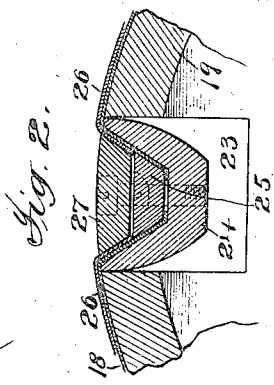
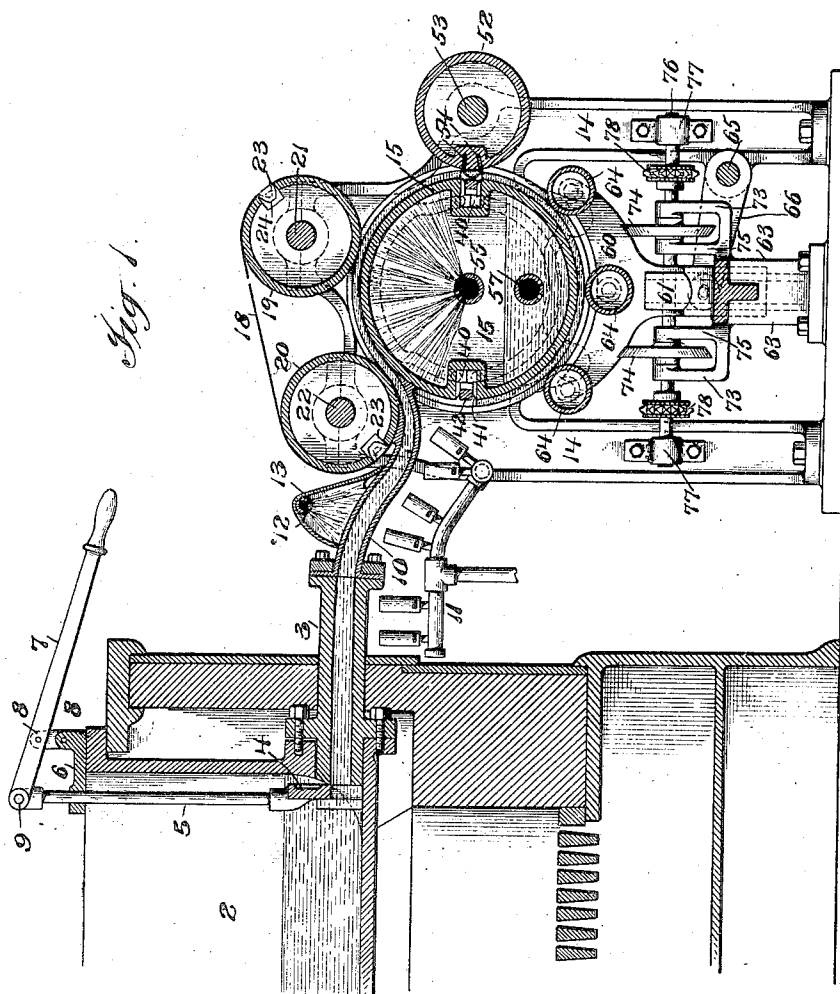


A. H. CRUSE.
MACHINE FOR CASTING PRINTING PLATES.
APPLICATION FILED MAR. 23, 1904.

932,602.

Patented Aug. 31, 1909.

3 SHEETS—SHEET 1.



Attest:
X. White
Notary

Inventor:
Amandus H. Cruse
By Philip Lange Rice Kennedy

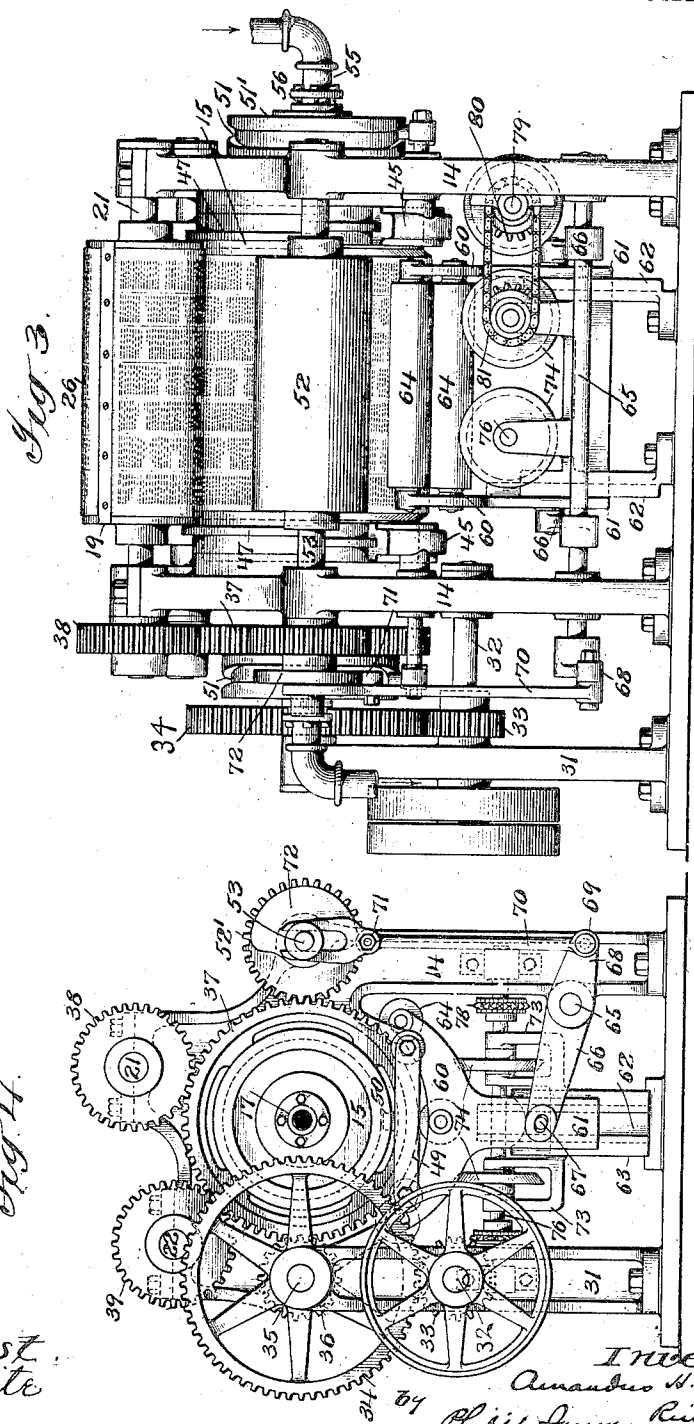
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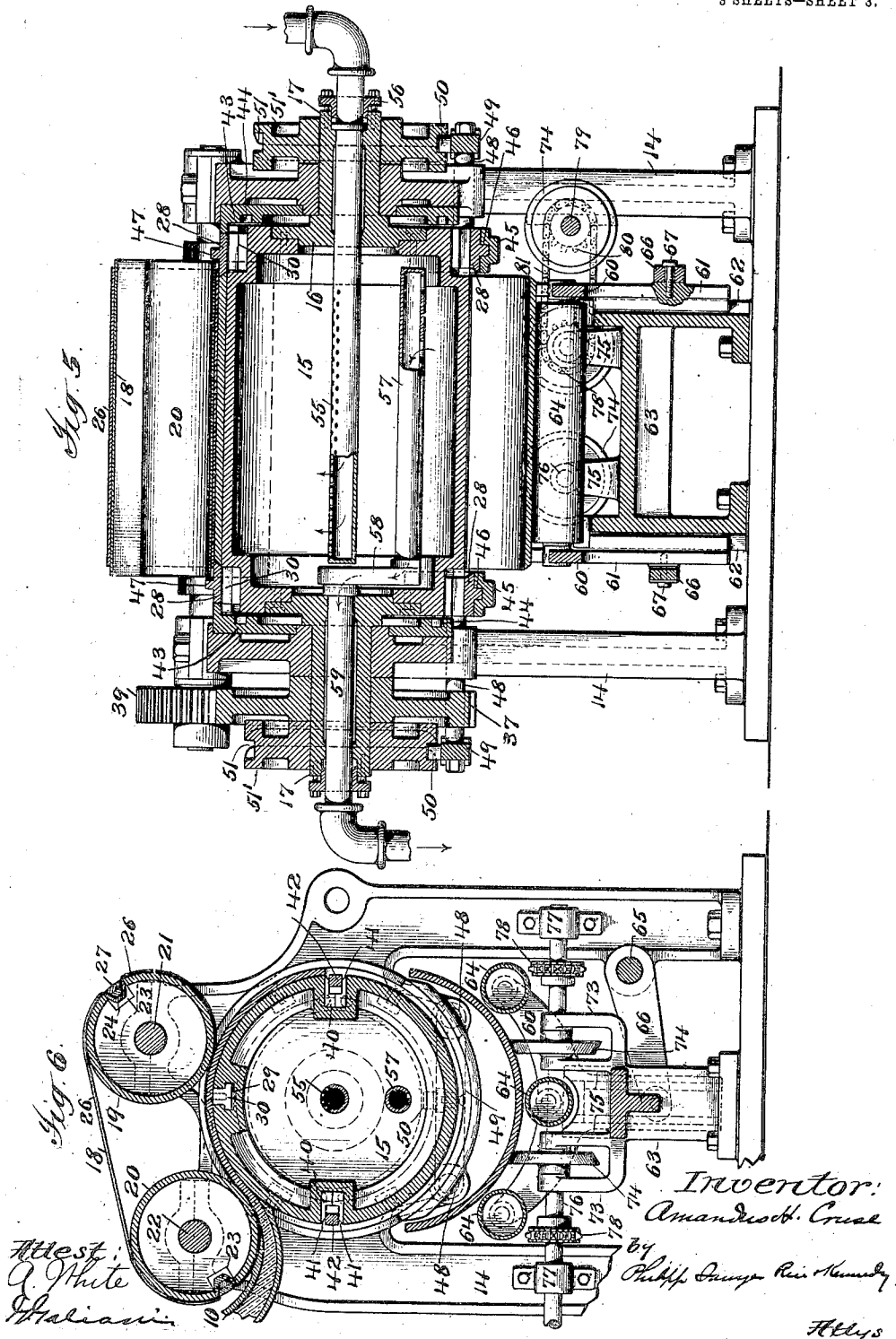
Attest
A. White
Notary Public

Inventor:
Amandus H. Cruse
Philip Dwyer Rice & Kennedy
Attys

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Patented Aug. 31, 1909.
3 SHEETS—SHEET 3.



UNITED STATES PATENT OFFICE.

AMANDUS H. CRUSE, OF NEW YORK, N. Y., ASSIGNOR TO ROBERT HOE, OF NEW YORK, N. Y.

MACHINE FOR CASTING PRINTING-PLATES.

932,602.

Specification of Letters Patent. Patented Aug. 31, 1909.

Application filed March 23, 1904. Serial No. 199,551.

To all whom it may concern:

Be it known that I, AMANDUS H. CRUSE, a citizen of the United States, residing at New York, county of Kings, and State of New York, have invented certain new and useful Improvements in Machines for Casting Printing-Plates, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

This invention relates to certain improvements in machines for casting stereotype printing plates, and has for one of its objects to produce an improved mechanism by which stereotype printing plates may be continuously cast from metal flowing from a suitable source of supply.

A further object of the invention is to produce an improved mechanism by which molten metal in continuous flow is converted into stereotype printing plates, suitable dividing mechanism being employed to separate the product between the plates.

A further object of the invention is to produce an improved machine for casting stereotype printing plates, embodying simple and efficient constructions for effecting the various steps of the operations to be performed.

With these and other objects in view, the invention consists in certain constructions, and in certain parts, improvements and combinations as will be hereinafter fully described and then specifically pointed out in the claims hereunto appended.

Referring to the accompanying drawings:—Figure 1 illustrates in sectional side elevation one form of machine embodying the invention. Fig. 2 is a detail view. Figs. 3 and 4 are side and end elevations respectively of the machine shown in Fig. 1. Fig. 5 is a longitudinal section of the construction shown in Fig. 3. Fig. 6 is a vertical section of the construction shown in Fig. 4.

In the drawings which illustrate a preferred embodiment of the invention, 1 indicates a furnace of any suitable form or construction, and 2 illustrates a melting pot. This melting pot has an outlet pipe 3 which may be secured to it in any suitable manner and which as shown is supported in one of the walls of the furnace, the outlet pipe being bolted or otherwise secured to the melting pot. This outlet pipe is controlled by a valve of any suitable form or construction. In the construction illustrated, this valve is marked 4 and is carried by a stem 5 which

passes through a perforation in an arm 6 secured to the upper wall of the pot. The valve stem is operated by a lever 7 pivoted to a link 8, this lever being pivoted to the valve stem 5 at 9.

While the outlet from the melting pot may be of any desired configuration, its delivery end should, and preferably will be, broadened so as to be practically as wide as the plate to be cast. In the construction shown, the delivery end of this outlet pipe is formed by a spout 10 which is secured to the outlet pipe by bolts or in any other suitable manner, this spout being flattened so that the molten metal is not much thicker than the plate to be cast. The delivery end of the spout may be of any suitable form, but should be so formed as to deliver the metal directly onto the surface of the cylinder.

In order that the temperature of the metal may be controlled with exactness, so that the metal will reach the casting mechanism hereinafter described in exactly the right state of fluidity, means are preferably provided for both heating and cooling the spout. In the construction shown, a heating burner 11 is shown as located under the spout and above it there is a spray 12, this spray being mounted beneath a suitable guard 13. It is apparent that the positions of this heater and spray might, if desired, be reversed, or that, under some circumstances, either or both of them might be omitted.

The mechanism for forming the molten metal into printing plates may be widely varied in its form and construction. As shown, there is provided a frame embodying standards 14 in which the several parts of the forming or casting mechanism are mounted. This mechanism, however constructed, will include forming surfaces so located with respect to each other as to afford a mold space between them, and these surfaces will be given a movement during the forming or casting operation. The configuration of these surfaces may be varied within wide limits. Preferably, however, both surfaces will be arranged to move in a curved path.

In the particular construction shown, which illustrates one embodiment of the invention, there is provided a mold forming member comprising a cylinder 15 which may be termed the mold cylinder. This mold cylinder is provided with heads 16 from which extend journals 17, these journals

passing through suitable bearings in the frame 14 before referred to. It is apparent that the cylinder heads and journals might, if desired, be integrally formed, but the construction shown is a convenient one to construct.

The surface coöperating with the mold cylinder may be, as has been indicated, varied widely in form and construction. Preferably, however, this surface embodies a flexible carrier band 18, this type of surface being advantageous where the coöperating surface is a cylinder. The carrier band 18 may be mounted and operated in any desired manner. In the preferred construction, however, and as shown, there is provided a pair of cylinders 19, 20, the cylinder 19 being mounted on a shaft 21 supported in suitable bearings in the frame and the cylinder 20 being mounted on a shaft 22 similarly supported. These cylinders are preferably so located with respect to the mold cylinder that the carrier band, which, in the particular construction illustrated, carries the matrix, will be given an upward curve, this curve being parallel to the curved surface of the cylinder and being at a distance from the cylinder equal to the thickness of the plate it is proposed to cast. In the construction shown, the carrier band is intended to carry two matrices and the band is conveniently made in two parts or sections.

The construction by which the band is operated by the cylinders around which it passes may be widely varied. As shown, however, each of the cylinders is provided with a gap 23 in which fits a clamping bar 24. Coöperating with each of these clamping bars 24 is a wedge shaped clamping bar 25, this bar being forced into engagement with the bar 24 by means of a suitable screw or screws.

The matrices which are marked 26 may be secured to the band in any desired manner. As shown there is employed a second clamping bar 27 which also coöperates with the clamping bar 24, being forced into engagement therewith by a suitable screw or screws, these bars serving to hold opposite ends of each matrix. The construction will be clearly apparent from Fig. 2.

The bars 24 are arranged so as to move easily into and out of the gaps in the cylinder, a convenient way of effecting this being to bevel the sides of the bars as shown. As the cylinders rotate,—the means by which they are driven being hereinafter described,—the blocks 24 pass into and out of the gaps in the cylinders, the band, when both blocks are disengaged from the cylinders, being driven by the friction of the molten metal on the drum and by the friction between the bands and the cylinders.

Suitable means which may be varied widely in construction, are employed to close

the mold space at the sides. Preferably, however, this means will be of such a character as to give the cast plate the beveled edge usually present on printing plates. When the side closing means employed is of the character just referred to, that is to say, when it produces plates having beveled edges, this means will preferably be movable so as to enable it to be moved out of position to deliver the plate and then back into position. In the particular construction shown, the side closing means consist of two pairs of segments 28, (see Fig. 5) these segments being movably mounted on the cylinder, the movement being parallel to the axis thereof. The means for thus movably mounting the segments may be of any desired character, but as shown, the cylinder is provided on each side with a T-slot 29 (see Fig. 6). Each of the segments has depending therefrom a T-shaped lug 30 which fits snugly in the slot. The segments may, therefore, be slid away from the middle of the cylinder so as to enable the plate to be removed and may then be slid back into operative position.

When, as in the construction shown, the members which form the mold are rotary members, their movement may be effected in any desired manner. In the particular machine illustrated, there is provided a standard shaft 31, and in this standard is mounted a power shaft 32, the other end of this shaft being supported in one of the standards 14. This shaft 32 is shown as provided with the usual fast and loose pulleys and with a driving pinion 33. This driving pinion 33 meshes with a gear 34 which is mounted on a shaft 35 suitably supported in the frame. This shaft has on it a pinion 36 which meshes with a large gear 37 fast on one of the journals of the mold cylinder. This large gear 37 meshes with driving gears 38, 39 mounted on the shafts 21, 22 before referred to as carrying the cylinders which support the matrix carrier.

When, as in the particular construction illustrated, the machine is intended for continuous operation, that is to say, intended to cast a series of stereotype plates in succession without intermitting the operation of the machine, there will be provided suitable mechanism for dividing the product into the separated plates produced by the matrix or matrices, as the case may be. This dividing mechanism may be of any desired description. As illustrated, there are provided two knives 40 located diametrically opposite each other in the cylinder, the knives each consisting, as shown, of two blades 41. These blades are guided in their movement by means of bars 42 extending across the cylinder. The knives are normally flush with or below the surface of the cylinder and are projected at the proper time in order to divide the plates. The mechanism for projecting

these knives may be of any desired character, but in the construction shown, two cam disks 43 are provided for this purpose, these cam disks being provided with cam grooves 44 of a suitable configuration. The projecting ends of the knives 40 engage these grooves so that the knives are projected and withdrawn at proper times.

It has been heretofore stated that when the segments which form the side closing means are of such a shape as to produce plates with beveled sides, they will be withdrawn at proper times in order to permit the plate or plates to be removed from the cylinder. This withdrawal may be effected in any desired manner. As shown, however, slides 45 (see Fig. 5) are provided on each side of the machine, these slides being preferably curved, as shown, and provided with suitable engaging means which cooperate with engaging means on the segments. While these engaging means may be varied, in the construction shown, each of the slides has a groove 46 thereon, and the segments are provided with ribs 47 which run into and engage these grooves as the cylinder is rotated. Each of the slides is provided with a pair of stems 48 projecting therefrom, these stems being connected by means of a cross bar 49 (see Fig. 6). This cross bar 49 has a cam stud 50 (see Fig. 5) mounted thereon, said stud engaging with a cam groove 51 in a suitably formed cam 51' which is mounted on and rotates with one of the journals 17 of the cylinder 15. This cam is so shaped as to withdraw the slides at the proper time for the delivery of the plate, that is to say, when the plate is over a receiving device, if such a device be employed.

It may happen that the blades 41 may not completely cut the plates apart, and in order to insure that the plates are divided, an auxiliary knife will preferably be employed. This auxiliary knife may be mounted and operated in any desired manner. As shown, there is provided a cylinder 52, said cylinder being mounted on the shaft 53 suitably supported in the frame of the machine. This cylinder carries a pair of cutting blades 54 which project from the surface of the cylinder. The circumference of the cylinder 52 is, in the construction shown, equal to half the circumference of the cylinder 15, and the two surfaces are driven at the same rate of speed, so that the cutting blades 54 come into cutting position twice during the complete revolution of the cylinder and form, where necessary, registering cuts entering from the other side of the plate from those already formed by the blades 41. The surface of this cylinder 52 may also act to steady and hold the cast plate on the surface of the cylinder. While this cylinder may be driven in any desired manner, in the construction shown, it is driven by a gear 52' which is fast

on the shaft 53 and meshes with the large gear 37 before described.

In the preferred construction and as shown, there will be employed a cooling medium, so as to chill the plate on the cylinder, thus insuring its speedy cooling. The means for effecting this chilling of the cylinder may be of any desired construction, but in the preferred form of the construction, a suitable cooling liquid as water may be introduced into the interior of the cylinder. The means by which the cooling liquid is introduced may be of any desired description. As shown, a perforated pipe 55 extends into the cylinder through one of the journals 17, a tight joint being made by a stuffing box 56 of ordinary description, this pipe communicating with any suitable source of liquid supply. It is, of course, apparent that the liquid introduced into the cylinder must be withdrawn, and this withdrawal may be effected in any desired way. As shown, a perforated pipe 57 is located in the cylinder, this pipe connecting by means of an elbow 58 with an outlet pipe 59 located in the other one of the journals 17. The pipe 57 is located well below the center of rotation of the cylinder and as arranged will operate to siphon the liquid out of the cylinder. It is apparent that by means of the two pipes referred to a continuous circulation of liquid may be kept up through the cylinder.

In the preferred construction, a plate receiving means will be employed, and this receiving means will preferably be of such a character and so located that the plate may be automatically deposited thereon by the cylinder without interrupting its rotation. This plate receiving means may be widely varied in construction. As shown, there are provided two arc-shaped frame pieces 60 mounted on slides 61. These slides move in guideways 62 in a bed block 63 which, in the construction illustrated, is bolted to the bed plate of the machine. In the preferred construction, the plate receiving surface is formed by means of rolls 64 which are mounted in the arc-shaped frame pieces 60. In the particular construction illustrated, three of these rolls are shown, although it is apparent that any number may be employed. In the preferred construction, this plate receiver when in receiving position will be close to the surface of the cylinder, so that the plate may be deposited thereon without being allowed to drop. After the plate has been deposited thereon, the plate receiver will, in a preferred form of the construction, be moved away from the cylinder so that the plate may be readily delivered. It is for this reason that the slide mechanism before referred to is provided.

The means for giving the receiver its movement may be of any desired character. As shown, however, there is provided a shaft 65

mounted in standards 14, this shaft having fast thereon a pair of arms 66 which are slotted at their outer ends and take over pins 67, a pin being located on each of the slides 61. The shaft 65 is a rock shaft, and in order that it may be rocked, it is provided on its outer end with an arm 68, this arm being provided with a stud 69 to which is pivoted an operating rod 70. This rod carries a cam roll 71 which coöperates with a cam 72 mounted on the shaft 53 of the auxiliary cutter roll before referred to. The upper end of the rod 70 is forked, as shown, so as to embrace the shaft, the rod being thus guided in its movement.

While the plate might be removed from the plate receiving device by hand, or in any other desired manner, in the preferred construction, mechanically operated removing means will be employed. This removing means may be of any desired construction. As shown, the bed block 63 is provided with a pair of standards 73 on which are supported rolls 74. The bed block also is provided with another pair of standards 75, these standards being double standards, as clearly appears in Fig. 6. Supported in these double standards are shafts 76, the outer ends of these shafts being mounted in bearings 77 bolted to the standards 14. Each of these shafts is provided with a sprocket wheel 78. In front of and parallel to these shafts 76 is another shaft 79 on which is mounted a pair of sprocket wheels 80, and over these wheels 80 and the wheels 78 run sprocket chains 81. The shaft 79 may be driven in any suitable manner, as from any moving part of the machine, or may be independently driven. The driving means having no special reference to the present invention, the illustration thereof is omitted in the interest of clearness and brevity.

The operation of the mechanism which has been described will be clearly understood, and a specific recital thereof is not, therefore, necessary. It will be seen that by this mechanism it is possible to cast stereotype plates continuously without interrupting the operation of the machine, and that the number of forms cast will depend upon the number of matrices mounted on the carrier. If the number of matrices be varied, it will be understood, of course, that the cutting mechanism must be varied accordingly, if the machine is intended to be operated to cast a number of plates without interrupting its operation. While, furthermore, in the preferred form of the invention, the matrix carrier and the coöperating surface are both given rotary movements.

The invention is not to be limited to constructions in which such movements are employed, the essential feature of the invention being, so far as this part of the mechanism is concerned, that the mold travels away from

the spout during the casting operation, so that a continuous flow of metal during the casting operation is insured.

While the machine illustrated embodies the invention in its preferred form, it is to be understood that the invention may be embodied in constructions which differ widely therefrom. The invention is not, therefore, to be limited to the specific construction herein shown and described.

What is claimed is:—

1. In a stereotype plate casting machine, the combination with a matrix support, of coöperating mold forming means from which the matrix is spaced, means for delivering the molten metal into the mold space, and means for giving the matrix and mold forming means a simultaneous traveling movement during the casting operation, substantially as described.

2. In a stereotype plate casting machine, the combination with a matrix support, of coöperating mold forming means from which the matrix is spaced, means for delivering the molten metal into the mold space, and means for giving the matrix and mold forming means a simultaneous revolving movement during the casting operation, substantially as described.

3. In a stereotype plate casting machine, the combination with a matrix support, of coöperating mold forming means from which the matrix is spaced, side closing means, means for delivering molten metal into the mold space, means for giving the matrix and the mold forming means a simultaneous traveling movement during the casting operation, and means for giving the side space closing means a movement to free the plate, substantially as described.

4. In a stereotype plate casting machine, the combination with a matrix support, of coöperating mold forming means from which the matrix is spaced, side closing means, means for delivering molten metal into the mold space, means for giving the matrix and the mold forming means a simultaneous revolving movement during the casting operation, and means for giving the side space closing means a movement to free the plate, substantially as described.

5. In a stereotype plate casting machine, the combination with means for supporting and giving a matrix a revolving movement, a mold forming member from which the matrix is spaced to form a mold, means for delivering molten metal to the mold space, and means for giving the member a rotary movement which is simultaneous with the movement of the matrix, substantially as described.

6. In a stereotype plate casting machine, the combination with a rotary mold forming member, of means for causing a matrix during the casting operation to travel in a path

corresponding to the path of the surface of the member and spaced therefrom to form a mold, side closing means, means for delivering molten metal to the mold space, and means for moving the side closing means into and out of operative position, substantially as described.

7. In a stereotype plate casting machine, the combination with a matrix support, of a cooperating mold forming means from which the matrix is spaced, means for giving the matrix a revolving movement during the casting operation, means for delivering the molten metal to the mold space, means for giving the cooperating mold forming means a simultaneous advancing movement, side closing means, and means for separating the product into plates, substantially as described.

8. In a stereotype plate casting machine, the combination with a matrix support, of a cooperating mold forming means from which the matrix is spaced, means for giving the matrix a revolving movement during the casting operation, means for delivering the molten metal to the mold space, means for giving the cooperating mold forming means a simultaneous advancing movement, side closing means, means for moving said closing means into and out of operative position, and means for separating the product into plates, substantially as described.

9. In a stereotype plate casting machine, the combination with a matrix support, of a cooperating mold forming means from which the matrix is spaced, means for delivering molten metal to the mold space, side closing means, means for giving the matrix support and the mold forming means a simultaneous advancing movement during the casting operation, and means for separating the product into plates, substantially as described.

10. In a stereotype plate casting machine, the combination with a matrix support, of a mold forming member from which the support is spaced, side closing means, means for delivering molten metal to the mold space, means for giving the support and the mold forming member a simultaneous revolving movement during the casting operation, and means for separating the product into plates, substantially as described.

11. In a stereotype plate casting machine, the combination with a mold cylinder, of means for giving it a rotary movement, means for supporting a matrix and for causing it to travel in a path parallel to the path of movement of the cylinder side closing means, means for delivering molten metal to the space between the cylinder and the matrix, and means for separating the product into plates, substantially as described.

12. In a stereotype plate casting machine, the combination with a matrix support, of

cooperating mold forming means, means for giving the matrix a revolving movement and the mold forming means a simultaneous rotary movement, means for delivering molten metal to the mold space, means for separating the product into plates, and plate receiving and delivery means, substantially as described.

13. In a stereotype plate casting machine, the combination with two surfaces spaced to form a mold, of side closing means, a matrix secured to one of the surfaces, means for delivering molten metal to the mold space, means for giving the surfaces a simultaneous revolving movement during the casting operation, and means for separating the product into plates, substantially as described.

14. In a stereotype plate casting machine, the combination with two surfaces spaced to form a mold, of side closing means, a matrix secured to one of the surfaces, means for delivering molten metal to the mold space, means for giving the surfaces a simultaneous revolving movement during the casting operation, means for separating the product into plates, and plate receiving and delivery means, substantially as described.

15. In a stereotype plate casting machine, the combination with a matrix carrier, of a mold cylinder, said carrier and cylinder being spaced to form a mold, side closing means, means for delivering molten metal to the mold space, and means for giving the carrier and cylinder a simultaneous revolving movement during the casting operation, substantially as described.

16. In a stereotype plate casting machine, the combination with a matrix carrier, of a mold cylinder, said carrier and cylinder being spaced to form a mold, side closing means, means for delivering molten metal to the mold space, means for giving the carrier and cylinder a simultaneous revolving movement during the casting operation, and means for separating the product into plates, substantially as described.

17. In a stereotype plate casting machine, the combination with a matrix carrier, of a mold cylinder, said carrier and cylinder being spaced to form a mold, side closing means, means for delivering molten metal to the mold space, means for giving the carrier a revolving movement and cylinder a simultaneous rotary movement during the casting operation, and plate receiving means, substantially as described.

18. In a stereotype plate casting machine, the combination with a matrix carrier, of a mold cylinder, said carrier and cylinder being spaced to form a mold, side closing means, means for delivering molten metal to the mold space, means for giving the carrier a revolving movement and cylinder a simultaneous rotary movement during the casting operation, means for separating the product

into plates, and plate receiving means, substantially as described.

19. In a stereotype plate casting machine, the combination with a pair of revolving surfaces spaced to form a mold, one of said surfaces supporting a matrix, of side closing means, means for delivering molten metal to the mold space, a plate receiver, and means for moving the receiver into and out of receiving position, substantially as described.

20. In a stereotype plate casting machine, the combination with a pair of revolving surfaces spaced to form a mold, one of said surfaces supporting a matrix, of side closing means, means for delivering molten metal to the mold space, means for cutting the product into plates, a plate receiver, and means for moving the receiver into and out of receiving position, substantially as described.

21. In a stereotype plate casting machine, the combination with a pair of revolving surfaces spaced to form a mold, one of said surfaces supporting a matrix, of side closing means, means for delivering molten metal to the mold space, means for cutting the product into plates, a plate receiver comprising a plurality of rolls, and means for moving the receiver into and out of receiving position, substantially as described.

22. In a stereotype plate casting machine, the combination with a pair of revolving surfaces spaced to form a mold, one of said surfaces supporting a matrix, of side closing means, means for delivering molten metal to the mold space, means for cutting the product into plates, a plate receiver comprising a plurality of rolls, means for moving the receiver into and out of receiving position, and delivery rolls operating to remove the plate from the receiver, substantially as described.

23. In a stereotype plate casting machine, the combination with a pair of revolving surfaces spaced to form a mold, one of said surfaces supporting a matrix, of side closing means, means for delivering molten metal to the mold space, a cutter for dividing the product into plates, and an auxiliary cutter, substantially as described.

24. In a stereotype plate casting machine, the combination with a pair of revolving surfaces spaced to form a mold, one of said surfaces supporting a matrix, of side closing means, means for delivering molten metal to the mold space, a cutter for dividing the product into plates, an auxiliary cutter, a plate receiver, and means for moving the receiver into and out of receiving position, substantially as described.

25. In a stereotype plate casting machine, the combination with a pair of revolving surfaces spaced to form a mold, one of said surfaces supporting a matrix, of side closing means, means for delivering molten metal to the mold space, a cutter for dividing the product into plates, an auxiliary cutter, a

plate receiver, means for moving the receiver into and out of receiving position, and delivery rolls operating to remove the plates from the receiver, substantially as described.

26. In a stereotype plate casting machine, the combination with a mold cylinder, of a revolving matrix carrier spaced therefrom to form a mold, means for delivering molten metal to the mold space, pairs of beveled rings closing the side spaces between the matrix carrier and the cylinder, and means for moving the rings into and out of operative position, substantially as described.

27. In a stereotype plate casting machine, the combination with a mold cylinder, of a revolving matrix carrier spaced therefrom to form a mold, pairs of beveled segments closing the side spaces between the matrix carrier and the cylinder, means for revolving the cylinder and carrier during the casting operation, means for delivering molten metal to the mold space, plate delivering means, and means for moving the segments to deliver the plate and then back into operative position, substantially as described.

28. In a stereotype plate casting machine, the combination with a mold cylinder, of a flexible matrix carrier, a pair of rotary supports therefor, said supports being arranged so that the matrix carrier is spaced from the cylinder to form a mold, side closing means, means for delivering molten metal to the mold space, and means for driving the cylinder and carrier during the casting operation, substantially as described.

29. In a stereotype plate casting machine, the combination with a mold cylinder, of a flexible matrix carrier, a pair of rotary supports therefor, said supports being arranged so that the matrix carrier is spaced from the cylinder to form a mold, side closing means, means for delivering molten metal to the mold space, means for driving the cylinder and carrier during the casting operation, and means for separating the product into plates, substantially as described.

30. In a stereotype plate casting machine, the combination with a mold cylinder, of a flexible matrix carrier, a pair of rotary supports therefor, said supports being arranged so that the matrix carrier is spaced from the cylinder to form a mold, side closing means, means for delivering molten metal to the mold space, means for driving the cylinder and carrier during the casting operation, means for separating the product into plates, and plate receiving means, substantially as described.

31. In a stereotype plate casting machine, the combination with a mold cylinder, of a flexible matrix carrier, a pair of rotary supports for the carrier, said supports being so located with respect to the cylinder that the matrix during the casting operation will be caused to assume a curve which is parallel to

the surface of the cylinder, side closing means, means for delivering molten metal to the mold space, and means for driving the cylinder and matrix carrier during the casting operation, substantially as described.

32. In a stereotype plate casting machine, the combination with a mold cylinder, of a flexible matrix carrier, a pair of rotary supports for the carrier, said supports being so located with respect to the cylinder that the matrix during the casting operation will be caused to assume a curve which is parallel to the surface of the cylinder, side closing means, means for delivering molten metal to the mold space, means for driving the cylinder and matrix carrier during the casting operation, and means for separating the product into plates, substantially as described.

33. In a stereotype plate casting machine, the combination with a mold cylinder, of a flexible matrix carrier, a pair of rotary supports for the carrier, said supports being so located with respect to the cylinder that the matrix during the casting operation will be caused to assume a curve which is parallel to the surface of the cylinder, side closing means, means for delivering molten metal to the mold space, means for driving the cylinder and matrix carrier during the casting operation, means for separating the product into plates, and plate receiving means, substantially as described.

34. In a stereotype plate casting machine, the combination with a pair of revolving surfaces spaced to form a mold, one of said surfaces carrying a matrix, of a plurality of pairs of beveled segments for closing the sides of the mold space, a pair of slides, cooperating engaging means on the slides and the segments, means for delivering molten metal to the mold space, means for dividing the product into plates, means for driving the surfaces during the casting operation, and means for operating the slides to shift the segments out of operative position to deliver the plates and move them back into operative position, substantially as described.

35. In a stereotype plate casting machine, the combination with means for delivering a continuous flow of molten metal, of traveling mold surfaces one of which carries a matrix, and means for separating the product into stereotype printing plates, substantially as described.

36. In a stereotype plate casting machine, the combination with means for delivering a continuous flow of molten metal, of traveling mold surfaces one of which carries a matrix, means for separating the product into printing plates, a plate receiver, and means for moving it into and out of receiving position, substantially as described.

37. In a stereotype plate casting machine, the combination with means for delivering a

continuous flow of molten metal, of a matrix carrier, a cooperating mold forming surface, means for giving the carrier and surface a continuous movement during the casting operation, means for closing the sides of the mold space, and means for dividing the product into plates, substantially as described.

38. In a stereotype plate casting machine, the combination with means for delivering a continuous flow of molten metal, of a mold cylinder, a flexible matrix carrier, means for driving the matrix carrier and the mold cylinder continuously during the casting operation, means for closing the sides of the mold space, and means for dividing the product into plates, substantially as described.

39. In a stereotype plate casting machine, the combination with means for delivering a continuous flow of molten metal, of a mold cylinder, a flexible matrix carrier, means for driving the matrix carrier and the mold cylinder continuously during the casting operation, means for closing the sides of the mold space, means for dividing the product into plates, and a plate receiver, substantially as described.

40. In a stereotype plate casting machine, the combination with means for delivering a continuous flow of molten metal, of a mold cylinder, a flexible matrix carrier, means for driving the matrix carrier and the mold cylinder continuously during the casting operation, means for closing the sides of the mold space, means for dividing the product into plates, a plate receiver conforming generally to the outline of the cylinder and having a roller surface, and means for moving the plate receiver into and out of operative position, substantially as described.

41. In a stereotype plate casting machine, the combination with means for delivering a continuous flow of molten metal, of a mold cylinder, a matrix carrier, means for driving the matrix carrier and mold cylinder continuously during the casting operation, means for closing the sides of the mold space, means for dividing the product into plates, a plate receiver conforming generally to the outline of the cylinder and having a roller surface, and means for moving the plate receiver into and out of operative position, substantially as described.

42. In a stereotype plate casting machine, the combination with means for delivering a continuous flow of molten metal, of a mold cylinder, a matrix carrier, means for driving the matrix carrier and mold cylinder continuously during the casting operation, means for closing the sides of the mold space, means for dividing the product into plates, a plate receiver conforming generally to the outline of the cylinder and having a roller surface, means for moving the plate receiver into and out of operative position, and delivery rolls operating to shift the

plate out of the receiver, substantially as described.

43. In a stereotype plate casting machine, the combination with means for delivering a continuous flow of molten metal, of a mold cylinder, a flexible matrix carrier, rotary supports therefor, means for driving the cylinder and the matrix carrier continuously during the casting operation, side closing means, means for separating the product into printing plates, means for operating the side closing means to facilitate the delivery of the plates, a plate receiver, and means for moving the plate receiver into and out of operative position, substantially as described.

44. In a stereotype plate casting machine, the combination with means for maintaining a continuous flow of molten metal, of a mold cylinder, a matrix carrier, means for driving the cylinder and carrier continuously during the casting operation, side closing means, means for dividing the product into printing

plates, and means for delivering a cooling liquid into the cylinder and for withdrawing it therefrom, substantially as described.

45. In a stereotype plate casting machine, the combination with means for maintaining a continuous flow of molten metal, of a mold cylinder, a matrix carrier, means for driving the cylinder and carrier continuously during the casting operation, side closing means, means for dividing the product into printing plates, a plate receiver, means for moving the plate receiver into and out of operative position, and means for delivering a cooling liquid into the cylinder and for withdrawing it therefrom, substantially as described.

In testimony whereof, I have hereunto set my hand, in the presence of two subscribing witnesses.

AMANDUS H. CRUSE.

Witnesses:

F. W. H. CRANE,
EDWARD C. WEISSMAN.