

V. Machine Actions

A LINE of matrices is assembled in the assembler elevator and the elevator is then raised by hand between the fingers of the line-delivery carriage. The line delivery or transfer carriage is released by the tripping of the latch and carries the line of matrices to the first elevator, thereby automatically starting the main cam shaft. The following actions then take place:

1. The first elevator descends to present a line of matrices in front of the mold. During this action the first-justification lever descends, at the same time the slug lever is carried to the right, and the knife wiper rises.

2. The vise jaw on the left-hand side is closed, making the distance between the vise jaws a little less than the proper length of line before the line descends between them.

3. During actions 1 and 2 the mold disk turns one quarter of a revolution to the left, carrying the mold from the vertical or ejecting position to the horizontal or casting position.

4. The mold slide carrying the mold disk moves forward toward the matrices, leaving one hundredth of an inch space between the vise jaws and the matrices, and the face of the mold.

5. The vise-closing lever rises, allowing the vise jaw wedge spring to raise the wedge, moving the vise jaw outward to make the proper distance between the vise jaws for the line of matrices, after the line is justified.

6. The justification levers rise, causing the spaceband block to rise in an inclined position and push the spacebands upward through the line successively, spreading the line until the friction on the bands stops the action of the justification spring. This is called the first justification. During the actions 2 to 6 the transfer carriage returns ready to receive the next line from the assembling elevator.

7. The justification levers descend, relieving the spacebands from the upward pressure.

8. The vise-closing lever descends, relaxing the vise jaw, and slightly relieving the matrix line from the pressure, to allow the vertical alignment of the matrices.

9. The first elevator rises, lifting the matrices so that their lower ears bear against the aligning shoulders in the mold for vertical alignment.

10. The metal pot advances and pushes the mold forward against the line of matrices, pressing them back against the jaw, to complete the alignment facewise.

11. The metal pot recedes, relieving the matrix line from the pressure of the mold.

12. The vise-closing lever rises, allowing the wedge spring to raise the wedge to its proper height and moving the vise jaw inward to the exact length of the line.

13. The justification and vise-closing levers rise simultaneously, causing the justification block to rise horizontally and push the spacebands upward through the line of matrices to complete the justification.

14. The metal pot closes against the mold, forcing the mold against the aligned and justified matrices, making the "lockup."

15. The pump lever descends, and plunger delivers metal into mold from metal pot to form the slug, after which plunger rises again.

16. The upward pressure on the first elevator, due to action 9, is relieved, releasing the lower matrix ears from the strain. The justification lever and vise-closing lever descend, releasing the pressure on the line, and the metal pot and the mold slide carrying the mold then move backward, drawing the face of the slug out of the matrices.

17. The mold slide stops and the pot continues to retreat, separating the mouth of the pot from the base of the slug.

18. The mold disk revolves three-quarters, carrying the base of the slug in the mold past the back knife, thereby trimming the base of the slug to the proper height, and presents the slug in a vertical position in front of the two trimming knives, in position to be ejected. During this action the first elevator rises, lifting the matrix line to the intermediate channel, where it is transferred to the second elevator, at the same time the first elevator rises. The knife wiper descends to normal.

19. The elevator transfer slide lever now moves the matrix line on to second elevator. The transfer lever slide and spaceband pawl now move back, allowing the second elevator to lift the matrices out of the intermediate channel, leaving the spacebands. The transfer slide and spaceband pawl now move toward each other, pushing the bands together and then returning them to spaceband box.

20. The ejector blade moves forward and pushes slug out of mold between trimming knives and into galley at front of the machine.

21. During operation 20 the first elevator is lowered to its normal position ready to receive another line. At the same time the second elevator rises to register with the bar in the distributor box.

22. While the second elevator is rising the distributor shifter is moved outward to be in position to shift the line into the distributor box.

23. The distributor shifter moves inward pushing the line of matrices into the distributor box. At the same time the justification lever rises slightly and actuates the slug lever, assembling the slugs in the machine galley. At the same time the ejector retreats to its normal position.

This completes the actions for one revolution of the cam shaft.