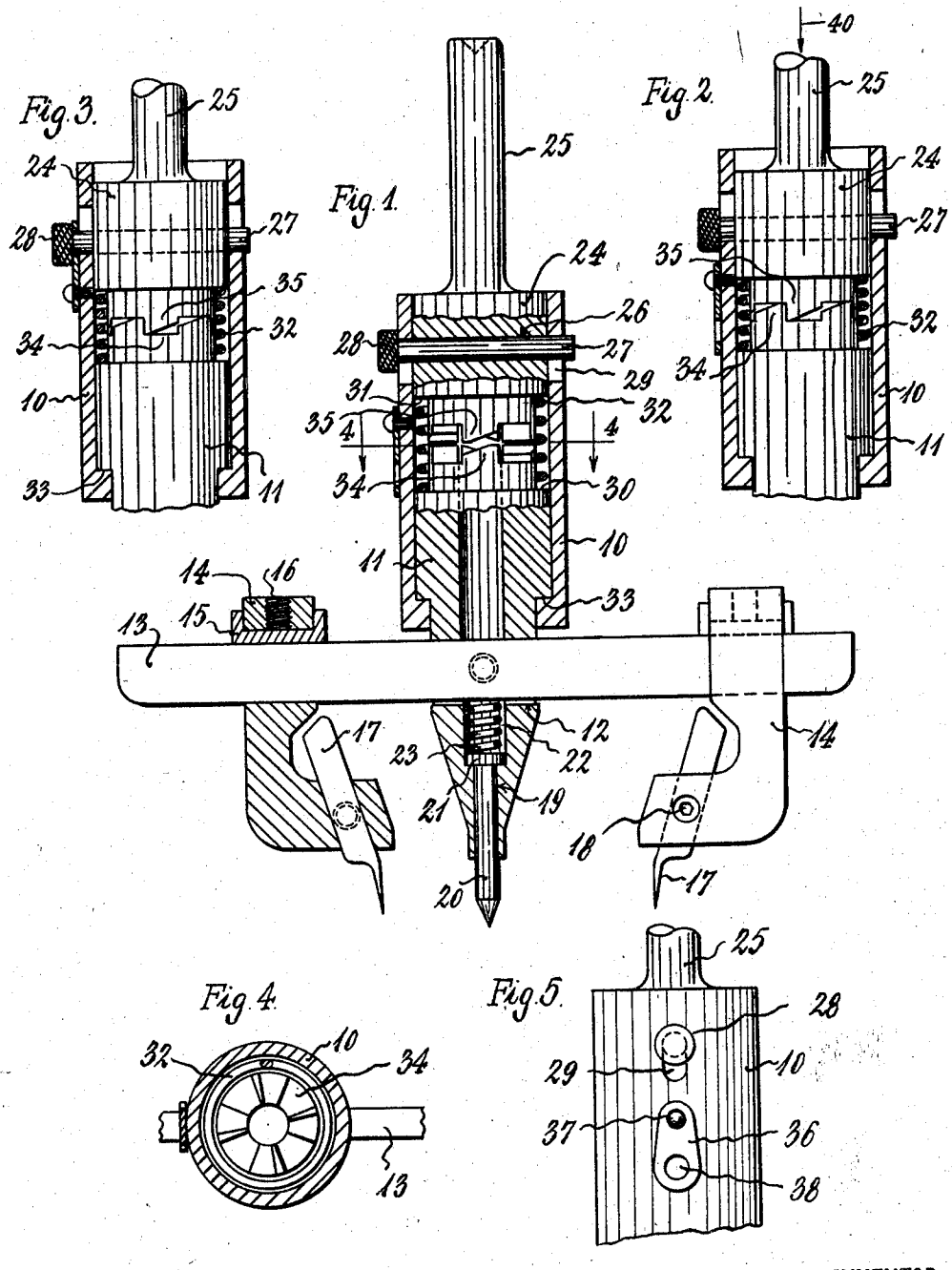
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GASKET CUTTER

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GASKET CUTTER

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This invention relates to tools of the general type of gasket cutters, and has for its object the production of a tool of this general character which can be operated effectively either manually or in a power driven apparatus such as a drill press. A further object of the invention is to provide a tool of this character in which the rotation of the cutting elements can be quickly discontinued substantially automatically whenever trouble develops in the cutting of the gasket.

The invention will be described with reference to the accompanying drawings in which:

Fig. 1 is an elevation partly in median section of a tool constructed in accordance with my invention;

Fig. 2 is a fragmentary view similar to Fig. 1 showing the parts in a different position of operation;

Fig. 3 is a view similar to Fig. 2 showing the parts in a still different position of operation;

Fig. 4 is a section on line 4—4 of Fig. 1; and

Fig. 5 is a fragmentary side elevation of the tool shown in Fig. 1.

The improved gasket cutter of my invention is preferably enclosed within a barrel 10 in which is mounted for sliding movement a plug 11. Midway of this plug, at a point outside the barrel, a transverse slot 12 is cut in which is fitted a cutter supporting bar 13. Cutter holders 14 are adjustably positioned upon this bar by shims 15 against which set screws 16 bear. Each cutter holder is provided with a cutter 17 held in a suitable slot and is held in place by a set screw 18. The lower end of the plug 11 is preferably tapered and is provided with an axially drilled hole 19 in which slides a center point 20 having a sharpened lower end and provided with an upper head 21. This head fits within an enlarged recess 22 in the plug so that the center point is prevented from coming out. A spring 23 bears at one end against the head 21 and at the other end against the bar 13 so as to press the center point constantly downwardly.

Also sliding within the barrel 10 is a second plug 24 having a shank 25 suitably formed to be held in a chuck, bit brace, or similar tool. A transverse hole 26 through this plug receives a pin 27 having at one end a head 28, preferably knurled for convenience in manipulation. The pin passes fairly snugly through the hole 26 and through elongated slots 29 in the barrel which are best shown in Fig. 5. By this means the plug 24 of necessity rotates with the barrel but is permitted a slight axial displacement with relation thereto. The two plugs 11 and 24 are provided with shoulders 30 and 31 respectively between which is compressed a helical spring 32 constantly serving to urge the two plugs away from each other. Cooperating shoulders 33 are provided between the barrel 10 and the plug 11 so that the relative movement of the plug and barrel is limited in one direction. The two plugs 11 and 24 are also provided with cooperating clutch faces 34 and 35, shown as being of the crown type, which, when the plugs are separated by the spring 32 to the normal extent, are out of engagement. The purpose and manner of actuation of these clutch faces will now be considered.

In use the shank 25 is gripped in a suitable operating tool such as a chuck of a drill press and the center point 20 is located at the desired position on the gasket or other article to be cut. The drill press is then set in rotation, but no rotation of the tool holders occurs unless the friction between the barrel and the plug 11 is sufficient to cause it. If this does occur, and is undesired, it can readily be stopped since there is no positive connection between the shank 25 and the tool carrying bar 13. In any event, this chance rotation will cease as soon as the cutters have been brought into engagement with the article to be cut. If the spindle of the drill press is now depressed by the usual operating mechanism, the shank 25 will be forced down and the spring 32, which is made weaker than the spring 23, is compressed. This brings the two clutch surfaces 34 and 35 into engagement and causes rotation of the lower plug and of the cutter members. As the drill press spindle is further lowered, the spring 23 will be compressed, permitting the

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cutters 17 to descend below the center point 20.

If, during the cutting operation, difficulty develops so that it is desirable to stop the rotation of the cutters, it is necessary only to raise the spindle of the drill press or other means being used for rotating the cutting device. This will immediately disengage the clutch members 34, 35 and stop the rotation of the cutting elements. In this respect, my improved tool presents a marked advantage over those formerly proposed for the reason that the cessation of rotation is practically instantaneous as it is not necessary for the operator to shift his hand from the feed control to a separate rotation control.

It may in some circumstances be desirable to operate the gasket cutter in a bit brace or other holder in which the clutch feature is not necessary and in which it might even be a disadvantage. To accommodate this type of work, I have provided a member 36, riveted or otherwise secured at 37 to the barrel 10 and having a hole 38 spaced so that it can be aligned with the pin 27 only when the plug 24 is depressed as in Fig. 3. In this position, the clutch is engaged and will be held in engaged position by the member 36 so that the gasket cutter may be used as a tool having a rigid drive. Fig. 3 shows the rigid connection and Fig. 2 the similar position of the parts where pressure is being exerted upon the shank in the direction of the arrow 40 so as to hold the clutch engaged.

Claims:

1. In a gasket cutter or similar device, a center point, a tool holder, a shank by which the tool holder may be rotated and pressure exerted upon it, and a clutch connection between the shank and the tool holder whereby rotation will be imparted from the shank to the tool holder only upon the exertion of axial pressure between them.

2. In a gasket cutter or similar device, a barrel, a pair of plugs slidably mounted in the barrel, means for preventing rotation of one of the plugs with respect to the barrel, a clutch connection between the plugs, spring means normally holding the clutches out of effective contact, a tool holder carried by one of the plugs, and means whereby rotation may be imparted to the non-rotatable plug.

3. In a gasket cutter or similar device, a barrel, a pair of plugs slidably mounted in the barrel, means for preventing rotation of one of the plugs with respect to the barrel, a clutch connection between the plugs, spring means normally holding the clutches out of effective contact, a tool holder carried by one of the plugs, means whereby rotation may be imparted to the non-rotatable plug, a center point mounted in the rotatable plug, and a spring stronger than the first mentioned spring for urging the center point outwardly of the plug.

4. In a gasket cutter or similar device, a barrel, a pair of plugs slidably mounted in the barrel, means for preventing rotation of one of the plugs with respect to the barrel, a clutch connection between the plugs, spring means normally holding the clutches out of effective contact, a tool holder carried by one of the plugs, and means whereby rotation may be imparted to the non-rotatable plug, said means for preventing rotation of one of the plugs comprising a pin slidable in a hole in the plug and reciprocable in elongated slots in the barrel.

5. In a gasket cutter or similar device, a barrel, a pair of plugs slidably mounted in the barrel, means for preventing rotation of one of the plugs with respect to the barrel, a clutch connection between the plugs, spring means normally holding the clutches out of effective contact, a tool holder carried by one of the plugs, and means whereby rotation may be imparted to the non-rotatable plug, said means for preventing rotation of one of the plugs comprising a pin slidable in a hole in the plug and reciprocable in elongated slots in the barrel, and means for engaging the pin to hold the two plugs in clutch engaging contact.

6. In a gasket cutter or similar device, a tool carrying member, a spring pressed center point associated with said member, means including a clutch normally spring held out of operative position for imparting rotation to said member, and means for positively holding the clutch in engaged position.

7. In a gasket cutter or similar device, a tool holder, a center point associated therewith spring pressed so that the tool may be gradually advanced into the work by pressure exerted axially of the center point, and rotating means for the tool holder including a clutch normally actuable only upon the exertion of pressure axially of the center point.

In testimony whereof I have affixed my signature.

ROBERT O. ELDER.

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