used to push the workpiece from an end surface of the magazine on the side oppositely away from the processing apparatus.

[0003] In a workpiece ejection device that is simplest and is used generally, as illustrated in Fig. 16, a workpiece 85 is pushed out by driving a driver 86, which includes a rod 87 provided with a workpiece contact member 88 at its leading end, by the action of pneumatic pressure, for example. To reliably push out the workpiece 85 from a magazine 84, a stroke of the rod 87 is usually almost equal to the width (or depth) of the magazine 84. When such a prior-art ejection device is arranged in series with respect to the magazine, a problem arises in that a space corresponding to twice the magazine width is occupied. In view of such a problem, various proposals have been made so far with intent to reduce the space occupied by the ejection device.

[0004] For example, Patent Document 1 discloses a device for letting out a lead frame or a printed board, wherein a bracket member disposed laterally of an elevator stage includes a vertical guide groove extending in an up-and-down direction and a horizontal guide groove extending in a horizontal direction to be connected to an upper end of the vertical guide groove through an arc-shaped guide groove, a pushing member formed in the shape of a strip having an arch-like cross-section by employing a leaf spring is inserted in the vertical guide groove and the horizontal guide groove to be freely movable over both the guide grooves in a lengthwise direction thereof, and a lower end of the pushing member is fixed to a head moving up and down reciprocally along the vertical guide groove, the letting-out device being characterized in that the horizontal guide groove is disposed to incline obliquely downwards from a horizontal plane toward the magazine rack, and a pressing roller for pressing an intermediate