-forming wing having a stem driven into said corner to secure the wing, said wing having edge faces at an angle to each other contacting with said wall members, and one of said edge faces being provided with a prong extending into one of said wall members to prevent rotation of said wing.

6. In a web-forming attachment for foundry patterns and the like, a web-forming wing having a fastening prong united therewith and adapted to be driven into a pattern to secure said wing to the pattern, said prong having an anchoring abutment whereby it is retained in the pattern.

7. In a web-forming attachment for foundry patterns and the like, a web-forming wing having a fastening prong united therewith and adapted to be driven into a pattern to secure said wing to the pattern, said prong having a notch and an anchoring abutment forming a wall of said notch and adapted to retain the prong in the pattern.

8. In a web-forming attachment for foundry patterns and the like, a web-forming wing having a fastening prong united therewith and adapted to be driven into a pattern to secure said wing to the pattern, said prong having a wedge-shaped end portion and an anchoring hook in one edge of said end portion, the opposite edge of said prong being provided with a recess at a point between said wing and the wedge-shaped portion.

9. In a web-forming attachment for foundry patterns and the like, a web-forming wing having a fastening prong united therewith and adapted to be driven into a pattern to secure said wing to the pattern, said prong having an anchoring abutment whereby it is retained in the pattern, and said wing being provided with another prong extending from one of its edges and adapted to be driven into the pattern to prevent rotary displacement of said wing.

In testimony that I claim the foregoing I hereunto affix my signature.

CHARLES H. REEDER.