Sept. 5, 1950 I. H. SHEFFER 2,521,099

FEED COLLET

Filed July 5, 1947

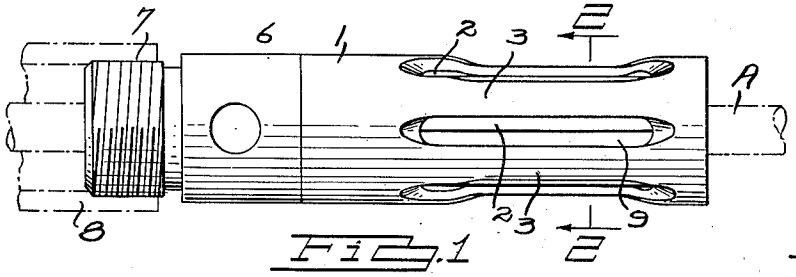


Fig. 1

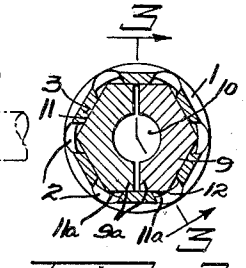


Fig. 2

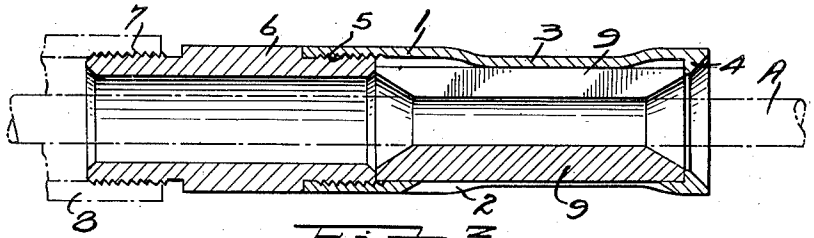


Fig. 3

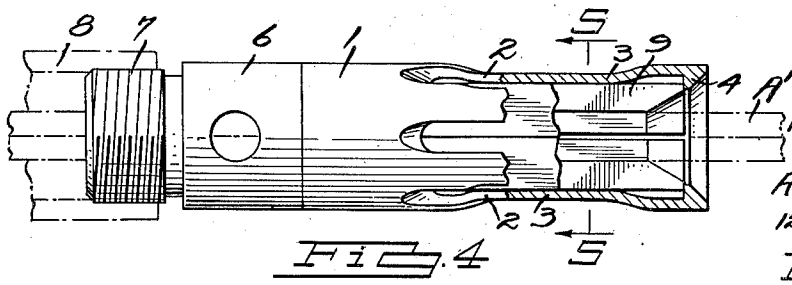


Fig. 4

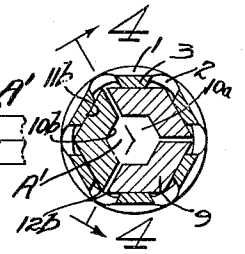


Fig. 5

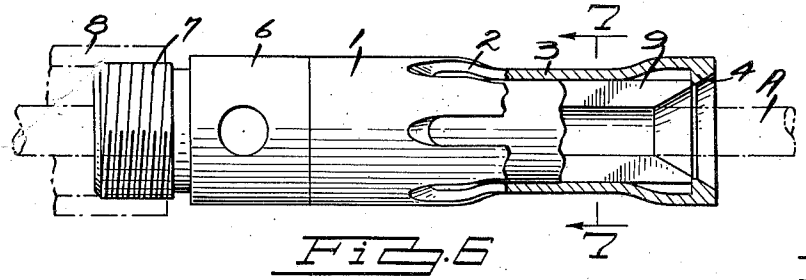


Fig. 6

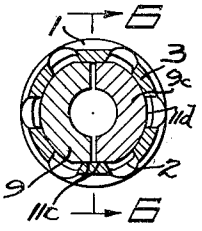


Fig. 7

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FEED COLLET

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4 Claims. (Cl. 279—46)

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This invention relates to improvements in feed collets, and refers particularly to feed collets wherein pads are employed for gripping the stock.

This invention aims, among other things, to provide a feed collet including an annular casing having a pad therein which is split radially into a plurality of separate sections; wherein spaced, resilient fingers are formed integral with the casing intermediately of its length to force the pad sections into engagement with stock extending through the collet; and wherein at least some peripheral portions of the pad sections are flat throughout their length for engagement by the resilient fingers to prevent rotation of the pad in the casing.

Another object of the invention is to provide such a feed collet wherein at least some of the longitudinal margins of the flat sides of the pad sections project into slots formed between adjacent fingers so that rotation of the pad in the casing is positively prevented.

A further object of the invention is to provide a feed collet including an annular casing and a plurality of pad sections which are readily insertable into or removable from the casing; and wherein both the casing and the pad sections are so constructed that they may be relatively cheaply and easily manufactured.

Having thus briefly stated some of the objects and advantages of the invention I will now describe it in detail with the aid of the accompanying drawing, in which:

Figure 1 is a side view of the invention with the pad sections made for holding round stock.

Figure 2 is a section on the line 2—2 of Figure 1.

Figure 3 is a section on the line 3—3 of Figure 2.

Figure 4 is a side elevation showing a slight modification wherein the pad sections are made for holding multi-sided stock.

Figure 5 is a section on the line 5—5 of Figure 4.

Figure 6 shows another slight modification wherein portions of the periphery of the pad sections are flat and the remaining portions are arcuate.

Figure 7 is a section on the line 7—7 of Figure 6.

Referring to the drawing, 1 designates an annular casing provided intermediately of its length with a plurality of longitudinal slots 2 thereby forming fingers 3 between them. These fingers are resilient and the diametrical distance between opposed pairs is somewhat less than the major portion of the casing bore. Formed integral with the front extremity of the casing 1 is an internal annular flange 4 the bore of which is less than the diametrical spacing between the opposed fingers 3, and the rear extremity of the casing is internally threaded at 5 to receive the correspondingly threaded end of an annular plug 6 which projects rearwardly beyond the casing and is also threaded externally at its opposite end for attachment to a feed tube indicated at 8.

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The pad 9, which is split radially into a plurality of separate sections 9a, is inserted in the annular casing 1 and held against longitudinal movement therein at its front extremity by the rear face of the annular flange 4 and at its rear extremity by the plug 7.

Referring now to Figure 2, the pad 9 which was first bored at 10 to the required size to receive and engage the circular stock A is provided with the same number of flat peripheral faces 11 as there are fingers 3 around the casing 1, so that each finger, which is transversely substantially flat, bears throughout its width against one of the peripheral faces of the pad. The pad was then split radially into two equal sections 9a, in the present instance centrally through two opposed flat peripheral faces 11, so that two opposed fingers 3 each bear against two short severed faces 11a one on each pad section 9a. It will be noted that the longitudinal margins or corners 12 formed along the junction of each adjacent pair of flat peripheral faces 11, which are of course angularly disposed to one another, project into the slots 2 formed between adjacent fingers 3. Thus not only does the relatively wide bearing of each finger 3 against one flat face 11, or against two adjacent faces 11a, prevent rotation of the pad in the casing, but the outer longitudinal margins or corners 12 which project into the slots 2 positively prevent any such rotary movement.

In the modification shown in Figure 5 the pad 9 is provided with a longitudinal bore 10a of hexagonal cross section to engage the sides of hexagonal stock B. The outer periphery of the pad 9 is also hexagonal in cross section and has each flat peripheral face 11b parallel with the adjacent flat face in the bore 10b. The casing is provided with six fingers 3 each of which again bears against one flat peripheral face 11b. The pad 9 is radially split in this case into three equal sections 9b so that two entire flat faces 11b occur on each pad section. The longitudinal margins or corners 12b between two adjacent flat faces

11*b* again project into the slots 2 formed between adjacent fingers 3.

In the modification shown in Figure 7, the pad 9 is radially split into two equal sections 9*c*. Extending an equal distance from and at right angles to the radial slot short flat peripheral faces 11*c* are formed on both sections 9*c* so that the total length of the two contiguous flat faces on each side of the pad is somewhat longer than the width of one of the fingers 3. The peripheral form of each pad section between the adjacent ends of the two short flat faces 11*c* is arcuate as shown at 11*d*. Against each arcuate portion two of the fingers 3 bear to force each section inwardly. Thus only two opposite fingers are in this case relied on to prevent rotation of the pad sections, though outwardly projecting corners 12*c* are again formed this time at the junction of each flat face 11*c* with one arcuate portion 11*d*, and each of these corners projects into one casing slot 2 to further prevent rotary movement of the pad. The opening 10*c* formed axially through the pad is in this case shown circular to engage circular stock C.

It will however be understood that the cross sectional form of the opening 10, 10*b* or 10*c* may be varied to suit that of the stock to be fed thereby; that the pad may be divided radially into any preferred number of sections; and that any required number of fingers may be provided upon the casing.

While in the foregoing the preferred embodiments of the invention have been described and shown it is understood that alterations and modifications may be made thereto provided they fall within the scope of the appended claims.

What I claim is:

1. A feed collet including an annular casing of reduced size cross-sectionally both internally and externally intermediately of its length, the intermediate portion of the casing being longitudinally slotted to form fingers, said fingers being resilient and parallel with the axis of the casing, a plurality of pad sections in the casing parallel with the axis of the latter throughout their length, the outer sides of the pad sections intermediately of their length bearing against the inner faces of the resilient fingers, said sections being urged toward the casing axis by said fingers, means for preventing rotary movement of the pad sections relative to the casing, means preventing axial movement of the sections in the casing, and means for mounting the annular casing on a feed tube.

2. A feed collet including an annular casing of reduced size in cross section both internally and externally intermediately of its length, the intermediate portion being longitudinally slotted to form fingers, said fingers being resilient and parallel with the axis of the casing, a plurality of pad sections flat longitudinally throughout their length in said casing and parallel with the axis of the latter, the outer sides of the pad sections intermediately of their length bearing against the inner sides of the resilient fingers, said sections being urged toward the axis of the casing by the fingers to engage stock extending through the casing, coacting means on the inner sides of the fingers and the outer sides of the pad sections holding said sections against rotary movement in the annular casing, means preventing axial movement of the sections in the casing, and means for mounting the casing on a feed tube.

3. A feed collet including an annular casing of reduced size both inside and outside intermediately of its length, the intermediate portion of reduced size being longitudinally slotted to form fingers, said fingers being resilient and parallel with the axis of the casing, a plurality of pad sections flat longitudinally throughout their length in the casing parallel with the axis of the latter, the outer sides of the pad sections intermediately of their length bearing against the inner sides of the resilient fingers, said sections being urged toward the axis of the casing by the fingers, the inner sides of at least some of the fingers being flat transversely and engaging correspondingly shaped outer sides of the pad sections, means preventing axial movement of the sections, in the casing, and means for mounting the casing on a feed tube.

4. A feed collet including an annular casing of reduced size both internally and externally intermediately of its length, the intermediate portion of reduced size being longitudinally slotted to form fingers, said fingers being resilient and parallel with the axis of the casing, a plurality of longitudinally flat pad sections in the casing parallel with the axis of the latter throughout their length, the outer faces of the pad sections intermediately of their length bearing against the inner faces of the resilient fingers, said sections being urged toward the axis of the casing by said fingers, the inner faces of the latter and the outer faces of the pad sections being flat transversely whereby the sections are held against rotary movement in the casing, means preventing axial movement of the sections in the casing, and means for mounting the casing on a feed tube.

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