Nov. 24, 1953 W. B. SWANSICK 2,660,085

APPARATUS FOR INTERCEPTING PRIMERS AND THE LIKE

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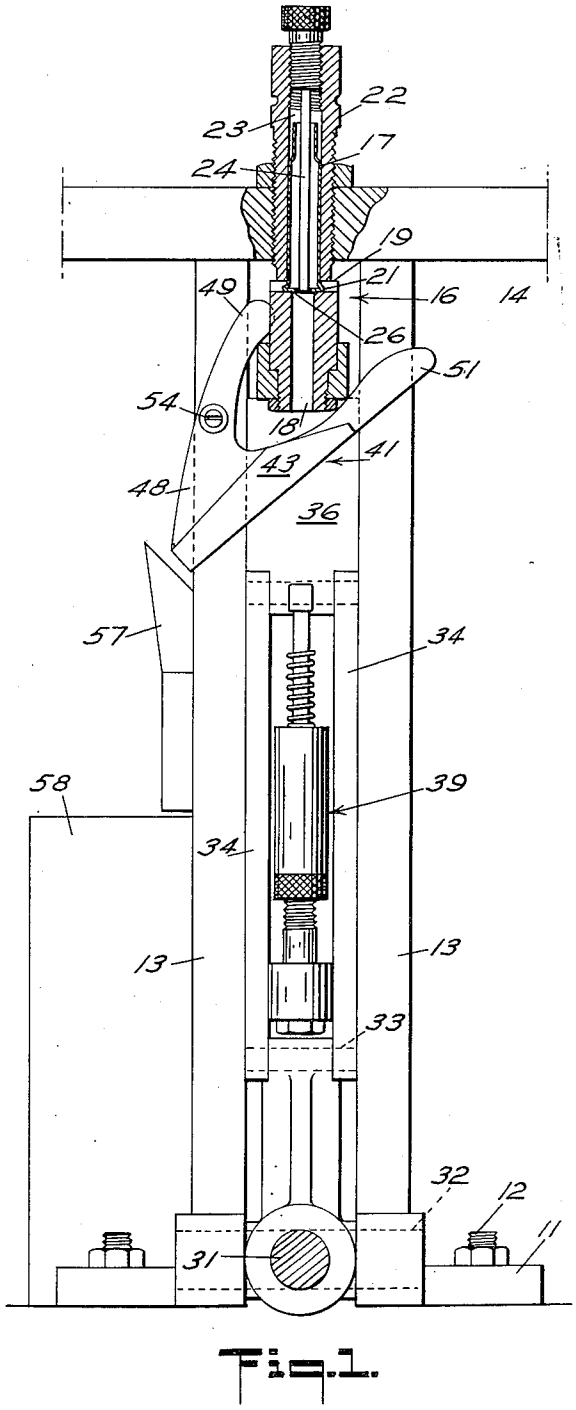


Fig. 1.

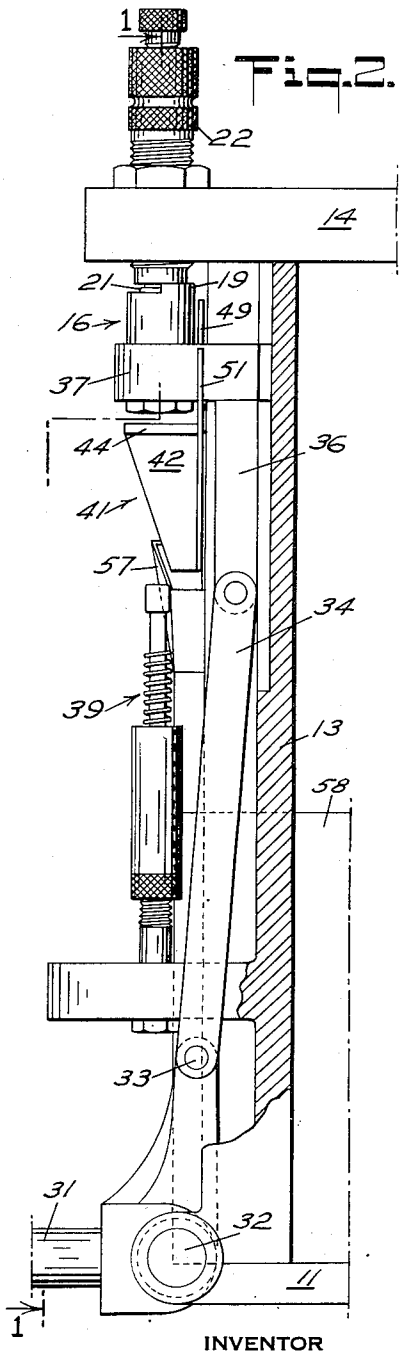


Fig. 2.

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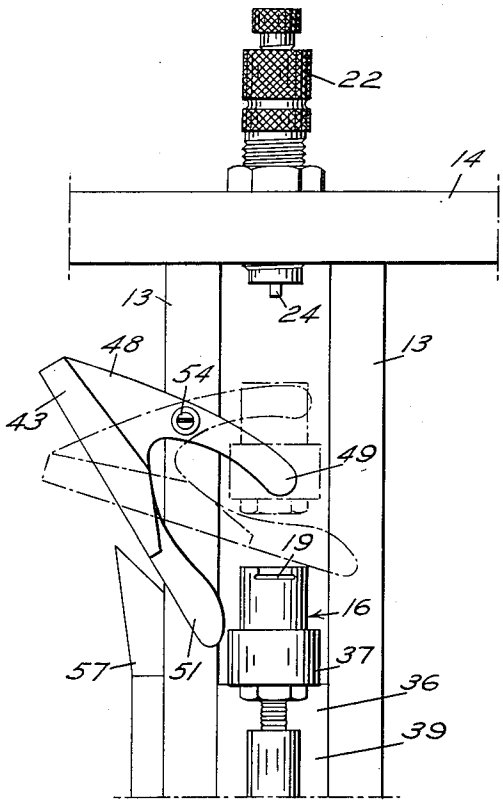


Fig. 3.

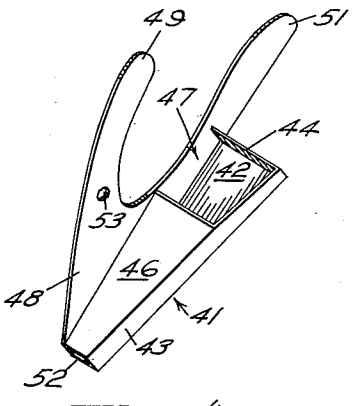


Fig. 4.

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APPARATUS FOR INTERCEPTING PRIMERS AND THE LIKE

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Application March 17, 1952, Serial No. 276,984

7 Claims. (Cl. 86—36)

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This invention relates to mechanisms for catching punchings and the like, and is particularly directed towards an attachment for a cartridge reloading tool which will intercept primers forced from old cartridges prior to such cartridges being reloaded and provided with new primers.

As is well known in the art, it is usually desirable to provide some chute or receptacle for receiving punchings created by a punch forced through the material and passing through a hole in the die. This will of course serve to collect the punchings for possible salvage as well as prevent the floor, of the room in which the apparatus is situated, from becoming cluttered with scattered pieces of metal. The provision of such a chute or receptacle is a fairly simple undertaking where a generally conventional punching machine is being used, for it is only necessary to affix a chute or receptacle immediately subjacent the lower die hole through which the punchings are discharged when the movable die or punch strikes the stationary material from which the punching is taken. However, more serious problems result when the punching is made by a stationary punch and movable work material, for under such circumstances the movement of the work material may interfere with the proper installation of a chute or receptacle. The problem becomes even more aggravated where the work material consists of a vertically movable cylindrical member having an end wall on which the punch die is arranged to strike.

Accordingly, it is an object of the present invention to provide an interceptor for receiving punched out portions of an element, in which the said element is vertically moved against a stationary punch member.

Another object of the invention is to provide a punching interceptor of the character described which is actuated by the reciprocatory movement of the element so as to be sequentially placed in and out of operative position.

A further object of this invention is to provide apparatus of the type referred to which will in no way interfere with the normal functions or operations of the punching mechanism.

A still further object of my invention is to provide an interceptor for catching primers as the latter are forced from empty cartridge shells by movement of the shells towards and into engagement with a fixed punch member.

The invention possesses other objects and features of advantage, some of which, with the foregoing, will be set forth in the following description of the preferred form of the invention which is illustrated in the drawings accompanying and forming part of the specification. It is to be understood, however, that variations in the showing made by the said drawings and description may be adopted within the scope of the invention as set forth in the claims.

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Referring to said drawings:

Figure 1 is an elevational view of a conventional cartridge reloading tool with the primer interceptor of my invention shown in operative position. The plane of the view is taken substantially along the line 1—1 of Figure 2.

Figure 2 is a side elevational view, partly in section, of the mechanism disclosed in Figure 1.

Figure 3 is an enlarged portional view of the primer interceptor shown in two positions of movement.

Figure 4 is a perspective view of the interceptor.

Before discussing the structure of my invention in detail, it should be pointed out that the interceptor may be used on a variety of punching machines, but for purpose of explanation, I have chosen to illustrate the same in connection with a conventional cartridge reloading tool. As is well known to those familiar in the art, such tools are designed to remove the old primers, from an expended cartridge shell, insert new primers therein, and reload the shells. It is only in connection with catching the old primers that this invention is directed and therefore no detailed discussion will be had concerning the other uses of the tool.

With reference to Figures 1 and 2 of the drawings, it will be seen that the tool includes a base plate 11 provided with apertures through which bolts 12 may be passed for securing the tool in a vertical position on a suitable supporting surface. A pair of fixed vertical rails 13 extend vertically upwardly from plate 11 and support a generally circular disk 14. Mounted for vertical reciprocatory movement between rails 13 is a member, generally indicated by the numeral 16, on which the empty cartridge shell 17 may be releasably mounted. Member 16 is provided with an axially extending bore 18 through which the old primers fall, as will be hereinafter explained, and is further provided with a semi-circular grooved portion 19 arranged to receive the peripheral lip 21 of the shell and radial position and hold the shell in a vertical position.

Secured to disk 14, and axially aligned with member 16, is a sleeve element 22 having a bore 23 and an axially adjustable punch or pin 24 extending therethrough. As will be best seen in

Figure 1, member 16 and shell 17 are arranged to be vertically raised until the shell passes into bore 23 and the telescopically positioned pin 24 strikes the primer which is centrally positioned on the shell end wall 26, and forces the same from the wall, the primer falling through bore 18 of member 16. To impart such vertical movement to member 16, and consequently to shell 17, a manually engageable handle 31 is pivotally mounted on the tool adjacent the lower edges of rails 13 by means of a pin 32. Secured to the handle by means of pins 33 are a pair of actuating levers 34, such levers being pivotally attached to a vertically movable carriage 36 having a portion 37 secured to member 16. Carriage 36 is confined to vertical movement between the rails, and it is believed clear that actuation of handle 31 imparts a toggle movement to levers 34 thereby forcibly raising or lowering member 16, depending on whether the handle is raised or lowered.

The reloading tool as illustrated, also includes a primer reloader, generally indicated by the numeral 39, but this reloader mechanism is not essential for an illustration or explanation of my invention.

The foregoing described apparatus is all conventional, and as will be understood, the old primers, after being forced from the shell by the punch 24 will drop through bore 18, and after a period of time will accumulate over the floor and around the tool, causing an unsightly as well as a possibly hazardous condition to develop. Furthermore, there is some salvage value to the primers, and it therefore is most desirable that these primers be intercepted and directed into a suitable container or receptacle for storing the same. The interceptor of my invention is arranged to accomplish these desired results in an extremely simple manner, and without requiring any alteration to the existing reloading tool.

Referring to Figure 4, it will be seen that the interceptor is constructed with a housing 41, defined in part by a bottom wall 42, side wall 43, end wall 44, and a top wall 46 which is of a shorter length than the bottom wall at one end of the latter to provide a receiving opening 47. Opposite side wall 43, I provide a generally flat element 48 having bifurcated end portions 49 and 51. It will be noted that the interceptor is hollow from the opening 47 to the discharge outlet 52 thereof whereby primers introduced into the opening may gravitally descend and pass through the outlet 52 when the housing is appropriately sloped. Element 48 is provided with an aperture 53 by means of which the entire unit may be pivotally mounted on one of the rails 13 by a sheet metal screw 54 or the like.

As will be clear, in attaching the interceptor to rail 13, the end portions 49 and 51 are positioned on the top and bottom of member 16 respectively. Thus, as member 16 is vertically reciprocated, the interceptor will be pivoted about the screw 54 from the solid line position of Figure 3 when member 16 is at the lowest position in its stroke to the position indicated in Figure 1 when member 16 is at the top of its stroke and pin 24 is forcing the primer from the shell. In this latter position, the primers will pass through bore 18, fall into the opening 47, gravitally descend through the housing, and be discharged from the outlet 52. If desired, a second stationary chute 57 may be secured to the rail 13 for further guiding the discharged primers into a storage box or receptacle 58.

Due to the slope of the interceptor housing when the latter is swung into its uppermost position, the primers will be positively directed though the outlet 52 and into a container, or as above mentioned, into the secondary chute 57. In any event, in its lower or non-functional position, the interceptor will be entirely clear of the other moving parts of the reloading tool and in no way interfere with the operations thereof. Furthermore, the interceptor may be made at a very low cost and very readily installed without requiring any special equipment or training.

I claim:

1. Apparatus for receiving punched out portions from a member selectively movable from and towards a fixed punch member by reciprocatory means, including a member having a receiving opening and a discharge opening, means defining a chamber placing said openings in flow communication, means on said member actuatable by said reciprocatory means for selectively placing said receiving opening into and out of axial registration with said punch member.

2. An interceptor for receiving punchings from a piece of material insertible on apparatus having a fixed vertically extending punch element, a member having a bore in axial alignment with said punch element and arranged to releasably hold said material, and means for vertically reciprocating said member comprising, an element pivotally mounted on said apparatus, means defining a substantially enclosed passage secured to said element and having a receiving and discharge port for said punchings, and means on said element engageable with said member for oscillating said element upon reciprocation of the member.

3. Apparatus as set forth in claim 2 in which said enclosed passage slopes downwardly from said receiving port to said discharge port when said material is in engagement with said punch element.

4. In a tool for removing primers from an empty cartridge shell of the class wherein the shell is releasably mounted on a vertically movable member having a vertically extending bore therethrough and movable with said member into telescopic engagement with a punching element in alignment with said bore and arranged to force said primer from the shell, the combination with said tool of an interceptor member for receiving said primers as the latter are punched from said shells, said interceptor member including a chute-like element pivotally attached to said tool and having an upwardly opening primer receiving opening and an end discharge port, and means on said chute-like element engageable with said vertically movable member whereby said element will be pivotally oscillated upon vertical reciprocatory movement of the member so that said receiving opening will be positioned subjacent said bore when the member is in its uppermost position.

5. In a tool for removing primers from an empty cartridge shell of the class wherein the shell is releasably mounted on a vertically movable member having a vertically extending bore therethrough and movable with said member into telescopic engagement with a punching element in alignment with said bore and arranged to force said primer from the shell, the combination with said tool of an interceptor member for receiving said primers as the latter are punched from said shells, said interceptor member including a generally flat member pivotally secured to said tool with the plane of said member parallel to the

axis of said bore, means secured to said member defining a passage having an upwardly opening primer receiving opening and a discharge opening, said receiving opening being positioned subjacent said vertically movable member bore when the member is in its uppermost position, and means on said interceptor member respectively engageable with upper and lower portions of said vertically movable member for oscillation of the interceptor upon reciprocatory movement of the movable member.

6. Apparatus as set forth in claim 5 in which said passage is inclined downwardly from said receiving opening to said discharge opening when the receiving opening is positioned subjacent said bore, and inclined upwardly in other positions of the interceptor member.

7. Apparatus as set forth in claim 5 including a fixed chute-like member mounted on said frame and having an upwardly directed intake port substantially immediately subjacent said discharge opening when said receiving opening is positioned subjacent said bore.

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