

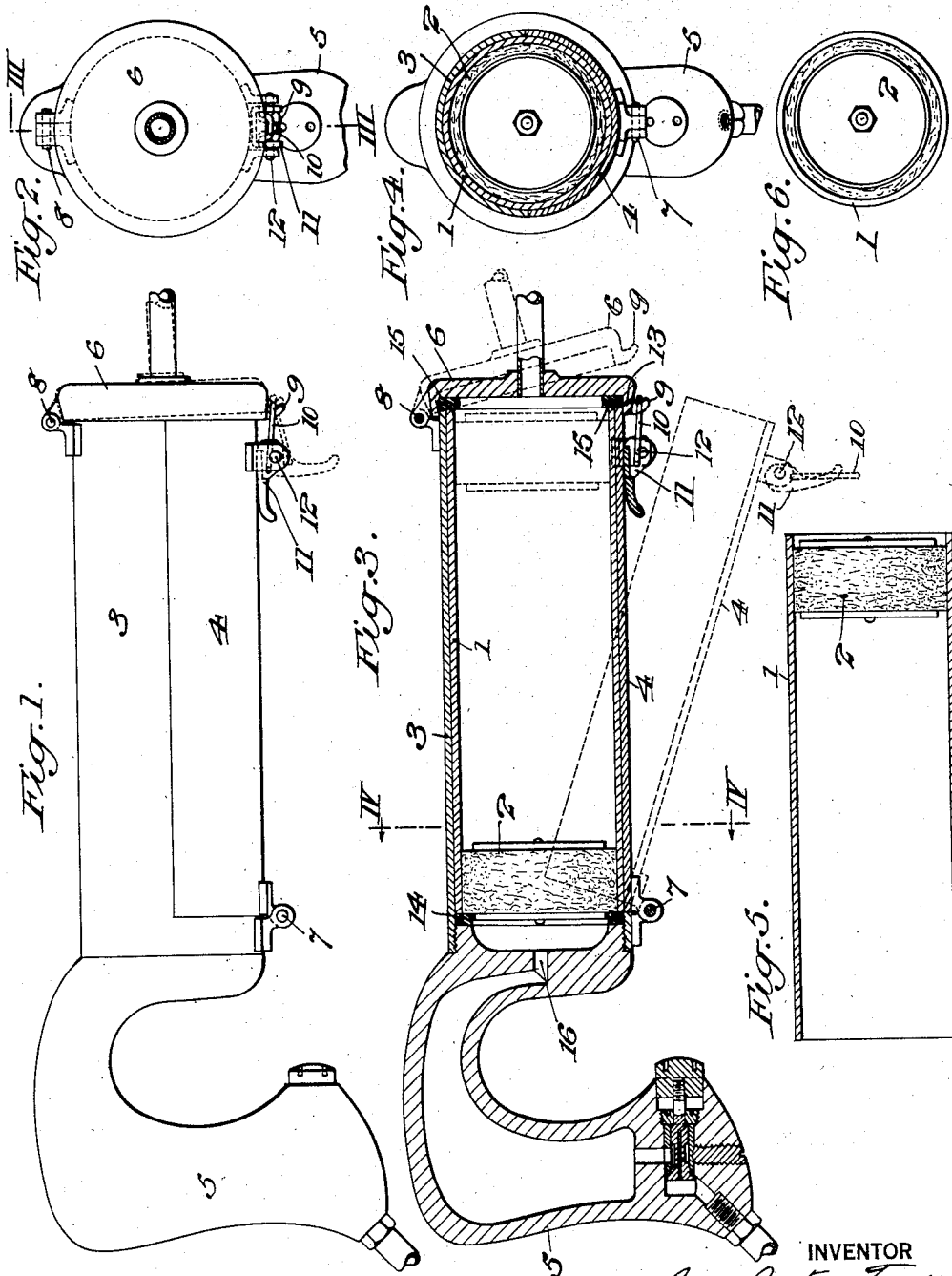
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GUN FOR EJECTING PLASTIC MATERIAL

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GUN FOR EJECTING PLASTIC MATERIAL.

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One object of my invention is to provide certain improvements in fluid pressure operated guns for ejecting plastic material whereby the efficiency of the gun is increased and in which the plastic material supply cartridges may be readily inserted and removed, and when inserted in the gun may be held fluid tight therein.

A further object is to provide a removable and reversible cartridge comprising an open ended tube having a free plunger therein adapted to be moved from end to end thereof, so that when the plastic material has been ejected from one end of the cartridge by the movement of the free plunger, the cartridge with its plunger may be removed from the gun, refilled through its other end, reversed and again inserted into the gun for further use.

A practical embodiment of my invention is represented in the accompanying drawings in which

Fig. 1 represents the gun in side elevation.

Fig. 2 represents a front end view of the same.

Fig. 3 represents a longitudinal section taken in the plane of the line III—III of Fig. 2.

Fig. 4 represents a cross section taken in the plane of the line IV—IV of Fig. 3, looking in the direction of the arrows.

Fig. 5 represents the cartridge in longitudinal central section, the free plunger being shown in full lines at one end of the cartridge and in dotted lines at the other end thereof.

Fig. 6 represents an end view of the same.

The cartridge 1 for containing the plastic material comprises a tube open at both ends, which tube is made of suitable rigid material such, for instance, as thin sheet metal. A free plunger 2 of suitable material, such, for instance, as felt, is located within the tube and it is fitted to be moved by pressure from end to end of the tube to eject the plastic material therefrom.

The fluid pressure operated gun comprises generally the barrel 3, its laterally swinging hinged member 4, the handle member 5 and the hinged nozzle member 6. The barrel 3 of the gun is divided longitudinally and transversely to form the semicircular member 4, which member is hinged at its rear end to the barrel 3 as shown at 7 to open laterally when released by the nozzle member 6 to

permit the insertion and removal of the cartridge 1.

The nozzle member 6 is hinged at 8 to the front end of the barrel 3 of the gun. Diametrically opposite the hinge 8 the nozzle member 6 is provided with a projection 9 arranged to be engaged by the link 10 of a lock 11 which is pivoted at 12 to the front end of the hinged barrel member 4. This nozzle member 6 is provided with a peripheral flange 13 arranged to embrace the front ends of the barrel 3 and hinged member 4.

A yielding washer 14 is located between the inner end of the cartridge 1 and the handle member 5 and another yielding washer 15 is located between the front end of the cartridge 1 and the nozzle member 6.

The handle member 5 is provided with a fluid pressure inlet port 16 for the admission of pressure fluid to the interior of the gun when the parts are assembled for forcing the free plunger 2 forwardly from the rear end of the cartridge to the front end thereof, to eject the plastic material therefrom.

The lock 10, 11 is of that type which will draw the nozzle member 6 snugly into its position over the front ends of the barrel 3 and hinge member 4 and at the same time compress the washers 14 and 15 to form fluid tight joints between the ends of the cartridge and the handle and nozzle members respectively. When the lock is partially released it will only let the nozzle member 6 and hinged member 4 swing slightly away from their closed position as the link 10 will still be engaged with the projection 9. This movement is sufficient to release the fluid tight joints at the ends of the cartridge to permit the escape of the fluid pressure within the gun. After this fluid pressure has escaped, the link 10 of the lock may be manually disengaged from the projection 9 of the nozzle member to permit the nozzle member and hinged barrel member to be opened wide to allow of the removal of the emptied cartridge.

From the above description it will be seen that I have provided a very simple and effective gun for ejecting plastic material in which the cartridge containing the plastic material may be very readily inserted into and removed from the gun and in which fluid tight joints are provided to prevent the escape of the pressure fluid during the operation of the gun. It will also be seen that

I have provided means for permitting the escape of the pressure fluid from within the gun after the plastic material has been ejected therefrom, before the barrel member and nozzle member are fully opened to permit the removal of the emptied cartridge. This partial release of these nozzle and barrel members prevents injury to the operator and ejection of the free plunger member which would happen if the nozzle and barrel members were released before the pressure fluid was allowed to escape.

Furthermore, it will be seen that the cartridge may first be filled through one end and after the plastic material is ejected, it may be then filled from the other end, thus permitting me to utilize a reversible cartridge with a single free plunger movable from end to end therein.

It is evident that various changes may be resorted to in the construction, form and arrangement of the several parts without departing from the spirit and scope of my invention; hence, I do not wish to be limited to the particular embodiment herein shown and described, but

What I claim is:—

1. In a gun for ejecting plastic material, a tubular barrel having a half cylindrical member hinged thereto and a nozzle member also hinged to the barrel, and a clamping device for locking the nozzle and half cylindrical member in their operative positions.

2. In a gun for ejecting plastic material, a tubular barrel having a half cylindrical member hinged thereto and a nozzle member also hinged to the barrel, and a device for locking the nozzle member to the hinged barrel member.

3. In a gun for ejecting plastic material, a tubular barrel having a half cylindrical member hinged thereto and a nozzle member also hinged to the barrel and arranged when closed to overlap the front ends of the two barrel members to hold them together, and a device for locking the nozzle member to the hinged barrel member.

4. In a fluid pressure operated gun for ejecting plastic material from a removable and reversible open ended tube having a free plunger therein, a tubular barrel having a handle member, a nozzle member hinged to the front end of the barrel, washers located in the handle and nozzle members respectively, and a device for causing the nozzle member to compress the washers against the opposite ends of said tube to form fluid tight joints.

5. In a fluid pressure operated gun for ejecting plastic material from a removable and reversible open ended tube having a free plunger therein, a tubular barrel having a handle member, a nozzle member hinged to the front end of the barrel, washers located in the handle and nozzle members respec-

tively, and a device for causing the nozzle member to compress the washers against the opposite ends of said tube to form fluid tight joints, said device serving as a lock for securing the nozzle member to the barrel.

6. In a fluid pressure operated gun for ejecting plastic material from a removable and reversible open ended tube having a free plunger therein, a tubular barrel having a half cylindrical member hinged at its rear end thereto, a handle member, a nozzle member hinged to the front end of the barrel, washers located in the handle and nozzle members respectively, and a device for causing the nozzle member to compress the washers against the opposite ends of said tube to form fluid tight joints.

7. In a fluid pressure operated gun for ejecting plastic material from a removable and reversible open ended tube having a free plunger therein, a tubular barrel having a half cylindrical member hinged at its rear end thereto, a handle member, a nozzle member hinged to the front end of the barrel, washers located in the handle and nozzle members respectively, and a device for causing the nozzle member to compress the washers against the opposite ends of said tube to form fluid tight joints, said device serving as a lock for securing the nozzle member to the hinged barrel member.

8. In a fluid pressure operated gun for ejecting plastic material from a removable and reversible open ended tube having a free plunger therein, a tubular barrel having a half cylindrical member hinged at its rear end thereto, a handle member, a nozzle member hinged to the front end of the barrel, washers located in the handle and nozzle members respectively, and a device for causing the nozzle member to compress the washers against the opposite ends of said tube to form fluid tight joints, said device comprising an adjustable lock for securing the nozzle member to the hinged barrel member and operable to partly release the hinged barrel and nozzle members to permit the escape of the fluid pressure before the parts are fully released to permit the removal of the emptied tube.

9. In a fluid pressure operated gun, a barrel portion, a free plunger reciprocating within the barrel portion, means for applying fluid pressure to one end of the barrel portion, a pivoted head carrying a nozzle closing the other end of the barrel portion, a lock for securing the head in closed position, said lock having means for permitting the escape of pressure within the barrel portion before the head is fully released.

In testimony, that I claim the foregoing as my invention, I have signed my name this 26th day of March 1927.

PERCY AUSTEN TOMES.