Dec. 12, 1939. G. E. BULLOCK 2,182,958

METHOD OF MAKING CRANKS FOR BICYCLES, VELOCIPEDES, ETC

Filed June 16, 1937

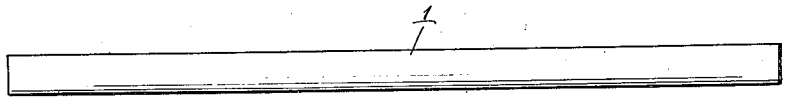


FIG1

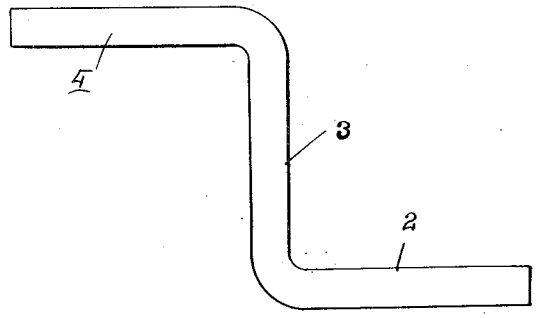


FIG2

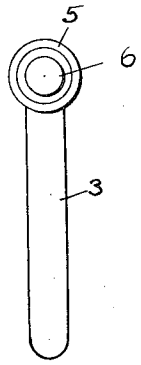


FIG4

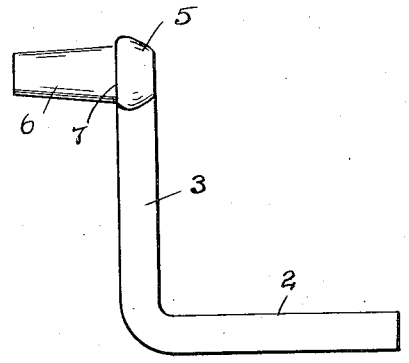


FIG3

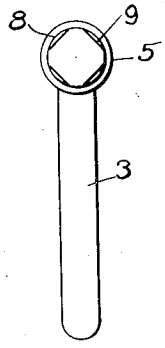


FIG6

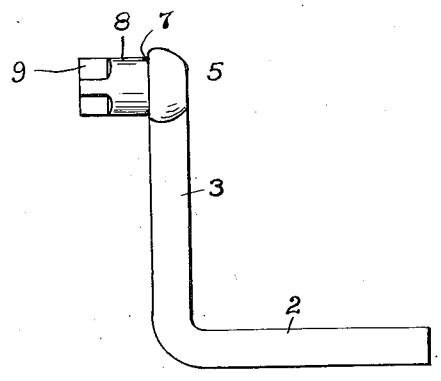


FIG5

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METHOD OF MAKING CRANKS FOR BICYCLES, VELOCIPEDES, ETC.

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Application June 16, 1937, Serial No. 148,526

2 Claims. (Cl. 29—6)

This invention relates to methods of forming cranks for bicycles, velocipedes etc., and has for its principal object to provide a new method of forming such a crank from a single piece of round steel rod stock.

This object and attendant advantages will become more readily apparent from the detailed description of the invention which follows, reference being had to the accompanying drawing in which

Figure 1 shows a length of the round steel rod stock from which the crank is formed.

Figure 2 illustrates in side elevation the form of the crank after the first step in the formation of the crank from the round steel rod stock has been completed thereon.

Figure 3 illustrates in side elevation the form of the crank after the second step in the formation thereof.

Figure 4 is an end elevation of the crank form illustrated in Figure 3.

Figure 5 illustrates in side elevation the completed form of the crank.

Figure 6 is an end elevation of the completed form of the crank.

In the several figures of the drawing like reference numerals indicate like parts.

Referring to the drawing reference numeral 1 indicates a predetermined length of round steel rod stock from which the crank is formed. In the first step of the formation of the crank this length of stock is bent into the Z shaped form illustrated in Figure 2 to provide the pedal shaft 2 at one end of the crank arm 3, and properly space this pedal shaft from the crank center. The latter at this stage comprises a crank pin 4 provided by a short length of the rod which is bent so as to project from the crank substantially parallel to the pedal shaft 2 but in the opposite direction.

For the next operation, the crank pin 4 is axially compressed and radially expanded to provide the enlarged hub 5 at the end of the crank with a substantially conical center pin 6 projecting from it so as to provide a stepped shoulder 7 between them.

In the final step of the method, the crank pin is again compressed so as to radially expand and form the limb on the crank having the cylindrical bearing or supporting surface 8 adjacent to the shoulder 7 and the substantially squared driving end 9 at the outer end thereof. In this way a crank limb, having an enlarged and square driving end, an enlarged cylindrical supporting or bearing surface, an enlarged hub, and a stepped bearing shoulder is formed integrally on the crank from part of the original round steel rod stock.

To simplify the method of making the crank, as above described, the second step, which forms the rod stock into the form illustrated in Figures 3 and 4, may be eliminated to form the limb on the crank from the form illustrated in Figure 2 directly onto the form illustrated in Figures 5 and 6.

I claim:

1. The method of forming a crank from round steel stock of uniform diameter which consists in bending a predetermined length of the round steel stock into a substantially Z shaped form to provide a crank arm with a crank pin and a pedal shaft projecting from the ends of the crank arm in opposite directions parallel to each other, then axially compressing the crank pin the full length thereof including the bend connecting the crank arm with the crank pin and thereby radially expanding these portions of the crank to form an enlarged hub on the end of the crank arm and a limb of increased diameter projecting from the hub.

2. The method of forming a crank from a predetermined length of round steel stock of uniform diameter which consists in bending the length of rod stock into a substantially Z shaped form to provide a crank arm with a pedal shaft and a crank pin projecting from the ends of the crank arm in opposite directions substantially parallel to each other, then axially compressing the crank pin to provide an enlarged hub on the end of said crank arm with a reduced substantially conical crank pin projecting from it with a stepped shoulder between the hub and the crank pin, then axially compressing and thereby radially expanding the conical crank pin to form a limb having a cylindrical surface adjacent said hub.

GILES E. BULLOCK.