

die case and the other to the supporting frame, and each including a driving lever operated from a cam on the main shaft, a slide attached to the driving lever through an intermediate flexible connection, pawls mounted upon the slide, stationary ratchet teeth, and controllable stop pins for throwing the pawls into engagement with the ratchet teeth. 37th. In a die case operating mechanism such as described the combination with a reciprocating driver, a die case mounted to reciprocate, and an interposed yielding connection through which motion is transmitted from the driver to the die case, of a series of ratchet teeth, a series of stop pins, and a pawl connected to and reciprocating in unison with the die case, said pawl being arranged to be engaged by the stop pins when projected into its path and to engage the ratchet teeth corresponding to the stop pin, to arrest the movement of the die case, the angle of the engaging faces of the ratchet teeth and pawl being such as to slightly augment the throw of the pawl as produced by contact with a stop pin, whereby the shock is transferred to and borne by the ratchet, and the pawl is swung from contact with the stop pin. 38th. The combination with the reciprocating driving member or lever, the slide, and the yielding connection between the driver and slide, of a series of stationary ratchet teeth, a pawl pivoted on said slide in position to engage the ratchet teeth but held normally from contact therewith, a series of stop pins each adapted to be projected into the path traversed by the pawl, and, by engaging the latter, to throw it into contact with one of the ratchet teeth, and pneumatic operating devices for controlling the positions of the stop pins. 39th. In a type forming mechanism, the combination with the mould, of the supporting plate and plunger carried by a detachable block or section of the frame, and the die case and its supporting frame, each detachably connected to its actuating mechanism. 40th. In a machine such as described, the combination of the suspended supporting plate, the supporting frame guided to reciprocate longitudinally of the supporting plate and connected by a link to its controlling slide, the die case mounted to reciprocate on the supporting frame in a direction cross wise of the supporting plate, and connected by a link to a rod on its controlling slide, said rod permitting independent movement of the die case with the supporting frame in a direction at right angles to that of the die case controlling slide. 41st. In a machine such as described, the combination with the reciprocating driving member, the die case and the yielding connection, of the slide carrying two pawls standing in opposite directions, two series of ratchet teeth, one for each pawl, and a series of stop pins for throwing either pawl into engagement with the corresponding ratchet teeth, said stop pins being arranged serially and alternately on opposite sides of the slide, so that successive stop pins will engage alternately opposite pawls. 42nd. A mould adapted for use in conjunction with detachable matrices, provided with fixed side walls 80 81, an adjustable mould blade 96 movable between the side walls, and a removable front wall 83. 43rd. In a mould adapted for use in connection with a removable matrix, the combination of the fixed side walls, the adjustable mould blade and the movable wall 83 carried by a slide containing the jet opening or recess. 44th. The combination in a mould such as described, and with the fixed blocks constituting the side walls of the mould cavity and the adjustable mould blade, of the movable front wall attached to a slide, the latter provided with a portion extending beneath the fixed blocks and containing the jet passage or opening. 45th. The combination in a mould such as described and with the fixed blocks forming the side walls and the adjustable mould blade, the reciprocating slide carrying the front wall of the mould and provided with a transverse groove or recess extending beneath the fixed blocks, the jet blade located in said groove or recess, and the fixed cam engaging said jet blade to expell the jet after the type has been formed and as the slide is moved to open the mould. 46th. In a type forming mechanism such as described, the combination of the following elements, to wit:—a movable series of matrices, with devices for bringing any one to the casting point, a stationary mould, a movable jet slide, and a reciprocating nozzle through which molten metal is projected through the jet passage into the mould, said jet slide being moved at the completion of the casting operation and before the withdrawal of the nozzle, to cut off or separate the jet from the type and cover the nozzle seat. 47th. In a type forming mechanism such as described, the combination of the following elements, to wit:—a movable series of matrices, with means for centreing any one at the casting point in contact with the mould, a stationary mould, a jet slide traversing beneath the mould and provided with a jet blade, a nozzle seat, a movable nozzle, with means for ejecting molten metal through the passage into the mould, and actuating devices controlling the movements of the nozzle and jet slide so that after the metal has been injected into the mould and while the nozzle is on its seat, the jet slide will be moved to sever the jet from the type and cover the nozzle seat. 48th. In a type forming mechanism such as described, the combination of the following elements, to wit:—a movable series of matrices, a stationary mould provided with fixed side walls, an adjustable mould blade and a movable front wall, a jet slide provided with a jet ejecting blade, a nozzle seat below the jet slide, and a metal injecting apparatus provided with a nozzle movable towards and from its seat, said jet slide being operated to cut off the jet while the nozzle remains seated substantially as described. 49th. In a type forming mechanism, the combination with the mould, the nozzle of the metal injecting apparatus, and the nozzle seat, of a movable jet slide interposed

between the nozzle seat and mould, and moved to sever the jet while the nozzle remains in position and before or simultaneously with its withdrawal from its seat. 50th. In a type forming mechanism, the combination of the following elements, to wit:—a movable series of matrices provided with devices for locating and centreing any matrix of the series at the casting point, a stationary mould composed of fixed side walls, an adjustable and movable mould blade for determining the width of the mould cavity and ejecting the type therefrom, and a movable front wall for uncovering the front of the mould cavity and permitting the escape of the type therefrom, a nozzle seat, a reciprocating nozzle with means for ejecting molten metal therefrom, a jet slide intermediate the nozzle seat and mould, and a jet blade carried by the jet slide and operating to eject the jet therefrom after it has been severed from the type. 51st. In a type forming mechanism such as described and in combination with the mould provided with an adjustable section or mould blade for varying the width of the mould cavity, of actuating devices for reciprocating the mould blade and automatically operated stop mechanism for arresting the movement of the mould blade intermediate the extremes of movement of the actuating devices. 52nd. In a type forming mechanism such as described, the combination with the mould provided with a movable mould blade, of actuating devices for reciprocating the mould blade to discharge the type from the mould, and automatically adjustable controlling mechanism for arresting the mould blade during its retrograde movement after ejecting the type, to set the mould for the next succeeding type. 53rd. In a type forming mechanism, such as described, the combination of the following elements, to wit, a movable series of matrices with mechanism for locating any matrix at the casting point, a mould provided with an adjustable mould blade, actuating devices for reciprocating said mould blade and controlling devices for arresting the movement of the mould blade and thereby determine its position in the mould. 54th. In a type forming mechanism such as described the combination of the following elements, to wit, a movable series of matrices, a mould operating in conjunction with any one of said matrices and provided with an adjustable section or mould blade for varying the width of the mould cavity and ejecting the type therefrom, and a movable section for opening the mould so as to permit the escape of the type, actuating devices operating to reciprocate the mould blade, and controlling devices for limiting the movement of the mould blade as it is retracted after discharging a type, to adjust its position and the width of the mould cavity preliminary to the formation of the next succeeding type. 55th. In a type forming mechanism such as described, as a mean for adjusting the position of the mould blade in the mould, the combination with said mould blade, of the slide, the actuating lever deriving motion from the main driving shaft, the stop rod, and the normal wedge operating to vary the position of the stop rod, and, through the latter, to arrest the mould blade in adjusted position. 56th. In a type forming mechanism such as described, the combination of the following elements, to wit, a series of movable matrices with mechanism for centering any one of said matrices opposite the mould, a mould provided with a movable mould blade for varying the width of the mould cavity, actuating devices for reciprocating the mould blade, a stop rod controlled by a wedge for limiting the movement of the mould blade in one direction, and connections between the wedge and the mechanism for centering the matrices, for shifting the wedge to correspond with the selected matrix. 57th. In a type forming mechanism such as described, the combination of the die case provided with matrices graded serially according to width, controllable actuating devices for shifting the die case, a mould furnished with an adjustable mould blade and a movable member or wall opposite thereto, actuating devices for reciprocating the mould blade, to discharge the type, a stop pin for arresting the mould blade during its return motion, to adjust the width of the mould cavity, a normal wedge controlling the position of said stop, and connections for shifting said normal wedge in unison with the die case. 58th. In a type forming mechanism such as described, the combination with the die case, the mould, the actuating mechanism for reciprocating the die case in one direction, and the stop for limiting the motion of the mould blade, of the normal wedge connected to reciprocate in unison with the slide carrying the pawls, and governed, as to position, by the same stop pins which serve to govern the position of the die case. 59th. The combination with the pawl carrying slide of the die case actuating mechanism and the normal wedge of the mould blade controlling mechanism, of the connecting lever and the driving lever provided with a rod the latter bearing a spring and a pin or shoulder between which the connecting lever is received thus forming a yielding connection which will permit the wedge and slide to be arrested while the driving lever continues in motion. 60th. The combination with the die case actuating mechanism and the normal wedge for controlling the mould blade, of the connecting lever and the micrometer adjusting device for varying the position of the wedge with relation to the die case controlling devices. 61st. In a type forming mechanism such as described, the combination of the following elements, to wit, the die case and its actuating mechanisms for controlling its movements in two directions, the mould provided with a movable mould blade, mould blade actuating and controlling mechanisms including the normal wedge, the latter connected to one of the die case actuating mechanisms and moving in unison with the die case, to vary the width of the mould, and a justifying mechanism operating to shift the position of the normal