June 14, 1938. P. E. WHITE 2,120,451

APPARATUS FOR CASTING STEREOTYPE

Filed Aug. 19, 1936 2 Sheets-Sheet 1

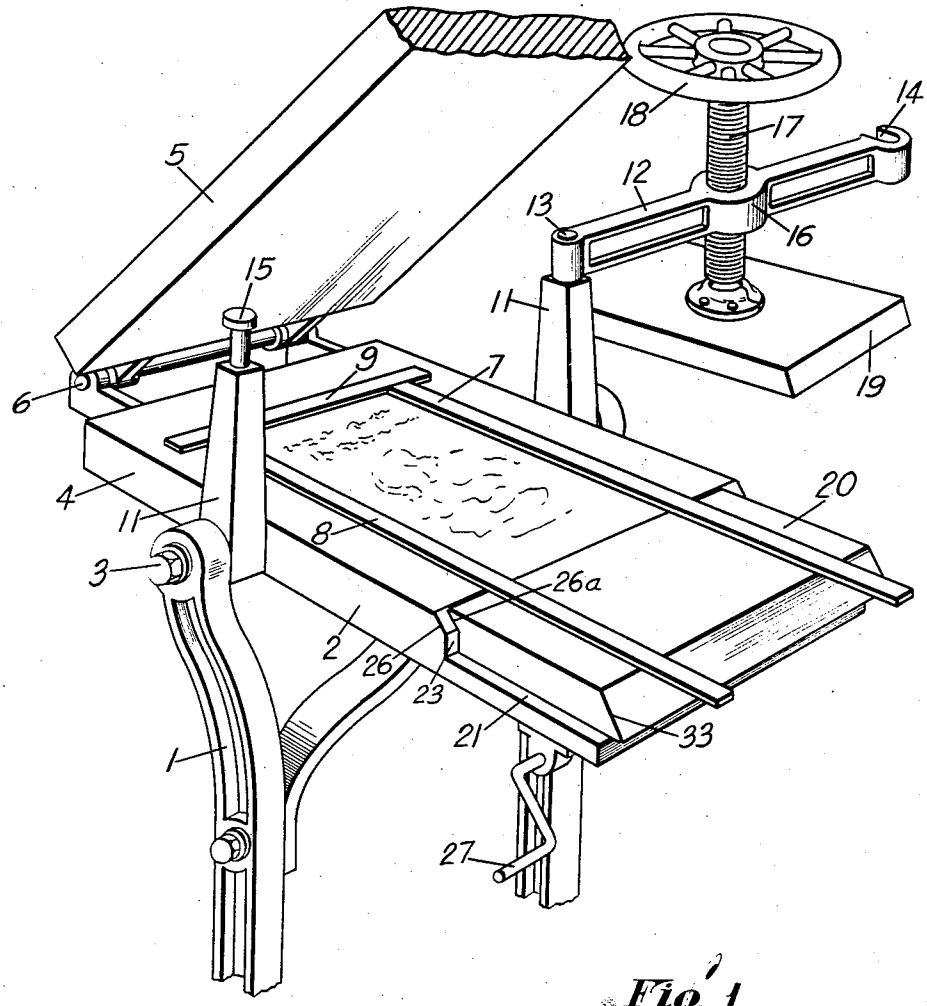


Fig. 1

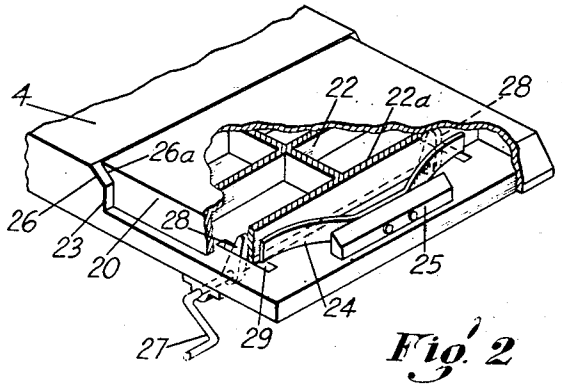


Fig. 2

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APPARATUS FOR CASTING STEREOTYPE

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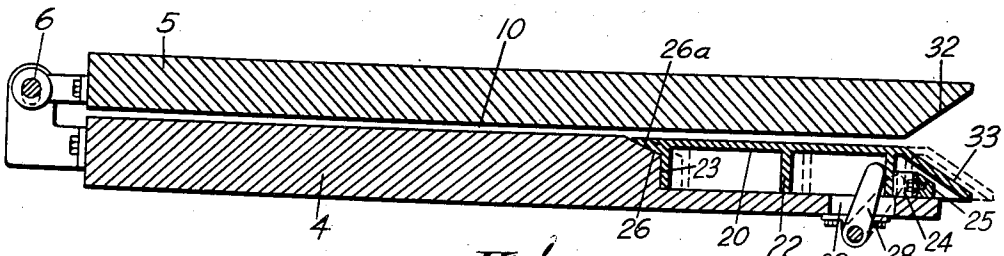


Fig. 3

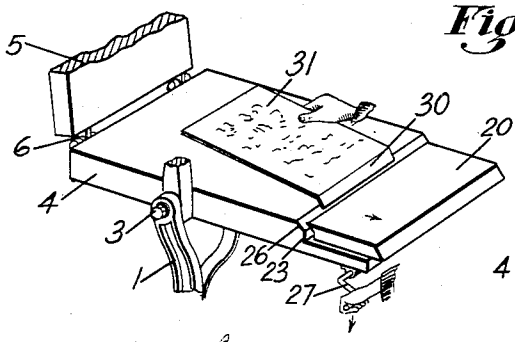


Fig. 4

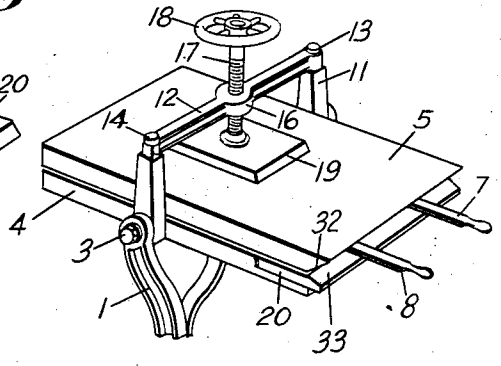


Fig. 5

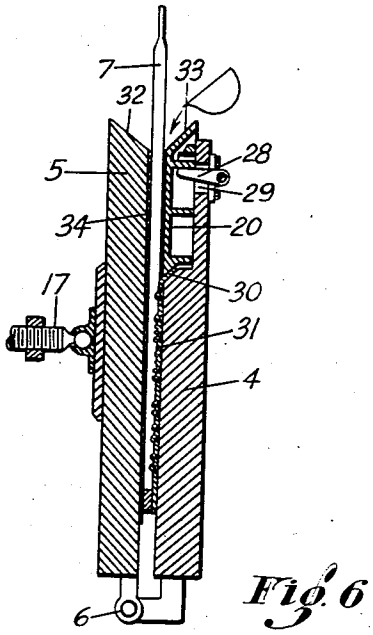


Fig. 6

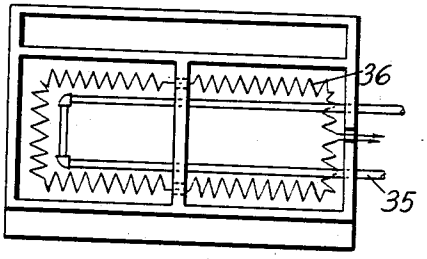


Fig. 7

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UNITED STATES PATENT OFFICE

2,120,451

APPARATUS FOR CASTING STEREOTYPE

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Application August 19, 1936, Serial No. 96,788

8 Claims. (Cl. 22—4)

My invention relates to apparatus for casting stereotype. It has to do, more particularly, with apparatus for casting stereotype which is of such a nature that the stereotype produced will be of sound quality and will be free from defects.

In casting stereotype a mat is first formed of papier-maché in the well-known manner and serves as a master in subsequently casting the stereotype. The most common method now in use to cast stereotype is to place the mat in a cast iron mold having a mold cavity formed therein. The mat serves as one of the side walls of the mold cavity. One end of the mold cavity is usually closed while the other end is open providing an inlet through which the molten metal, adapted to form a stereotype, may be poured. The mat terminates a considerable distance from the open or inlet end of the mold. It has been customary in the prior art to paste a "tail-piece" of paper to the outer edge of the mat, the paper being of such a length that it will extend from the edge of the mat outwardly through the inlet end of the mold cavity. This paper tail-piece serves to provide a pouring surface over which the molten metal poured into the mold cavity may flow onto the mat. It serves to prevent the molten metal from passing under the mat.

It is customary to make the entire mold of cast iron and the paper tail-piece contacts directly with the cast iron lying therebeneath. The moisture of the paste used in pasting the tail-piece to the mat causes buckling and unevenness of the edge of the mat to which it is attached. Also, it is difficult to attach the tail-piece to the mat and a new tail-piece must be attached to the mat for each pour. The mat on which the metal is cast is much thicker than the paper tail-piece. Also, its contact with the adjacent wall of the mold cavity is not continuous but is interrupted, and, consequently, a great multiplicity of heat insulating air cells or pockets are produced between it and the wall of the mold cavity.

In the prior art, in pouring the molten metal over the tail-piece and allowing it to pass downwardly into the mold cavity in contact with the mat certain undesirable results are produced. It is customary to completely fill the mold cavity with molten metal. The portion of the molten metal which contacts with the mat will form the stereotype proper while the portion of the molten metal adjacent the paper tail-piece at the inlet end forms a tail-piece on the stereotype casting which may be subsequently removed. It has been found in the prior art that the cast metal will solidify more quickly adjacent the part of the mold having the paper tail-piece therein. In other words there is a tendency for the metal in solidifying to shrink away from the closed end of the mold towards the inlet or open end thereof.

Apparently, this is due to the fact that the mat itself is better insulated from the wall of the mold than the paper tail-piece which is attached thereto and the mat itself has better insulating properties than the paper tail-piece. Consequently, the molten metal adjacent the mat will cool more slowly than that adjacent the paper tail-piece. Obviously, this is undesirable and results in stereotypes which are defective. It is desirable that the molten metal solidify first adjacent the closed end of the mold and that the molten metal adjacent the inlet end of the mold remain in molten form until all shrinkage cavities or "pipes" in the casting are filled with the molten metal, thereby eliminating any defects in the stereotype. In other words, it is desirable for the shrinkage to occur from the closed end of the mold towards the inlet or open end thereof so that if any shrinkage cavities or pipes are produced they will be in the tail-piece of the casting which is subsequently removed.

One of the objects of my invention is to provide apparatus for casting stereotype which is of such a nature that the stereotype castings produced will be of sound quality and will be free from defects, such as shrinkage cavities or pipes which are ordinarily produced during solidification of the casting.

Another object of my invention is to provide apparatus for casting stereotype of such a nature that it will not be necessary to employ the paper tail-piece, which in the past, of necessity, had to be attached to a mat each time a stereotype was cast.

Another object of my invention is to provide apparatus which is simple but which is very effective for the purposes for which it is intended.

In its preferred form, my invention contemplates the provision of a mold for casting stereotype which is provided with means for insuring that when the casting solidifies, shrinkage will occur from the closed end of the mold towards the inlet or open end thereof. Thus, if any shrinkage cavities or pipes are produced, they will be produced in the tail-piece of the casting formed adjacent the inlet of the mold, which tail-piece is subsequently removed from the

stereotype proper. I provide means for maintaining the stereotype metal adjacent the inlet end of the mold in molten condition until the inner portions of the casting solidify so that if any shrinkage cavities or pipes tend to form in the inner portions of the casting, this will be prevented since the molten metal adjacent the inlet end will feed inwardly into such cavities. I also provide means adjacent the inlet end of the mold cavity for clamping the edge of the mat in such a manner that there will be no danger of the molten metal running underneath such edge of the mat during the time it is being poured into the mold. This means eliminates the necessity of using a paper tail-piece each time a stereotype is cast. Furthermore, this means is of such a nature as to permit expansion or contraction of the mat without buckling.

This application is a continuation in part of my application Serial No. 729,457, filed June 7, 1934.

The preferred embodiment of my invention is illustrated in the accompanying drawings wherein similar characters of reference designate corresponding parts and wherein:

Figure 1 is a perspective view of stereotype casting apparatus made in accordance with the principles of my invention.

Figure 2 is a perspective view, partly broken away, showing the permanent tail-piece which I provide at the inlet end of the mold.

Figure 3 is a longitudinal section taken through the mold.

Figure 4 is a view illustrating how the mat may be positioned in the mold.

Figure 5 is a perspective view illustrating the sections of the mold clamped in cooperative relation.

Figure 6 is a section showing how the molten metal may be poured into the mold.

Figure 7 is a view, more or less diagrammatic, showing how the permanent tail-piece of the mold may be provided with heating and cooling means.

In the accompanying drawings I have illustrated one form which my stereotype casting apparatus may take. With reference to Figure 1, I have shown the apparatus as comprising a vertically disposed standard 1 having a mold indicated generally by the numeral 2 pivoted thereto as at 3. The mold may be swung on the standard between the position illustrated in Figure 1, where it is substantially horizontal, and a vertical position.

The mold 2 is preferably made mainly of cast iron. It embodies a cast iron plate 4 and a cast iron plate 5 which are hinged together adjacent one end as at 6. The plates 4 and 5 may be swung together into cooperative relation, as illustrated in Figure 3, or may be swung apart, as illustrated in Figure 1. When they are in cooperative relation a frame, indicated in Figure 1, is adapted to be disposed therebetween. This frame embodies longitudinally extending bars 7 and 8 and a transversely extending bar 9. All of these bars are flat and the bars 7 and 8 may be adjusted towards and from each other.

When the plates 4 and 5 are swung together, as indicated in Figure 3, a mold cavity 10 is formed therebetween. The edges of this cavity are defined by the bars 7, 8 and 9 which are clamped between the plates 4 and 5. These bars also determine the thickness of the cavity. If it is desired to change the width of the mold cavity, the bars 7 and 8 are adjusted towards or away from each other. If it is desired to change the length of the mold cavity the bars 7 and 8 together with the bar 9 are moved longitudinally of the mold cavity so that the bar 9, which forms the bottom of the cavity, will be disposed at different locations along the plates 4 and 5. However, the bars 7 and 8 always project past the ends of the plates 4 and 5 opposite to the ends where they are hinged together. This end of the mold cavity is open and serves as the inlet end.

In order to clamp the plates 4 and 5 together and the frame formed by bars 7, 8 and 9 therebetween, I provide the structure illustrated best in Figures 1 and 5. The plate 4 is provided with a pair of posts 11 disposed at opposite edges thereof and being in alignment with each other. These posts are rigidly connected to the plate 4. One of the posts has an arm 12 pivoted to the upper end thereof as at 13. The free end of the arm 12 has an open-ended slot 14 adapted to cooperate with an upwardly projecting pin 15 on the other post 11. The arm 12 intermediate its ends has a threaded sleeve 16 formed thereon through which a screw 17 passes. This screw 17 has a handwheel 18 keyed on its upper end. Its lower end is pivotally connected to a plate 19.

It will be apparent from Figure 1 that when the arm 12 is swung to one side about the pivot point 13, the plate 5 may be swung away from the plate 4. In order to clamp these plates together after they are swung into cooperative relationship, as indicated in Figure 5, the arm 12 is swung over the plate 5 until the pin 15 is positioned in the slot 14 in the end of the arm. The plate 19 will then be disposed above the plate 5. By rotating the handwheel 18 in the proper direction, the screw 17 will thread downwardly through the sleeve 16 forcing the plate 19 in firm contact with the plate 5 and, consequently, clamping the plates 4 and 5 firmly together and the frame, formed by bars 7, 8 and 9, firmly therebetween.

In order to eliminate the need of pasting a paper tail-piece to the upper edge of the mat, I provide a permanent tail-piece indicated by the numeral 20. This tail-piece is slidably mounted on the plate 4 in a suitable manner at the end thereof disposed at the inlet end of the mold cavity. The plate 4 is cut away as at 21 to receive the tail-piece 20. The tail-piece is of hollow construction and has a flat upper surface which is substantially flush with the upper surface of the plate 4. It is provided with a plurality of ribs 22 which reinforce it and which provide air spaces therebeneath. In cutting away the outer end of the plate 4 a shoulder 23 is formed. The tail-piece 20 is normally held against this shoulder by means of a flat spring 24 secured to the plate 4 as at 25 and having its free ends bearing against a transversely extending rib 22*a* of the tail-piece. The upper portion of the shoulder 23 is bevelled towards the inner end of plate 4 as at 26. The adjacent edge of the tail-piece 20 is provided with a correspondingly bevelled surface 26*a* which cooperates therewith. One edge of the mat is adapted to be clamped between the surface 26 and the bevelled surface 26*a* on the tail-piece, as will later appear.

In order to move the surfaces 26 and 26*a* apart to permit insertion of the edge of the mat, I provide the structure illustrated best in Figure 2. This structure embodies a crank member 27 rotatably mounted beneath the plate 4 and being disposed directly below the tail-piece. This crank 27 has a pair of fingers 28 keyed thereto which

project upwardly through slots 29 formed in the plate 4. These fingers 28 are adapted to contact with the rib 22a with which the spring 24 contacts. It will be apparent that the crank 27 may be rotated in such a manner that the upper ends of the fingers 28 will press against the rib 22a and will overcome the resistance of the spring 24, moving the tail-piece 20 away from the shoulder 23 and, consequently, providing a space between bevelled surfaces 26 and 26a which permits insertion of the edge of the mat. As soon as the crank 27 is released, the spring 24 will force the tail-piece 20 towards the shoulder 23 and cause the surfaces 26 and 26a to clamp the edge of the mat therebetween. Other means may be provided for holding the tail-piece in clamping relation to the mat or for moving it to permit removal of the mat.

In using this apparatus the mat 31 is formed in the usual manner. However, its outer edge is bent at an angle as indicated at 30 in Figure 4. The plate 5 is swung upwardly and the mat 31 is then laid on the upper surface of the plate 4, it being understood that the plate 4 is in horizontal position at this time. The turned edge 30 is inserted between the bevelled surfaces 26 and 26a by moving the tail-piece 20 in the direction of the arrow by the crank 27 as illustrated in Figure 4. The crank is then released and the turned edge 30 is gripped between the surfaces 26 and 26a. The frame, formed by bars 7, 8 and 9, is then superimposed on the plate 4 and is adjusted so that it will be of the proper size to rest on the three remaining edges of the mat and to clamp such edges against the plate 4. Thus, all the edges of the mat will be firmly clamped to the plate 4 so that there will be no danger of buckling or distortion of the edges of the mat.

The plate 5 is then swung down into operative position where it will rest on the bars 7, 8 and 9. The clamping means carried by the arm 12 is then swung over the plate 5 and the handwheel 18 is operated to cause the plates 4 and 5 to be firmly clamped together and the frame, formed by bars 7, 8 and 9, to be firmly clamped therebetween. The mold cavity 10 formed between the plates 4 and 5 will have its bottom edge closed by the bar 9 and its side edges closed by the bars 7 and 8. The upper end of the mold cavity will be open to permit pouring of the molten metal therein. In order to facilitate pouring of the metal into the mold cavity, the plate 5 is bevelled as at 32 and the tail-piece 20 is bevelled as at 33 to form a V-shaped pouring inlet at the inlet end of the mold cavity which serves to guide the molten metal into the mold cavity.

The entire mold after the mat 31 is positioned therein, as indicated, may be swung into vertical position about the pivot point 3. The mold will then be vertically disposed as illustrated in Figure 6. The molten metal may then be poured through the inlet end thereof into the mold cavity in order to form the stereotype casting. In pouring the metal it is preferably poured over the tail-piece 20. It will flow down over the tail-piece and past the joint between the surfaces 26 and 26a and because these surfaces are bevelled downwardly and inwardly, the molten metal will not tend to enter this joint and it will be impossible for it to run under the upper edge of the mat. The portion of the molten metal directly adjacent the mat will form the stereotype proper. However, the mold is preferably filled with molten metal to the top so that a tail-piece will be formed on the casting. This tail-piece is subsequently removed. It is preferable to employ a sheet of cardboard 34 which prevents the molten metal from contacting directly with the plate 5, as illustrated in Figure 6. This sheet of cardboard is clamped in position by the frame formed of bars 7, 8 and 9. It prevents the molten metal from contacting with any portions of the inner surface of the plate 5.

The fact that the surfaces 26 and 26a are bevelled as indicated has another advantage. When the molten metal is poured over the mat it tends to cause expansion thereof. Because the bevelled surfaces 26 and 26a are provided, the mat can expand upwardly along these surfaces. This would not be permitted if the surfaces 26 and 26a were at right angles to the inner surface of plate 4. Furthermore, because the mat is bent at an obtuse angle rather than a right angle, there will be no danger of cracking the mat. Thus, I provide means at the upper end of the mat for gripping the upper edge of the mat in such a manner that expansion or contraction of the mat is permitted. The thickness of the tail-piece 20 is slightly less than the depth of the cut-away portion 21 of plate 4. In other words, the surface of tail-piece 20 will be slightly below the corresponding surface of plate 4. Thus, the outer ends of bars 7 and 8 will not contact firmly with the surface of tail-piece 20 but will be spaced slightly therefrom. However, these spaces will be insufficient to permit escape of any appreciable amount of molten metal. Consequently, when the upper end of the mat expands it can move the tail-piece slightly, against the force of spring 24, relative to plate 4.

As previously indicated, it is desirable to control the shrinkage of the stereotype casting in such a manner that shrinkage will occur from the closed or lower end of the mold towards the open or inlet end thereof. In other words, it is desirable for the metal in the lower end of the mold to solidify more quickly than the metal in the upper end thereof. In order to accomplish this I provide means for maintaining the stereotype metal adjacent the inlet end of the mold in molten condition until the inner or lower portions of the casting solidify, so that if any shrinkage cavities or pipes tend to form in the inner or lower portions of the casting, this will be prevented since the molten metal adjacent the inlet end will feed inwardly or downwardly into such cavities.

To accomplish this I prefer that the tail-piece 20 be made of aluminum alloy. As previously stated, the tail-piece is preferably hollow and embodies a main upper plate and a plurality of supporting ribs disposed therebeneath which will prevent warping of the tail piece and will also serve to provide air spaces beneath the tail-piece. The aluminum alloy tail-piece preferably extends the entire width of the mold so that any metal poured therein will pass over it. The metal in the tail-piece is preferably about ¾ of an inch in thickness. It is preferable to use comparatively thin sections of aluminum in the tail-piece so that it will heat up quickly.

The tail-piece is preferably preliminarily heated slightly in order to prevent sudden chilling of the molten metal when poured in contact therewith by making at least one pour and removing the casting, the casting being discarded. The tail-piece could be preliminarily heated in other ways, for example, by an electric heater. This will heat the aluminum tail-piece sufficiently to prevent

sudden chilling of the molten metal when subsequently poured therein. Of course the tail-piece need not be heated preliminarily to a very high temperature and this temperature should always be much lower than the melting point of the stereotype metal. It is merely necessary to preliminarily heat the tail-piece sufficiently to prevent sudden chilling of the molten metal sufficiently when it contacts therewith as to cause cold-shuts to be produced in the coating. The molten metal which forms the stereotype is then poured into the mold. In pouring the metal into the mold it is poured over the tail-piece **20** so that it contacts therewith as it enters the mold cavity. Since the tail-piece **20** is made of aluminum, it will quickly absorb some of the heat from the molten metal passing thereover. Thus, some of the heat will be removed from the initially poured molten metal during its passage over the tail-piece **20**. The tail-piece **20** will gradually become hotter and hotter as the molten metal is poured thereover during its passage into the mold cavity. Obviously, because of this, the molten metal which first passes over the tail-piece and finally reaches the lowermost end of the mold, will be cooled by passage over the tail-piece to a greater extent than the molten metal which later passes over the tail-piece after the temperature of the tail-piece has risen. Thus, the mere passage of the molten metal over the aluminum tail-piece serves to cool that part of the metal which finally flows into the lowermost part of the mold to a greater extent than that part of the molten metal which will finally be in the upper part of the mold.

The pouring operation is continued until the mold cavity is completely filled. However, during the entire pouring operation the aluminum tail-piece, because of its high conductivity and predetermined thickness, continues to absorb heat from the molten metal, becoming hotter and hotter until it finally reaches a temperature corresponding substantially to the temperature of the molten stereotype metal which is usually from about 500 to 700 degrees F. Thus, the aluminum tail-piece will at about the time the pouring operation is completed have a temperature greater than the melting point of the stereotype metal which is usually from 475 to 485 degrees F. During the pouring operation, the metal which has already reached the lower portions of the mold cavity continues to cool while the aluminum tail-piece continues to be heated by the molten metal being poured into the mold. By the time the pouring is completed, the aluminum tail-piece is hot enough to maintain the molten metal directly adjacent thereto in a molten state until the metal in the lower portion of the mold has solidified.

I prefer to use aluminum because it is a good conductor of heat and, consequently, absorbs the heat quickly. Although it will not hold the heat very long after pouring is completed, it holds it for a sufficient length of time to prevent solidifying of the molten metal directly adjacent thereto before the metal in contact with the mat in the lower portion of the mold solidifies. It is not necessary for the tail-piece to remain at a high temperature for a very long period after the pouring operation is completed, since the stereotype metal solidifies quickly, for example in about 45 to 60 seconds. Thus, the aluminum tail-piece absorbs a sufficient amount of heat during the time the metal is being poured into the mold that it will reach a high temperature, corresponding substantially to that of the molten metal and will maintain the cast metal in the upper part of the mold in a molten state for the short time necessary, after the pouring operation is completed, to permit solidifying of the metal in the lower part of the mold. This eliminates any danger of shrinkage cavities or pipes being formed in the stereotype proper since if any do tend to form therein, the metal adjacent the aluminum tail-piece which is maintained in molten condition for a suitable length of time will feed into such cavities.

After the lower portion of the stereotype casting has solidified it is desirable that the tail-piece cool quickly to a temperature below the melting point of the stereotype metal so that the metal adjacent the tail-piece will solidify and the casting may be removed. Because the tail-piece is of aluminum and because it is of thin sections of aluminum and has air spaces therebeneath, the tail-piece will cool quickly to a temperature permitting solidifying of the stereotype metal disposed adjacent thereto. As soon as the casting has solidified it may be removed and another stereotype casting may be made in the same way. It is desirable to pour the successive castings before the tail-piece cools to such an extent that it would cause sudden chilling of the molten metal when poured in contact therewith.

Although I prefer to use aluminum or aluminum alloys for the tail-piece other metals, for example copper or copper alloys, may be employed. It is merely necessary for the metal to be of such a nature that it will quickly absorb heat from the molten metal as it is poured thereover into the mold, so that when the pouring operation is completed, the tail-piece will be at such a high temperature, being substantially equal to the temperature of the molten metal, that it will maintain the metal disposed adjacent thereto in molten condition. It is necessary for the tail-piece to be of such material that it will remain at a high temperature for the short period of time necessary to permit complete solidification of the molten metal in the lower portion of the mold disposed directly adjacent the mat. However, it should be of a material that will cool quickly after the entire casting has solidified.

Thus, my invention consists in providing a tail-piece at the inlet end of the mold, heating the tail-piece during the time the molten metal is being poured into the mold to a temperature substantially that of the molten metal, so that the metal adjacent the tail-piece will solidify subsequent to the solidification of the metal in the lower portion of the mold, and then quickly cooling the tail-piece in order to permit removal of the casting. Although I prefer to use a metal of such inherent qualities that it will function in this manner, it is possible to have the tail-piece equipped with cooling or heating means or both to bring about the desired results.

It may be desirable to provide the tail-piece with cooling means if the metal used absorbs heat quickly but will not cool quickly. Thus, in Figure 7, I show the tail-piece equipped with a pipe **35** for conducting cooling fluid so that the tail-piece may be artificially cooled. Suitable means should be provided for controlling the flow of the cooling medium.

I may use a metal which will not heat very quickly. In such a case I preferably provide an electric heating element **36**, as illustrated in Fig-

ure 7, for heating the tail-piece. Suitable means should be provided for controlling the heating element. I may use a metal which will not absorb the heat quickly from the molten metal and which will not cool quickly. In such case I preferably employ both the heater 36 and the cooling means 35.

It may be desirable to provide the electric heater 36 even when the tail-piece is made of aluminum. It may be used for preliminarily heating the tail-piece to such an extent that it will not suddenly chill the molten metal sufficiently to form cold-shuts when it is poured in contact therewith.

The basic idea of my invention is to provide a tail-piece which is of such material that it will quickly absorb the heat from the molten metal during the time it is poured into the mold so that it will become sufficiently hot and remain hot for a sufficient length of time to reverse the usual order of shrinkage and will then cool quickly, or to provide artificial means for cooling or heating the tail-piece or both to bring about the same results.

I have found in actual practice that the aluminum tail-piece works very satisfactorily. By continued use for a long period of time I have definitely proven that the aluminum tail-piece functions to delay solidification of the molten metal in the upper portion of the mold until the metal in the lower portion of the mold solidifies. Thus, the usual order of shrinkage is reversed, the shrinkage occurring from the lower end of the mold towards the upper end thereof so that any pipes or shrinkage cavities which are formed will be in the tail-piece of the casting which is subsequently removed.

Having thus described my invention, what I claim is:

1. A mold for stereotype casting comprising a plate against which the mat is adapted to be clamped, said plate being provided with an inclined shoulder leading inwardly and downwardly from the pouring end of the mold, a metal tail-piece movably mounted on said plate and provided with a cooperating inclined surface adapted to overlie and engage an edge of said mat and to clamp it against said inclined shoulder, means for continuously and resiliently acting to force said tail-piece into clamping position, and means for overcoming the force of said last-named means and for forcing said tail-piece in the opposite direction to release said mat.

2. A mold for stereotype casting comprising a plate against which the mat is adapted to be clamped, said plate being provided with an inclined shoulder, and a metal tail-piece mounted on said plate and being provided with a cooperating inclined surface adapted to overlie and engage an edge of said mat and to clamp it against said inclined shoulder, said inclined shoulder and inclined surface extending in such direction as to permit expansion of the mat, said tail-piece being so mounted that it is free to move in response to expansion of the mat.

3. A mold for stereotype casting comprising a plate against which the mat is adapted to be clamped, said plate being provided with an inclined shoulder, and a metal tail-piece mounted on said plate and being provided with a cooperating surface adapted to overlie and engage an edge of said mat and to clamp it against said shoulder, said tail-piece being so mounted that it is free to move in response to expansion of the mat.

4. A mold for casting stereotype comprising a body portion having an inlet opening, said body portion being composed of cast iron, a tail-piece disposed adjacent said inlet opening over which the molten metal is poured into the mold, said tail-piece being made of aluminum or aluminum alloy.

5. A mold for casting stereotype comprising a body portion having an inlet opening, said body portion being composed of material of relatively low thermal conductivity, a tail-piece disposed adjacent said inlet opening over which the molten metal is poured into the mold, said tail-piece being made of metal having a high thermal conductivity and which is greater than the thermal conductivity of said material of which the body portion is composed.

6. A mold for casting stereotype comprising a body portion composed of a metal of low thermal conductivity and having an inlet opening, a member located adjacent said inlet opening over which the molten metal is poured into the mold, said member being of a metal of higher conductivity than the metal body portion so that it will absorb heat from the molten metal more quickly than said body portion and will quickly absorb the heat from the molten metal during the time it is poured into the mold so that it will become sufficiently hot and remain hot for a sufficient length of time to delay solidification of the molten metal in the upper portion of the mold until the metal in the lower portion of the mold solidifies.

7. A mold for casting stereotype comprising a plate against which the mat is adapted to be clamped, means for clamping the mat in position comprising a tail-piece mounted on the mold adjacent the inlet opening thereof and over which the molten metal is poured into the mold, and means besides the metal being poured for heating said tail-piece.

8. A mold for casting stereotype comprising a plate against which the mat is adapted to be clamped, means for clamping the mat in position comprising a tail-piece mounted on the mold adjacent the inlet opening thereof and over which the molten metal is poured into the mold, means besides the metal being poured for heating said tail-piece and means for cooling the tail-piece.

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