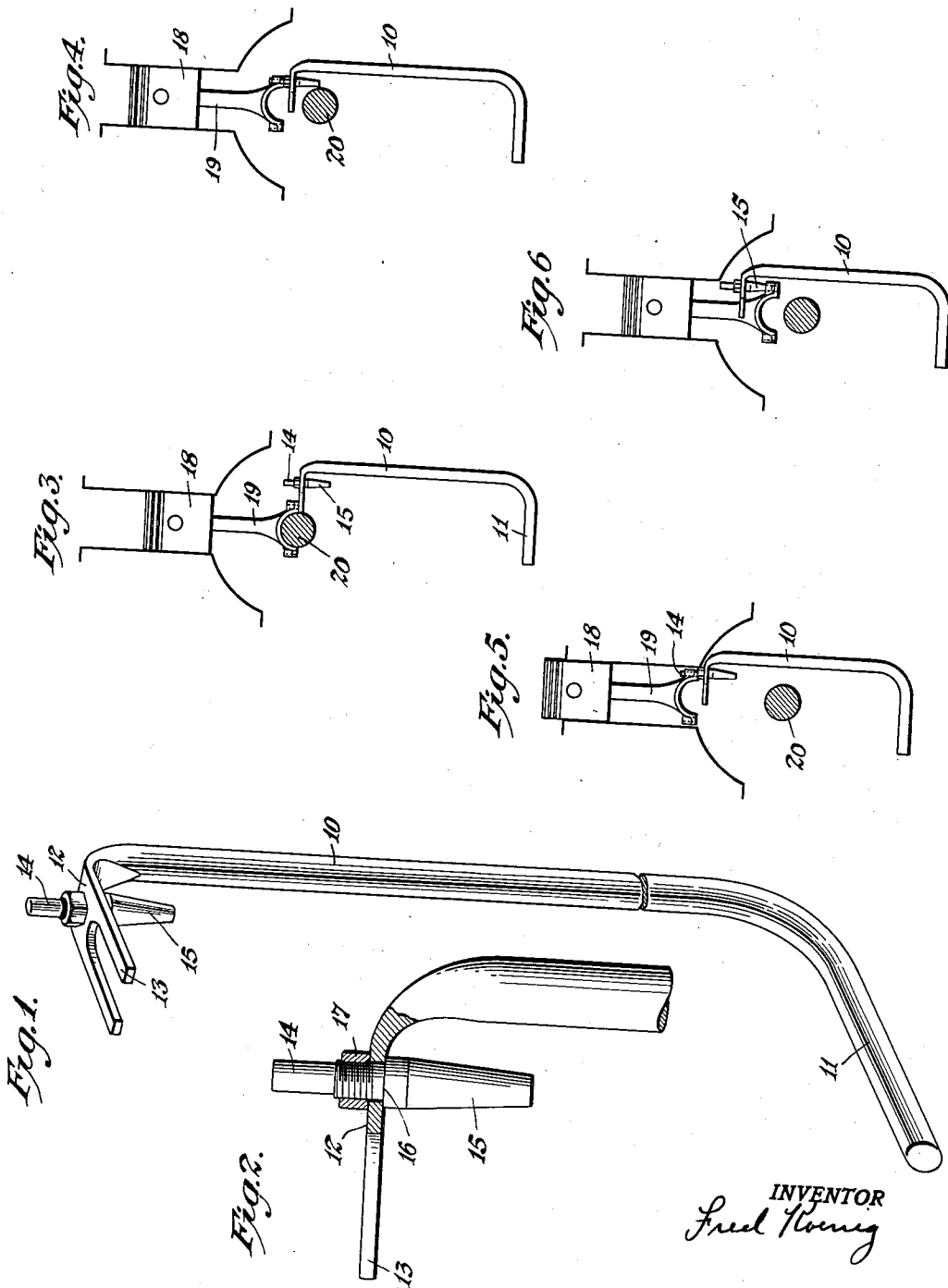


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PISTON ADJUSTING TOOL
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PISTON ADJUSTING TOOL

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1 Claim. (Cl. 81-3)

This invention relates to tools for adjusting the connecting rod and piston of combustion engines and has for its object to provide a simple, convenient and inexpensive tool of this sort which is capable of facilitating the raising and lowering of a piston when disconnected from its crank.

In taking a piston out or in applying new rings, the head of the engine is usually taken off, the pan or crank case dropped, and the connecting rod detached from its crank and pushed upward by hand. This is not convenient and in order to facilitate removal and attachment of the pistons and connecting rods and save time, the tool of this invention has been devised.

Fig. 1 is a perspective of a preferred embodiment of this invention.

Fig. 2 is the detail showing the upper end of the tool of Fig. 1 partly in section.

Fig. 3 shows the tool in position to lift the connecting rod and piston from the crank.

Fig. 4 shows the tool in position to further raise the connecting rod and piston.

Fig. 5 shows the connecting rod and piston after it has been moved to a position with the piston extending out of the block.

Fig. 6 shows the tool in position for lowering the piston and connecting rod for attachment to the crank.

The tool of this invention includes a main body portion 10 which, in the embodiment illustrated, is formed of bar stock having its lower end bent as shown to constitute a handle portion 11. The opposite end portion is bent and flattened as shown at 12 and extending in a direction substantially normal to the main body 10. This flattened end is recessed to provide bifurcated ends of a size adapted to receive the connecting rod between the bifurcated ends and turn same if desired. Between the bifurcated end 13 and the main body 10 are arranged a pair of pins 14 and 15, one of which extends upwardly as shown, and the other extending down toward the handle. These pins are preferably made integral, the lower pin 15 having a shoulder 16, while the adjacent end of the pin 14 is threaded to receive a nut which, when tightened, engages the upper face of the flattened portion 12 and clamps the shoulder 16 against the under face of the flattened portion. The integral pins are preferably inserted as a unit from below, after which the nut 17 is tightened.

After the crank case has been dropped and the connecting rod bolts removed to unclamp the connecting rod from the crank 20, the flattened end of the tool may be inserted under the connecting rod 19 to raise the piston 18. After the piston has been partially raised from the crank

the pin 14 may be inserted through one of the bolt holes in the lower end of the connecting rod, as shown in Fig. 4, for still further raising the piston by means of the connecting rod while the connecting rod is thus held in substantial parallelism with the tool. In Fig. 5 the tool has raised the connecting rod and piston to its maximum amount necessary with the top of the piston projecting above the top of the engine block. In this last position it is a comparatively simple matter to replace rings or entirely remove the piston and its connecting rod if desired.

When the piston or rings have been replaced the piston may be pushed down through the head end of the cylinder and when in the position shown in Fig. 6, the tool may be used to engage the connecting rod by having the tapered pin 15 engage one of the bolt holes in the lower end of the connecting rod while the bifurcated end 13 receives the connecting rod. In this way the connecting rod is held in substantial parallelism with the tool while the tool pulls the piston and connecting rod down far enough for attachment of the connecting rod to the crank. As the connecting rod and piston are lowered by the tool, it is a simple matter to partially rotate the connecting rod and piston if desired, whatever amount is sufficient to properly align them with the crank. The bifurcated end 13 receives the connecting rod and fits close enough about the connecting rod so as to be able to effect any partial rotation of the piston and connecting rod that may be necessary.

Use of this tool facilitates raising and lowering of the piston more quickly and easily than the same can be done by hand. A feature of this invention resides in the engagement of the pins 14 or 15 in the bolt holes in the lower end of the connecting rod so as to maintain the connecting rod in substantial parallelism with the body portion 10 of the tool.

I claim:

A piston adjusting tool having a main body portion, with a bifurcated part extending at substantially a right angle to said body portion, a pin on said bifurcated part between said body portion and the bifurcated end of said part, extending in a general direction of the body portion and of a size to engage a bolt hole in the end of a piston connecting rod, whereby said bifurcated part may receive said connecting rod while the pin is received in said bolt hole in a connecting rod and its attached piston pulled through a cylinder and turned the desired amount to align the connecting rod for attachment to its crank.

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