

Aug. 14, 1928.

F. R. CRAIG ET AL

1,680,502

MAGNETIC PATTERN

Filed Dec. 11, 1926

2 Sheets-Sheet 1

Fig. 1

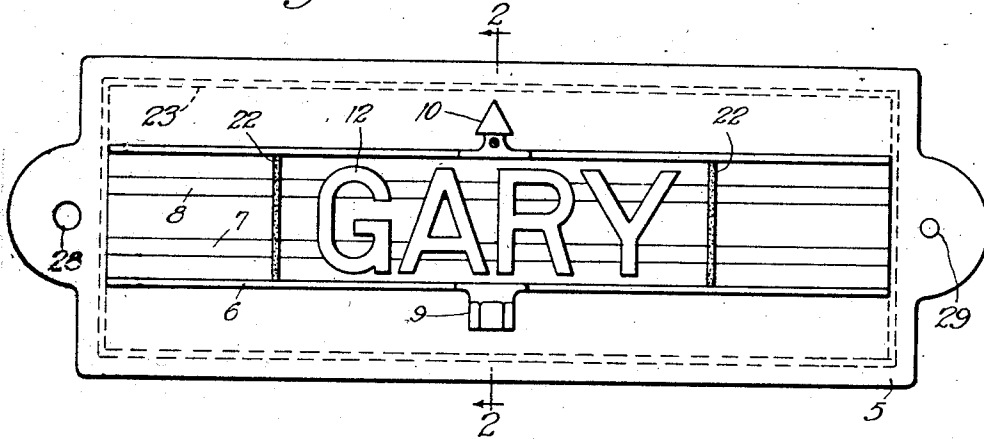
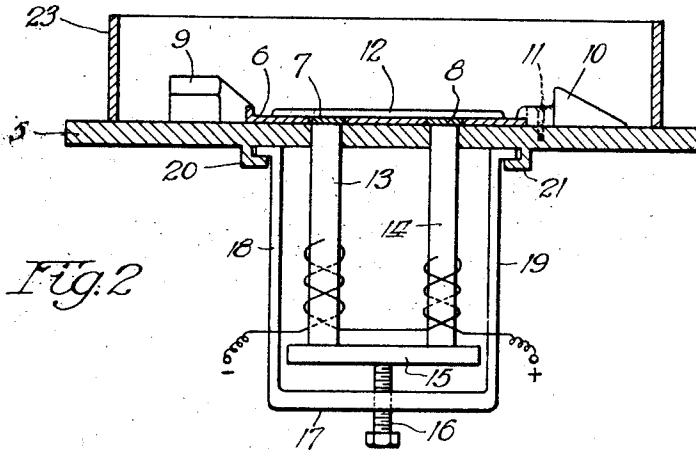


Fig. 2

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Fig. 3

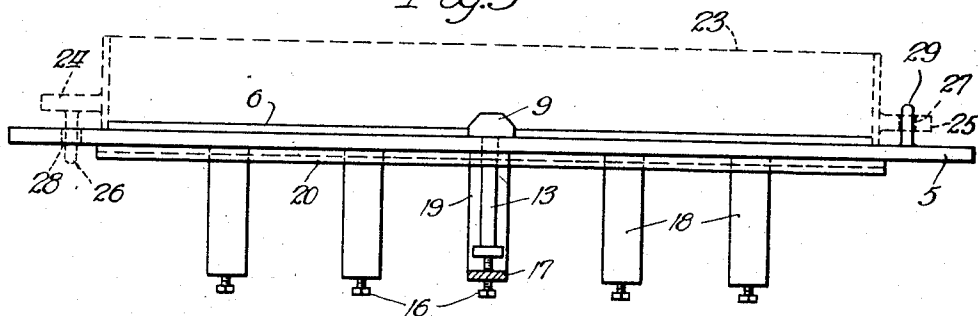
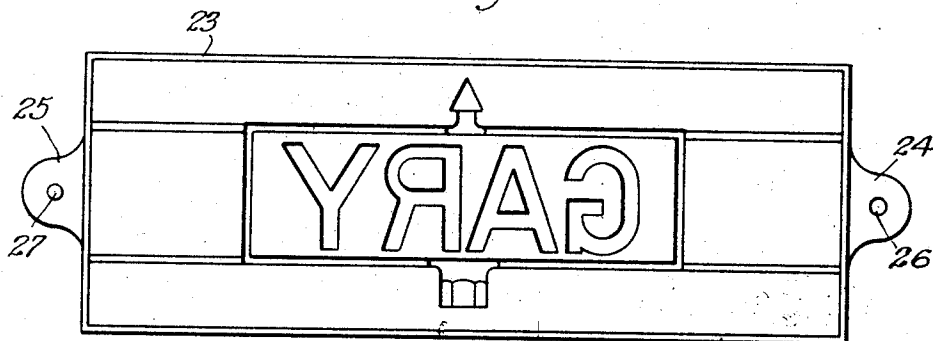


Fig. 4



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UNITED STATES PATENT OFFICE.

FINIS R. CRAIG AND JOHN J. OLING, OF HARVEY, ILLINOIS, ASSIGNORS TO PRODUCTION PATTERN COMPANY, OF HARVEY, ILLINOIS, A CORPORATION OF ILLINOIS.

MAGNETIC PATTERN.

Application filed December 11, 1926. Serial No. 154,177.

Our invention relates to a magnetic pattern and a method of using the same, particularly in the molding of signs, such as street signs and the like.

One object of our invention is to provide a pattern which may be permanently mounted on a molding plate and have the portions which need to be changed for different pieces of work readily detachable therefrom so that the pattern itself may be quickly changed to form different types of signs.

Another object of our invention is to provide means by which the movable parts of this pattern, after being adjusted to the proper position, will be held rigidly in place so that they will not be knocked out of place by ramming the sand down around the pattern in the mold flask.

Another object of our invention is to provide a pattern of the above character, together with a method of using the same whereby it is only necessary to provide a single half-section pattern to form a mold for a complete sign having legend characters on the opposite sides thereof.

Other objects and advantages will appear as the description proceeds, when taken in connection with the accompanying drawings. However, we wish it to be distinctly understood that we do not intend to limit ourselves to the exact details shown and described, but that we intend to avail ourselves of all such modifications as would occur to one skilled in the art and would fall within the scope of the claims.

In the drawings:—

Fig. 1 is a plan view of our improved pattern;

Fig. 2 is an enlarged sectional view on the line 2—2 of Fig. 1;

Fig. 3 is a side view of the pattern and the support therefor; and

Fig. 4 is a plan view of an inverted mold flask showing the impression left by our pattern in the sand of the flask.

Referring now in detail to the drawings, the numeral 5 represents a base plate which may be supported in any suitable manner, and which is preferably constructed of some non-magnetic material. Secured on top of the base plate is the pattern member 6, which, as shown in Figs. 1 and 2, extends

substantially the full length of the base plate and has raised top and bottom rim portions to form the outline of the sign. Extending lengthwise of the member 6, which is preferably of non-magnetic material, are the two bars 7 and 8 of magnetic iron. These bars, as shown in Fig. 2, are of the same thickness as the member 6 and have the top and bottom faces thereof exposed. Centrally of the member 6 are the supporting member 9, which is preferably formed integrally therewith, and the top member 10 for the sign.

Sometimes in making the signs it is preferable to make a sign plate with a supporting member as at 9 and a socket member at the place shown as occupied by 10. For this reason the member 10 is made detachable and is held against the base plate 5 by means of a screw 11, so that it may be taken off and other members applied.

The legend members of the sign are indicated by the numeral 12, and are also formed of magnetic iron so that they may be attracted by the iron bars 7 and 8. Means are provided whereby the bars 7 and 8 may be magnetized. This means consists of electro-magnets having the cores 13 and 14 projecting upwardly through the plate 5 into engagement with the bars 7 and 8. These cores are connected at their lower ends by the cross piece 15 and are wound, as shown diagrammatically in Fig. 2, so as to have an opposite polarity at their upper ends. The windings for the two magnets are preferably in series, and may be connected to any suitable source of electric power. It is obvious that an electro-magnet is not the only type that could be used for this purpose, but if permanent magnets were used they would necessarily have to be recharged at intervals, and are therefore not so well adapted for this use as the electro-magnet shown.

Cross bar 15 forces the cores 13 and 14 upwardly against the iron bars in the pattern, and these cores are adjustably supported by a screw 16 in the horizontal portion of the U-shaped member 17, the legs 18 and 19 of which extend upwardly and are secured in the brackets 20 and 21 depending from the base plate 5. With this structure, it is apparent that the core members 13 and 14 may

be properly adjusted at all times so as to hold them against the iron bars 7 and 8, or if desired to replace them, they may be lowered and removed endwise from the base plate.

The legend characters 12 in the building up of the pattern are preferably arranged from the center line of the member 6 outwardly toward each end, the characters being equally spaced on opposite sides of the center line so that the number of characters in a name will determine the length of the sign. In order to cut off the pattern at the opposite ends of the legend construction, we provide the sand core members 22, which are spaced equally from the opposite ends of the legend so that their distance from the center of the member 6 may be the same. This is highly important in the proper use of this pattern, as will presently appear.

After the pattern has been built up to its complete form, the molding flask 23 is placed over the pattern and filled with sand. This flask has the projecting ears 24 and 25 at opposite ends thereof, the ear 24 being provided with a pin 26 adapted to engage an opening 28 in the end of the plate 5, and the ear 25 is provided with an opening 27 through which the pin 29 projecting upwardly from the plate 5 extends. Thus it will be seen that the mold flask is always properly positioned with respect to the pattern.

The flask is now filled with sand and the sand rammed down in any suitable manner, by a suitable means, which is not shown here, since it forms no part of our invention. After the sand has been rammed down, the base plate is vibrated by a suitable vibration (not shown) to loosen the sand and the flask is removed, and upon being turned over endwise presents the appearance shown in Fig. 4, wherein the impression of our improved pattern is illustrated. This mold, therefore, forms one-half of the complete mold for a sign.

Now, in order to form the other half of the mold, we leave the pattern in the same position and apply a second flask in the same manner as the first, and this flask, after ramming down the sand, is removed from the pattern, but is not turned wrong side up. It is simply placed on the first flask so that the pin thereon will engage the opening in the ear provided in the first flask removed, and the opening in the opposite end from the pin will be engaged by the pin removed with the first flask.

Thus it will be seen that by this placing of the flasks the legend characters in the second mold now read in the opposite direction to what those provided in the first mold do, and when the two molds are placed together a complete mold for the sign results, and since the two half molds are made from

the same pattern and were centered with respect to the flasks, they will coincide, and when filled with the molten metal a finished sign having the raised characters on opposite sides thereof will be formed.

It is thought that the above description of the structure and the operation of our device will make it clear, and from this description it will be seen that we have provided a magnetic pattern which may be permanently mounted on a base plate and have the movable parts thereof interchanged readily to form any desired legend without in any way necessitating a complete change of pattern. Furthermore, with the method of using this pattern as set out above, it is possible to form a complete mold with only half a pattern as patterns are generally understood, since we perform by manipulation of the pattern characters and the mold flasks a certain operation whereby the single half pattern may form an impression in two flasks and these two impressions placed together form the mold.

Having thus described our invention, what we claim and desire to secure by Letters Patent is:

1. A magnetic pattern device for forming an impression in a mold comprising a body portion, having a pair of spaced bars of magnetic metal thereon, a magnet for charging said bars, and pattern parts of magnetic metal extending across said bars and held in place by the magnetic attraction of said bars.

2. A device of the character described for forming impressions in molds comprising a base plate for supporting a molding flask, a pattern body secured thereon, said body having a portion thereof of magnetic metal, electro-magnetic means for charging said magnetic metal portion, and magnetic metal pattern parts detachably held on said pattern body by said charged magnetic metal portion.

3. A device of the character described for forming impressions in molds comprising a base plate for supporting a molding flask, a pattern body rigidly secured thereon, said body having a portion thereof of magnetic metal, electro-magnetic means for charging said magnetic metal portion, and magnetic metal pattern parts detachably held on said pattern body by engagement with said charged magnetic metal portion.

4. A magnetic pattern device for forming an impression in a mold comprising a body portion, having a pair of spaced bars of magnetic metal embedded therein, electro-magnetic means for charging said bars, and pattern parts of magnetic metal extending across said bars and held in place by the magnetic attraction of said bars.

5. A device of the character described for forming impressions in molds comprising a

base plate for supporting a molding flask, a pattern body secured thereon, said body having a portion thereof of magnetic metal, magnets supported beneath said base plate
5 for charging said magnetic metal portion, and magnetic metal pattern parts detachably held on said pattern body by said charged magnetic metal portion.

6. A magnetic pattern device for forming
10 an impression in a mold comprising a body portion, having a pair of spaced bars of magnetic metal thereon, a plurality of magnets engaging said bars, and pattern parts of magnetic metal extending across said bars
15 and held in place by the magnetic attraction of said bars.

7. A device of the character described for forming impressions in molds comprising a base plate for supporting a molding flask,
20 a pattern body thereon, said body having a pair of spaced magnetic metal portions extending therethrough, electro-magnets carried by said base plate for charging said portions and pattern parts of magnetic
25 metal for completing the pattern extending over said spaced magnetic metal portions and held in place by the magnetic attraction of said portions.

8. A device of the character described for forming impressions in molds comprising a
30 base plate for supporting a molding flask, a pattern body thereon, said body having a pair of spaced magnetic metal portions extending therethrough, electro-magnets supported beneath said base plate and project-
35 ing upwardly therethrough for charging said portions and pattern parts of magnetic metal for completing the pattern extending over said spaced magnetic metal portions and held in place by the magnetic attraction
40 of said portions.

9. A magnetic sign pattern for forming an impression in a mold comprising an elongated body portion having a pair of spaced magnetic metal bars extending from
45 end to end thereof, means for magnetizing said bars and legend characters of magnetic metal each engaging both of said bars and held in place thereby to form the complete
50 pattern.

In witness whereof, we hereunto subscribe our names this 17 day of November A. D., 1926.

FINIS R. CRAIG.
JOHN J. OLING.