J. F. SMERSCHNIK.

CARBON REMOVER.

APPLICATION FILED JAN. 18, 1921.

1,430,033.

Patented Sept. 26, 1922.

2 SHEETS—SHEET 1.

Fig. 1.

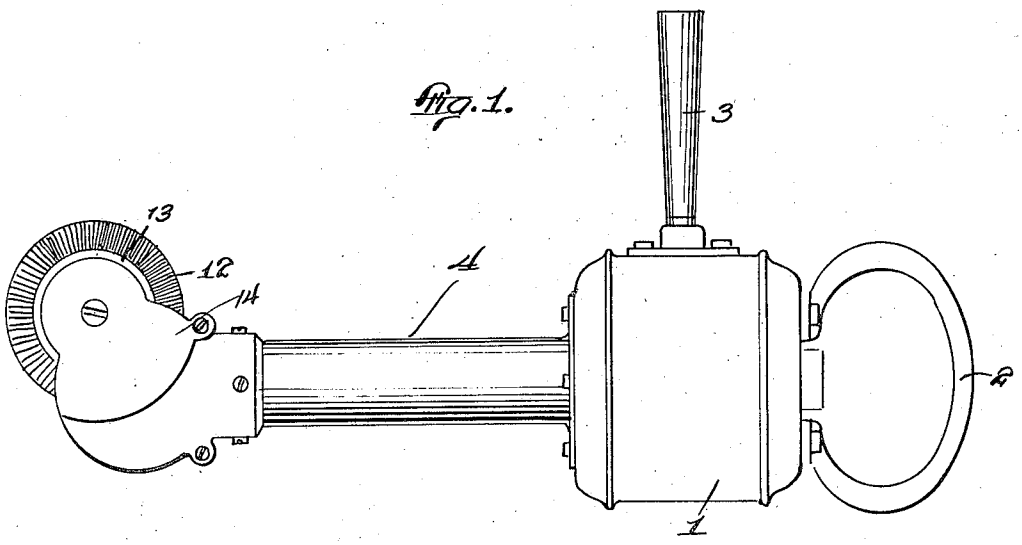


Fig. 2.

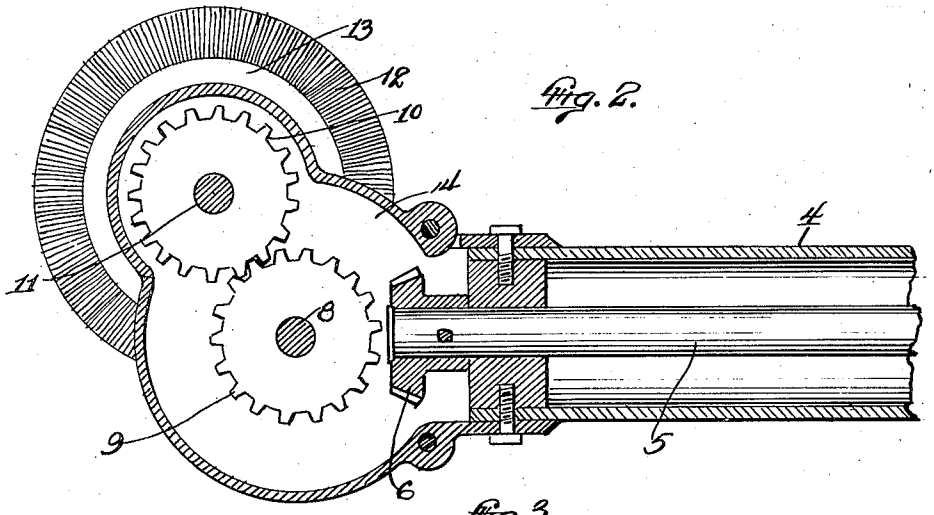
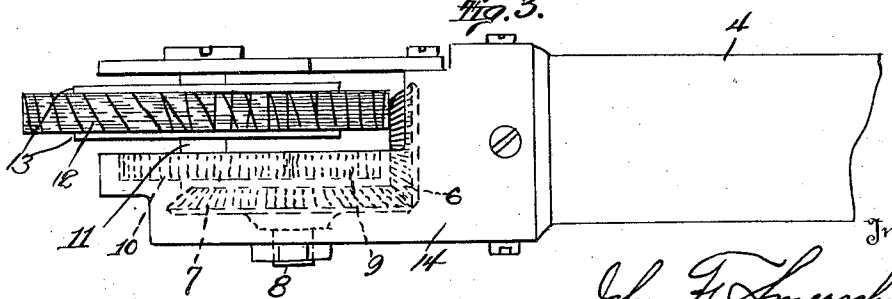


Fig. 3.



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2 SHEETS—SHEET 2.

Fig. 4.

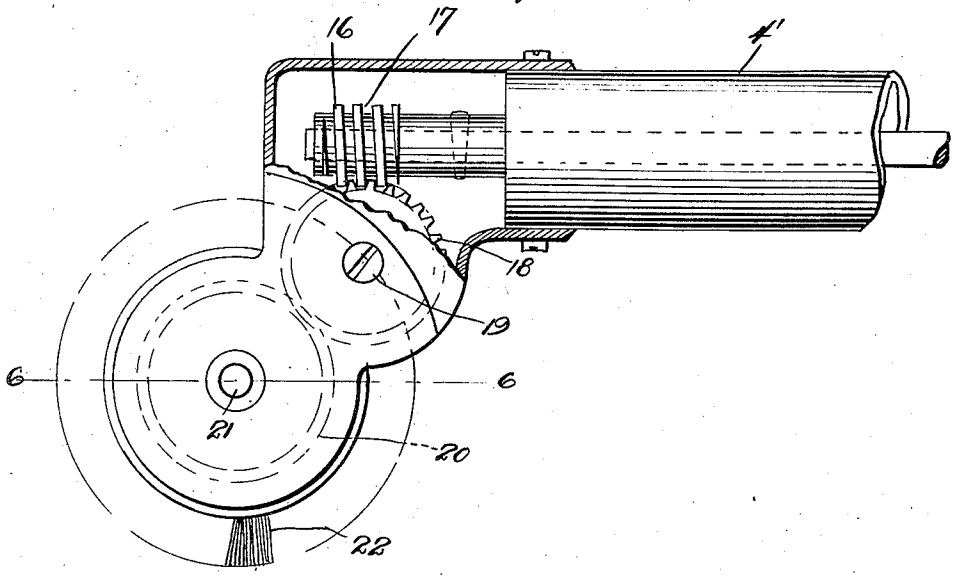


Fig. 5.

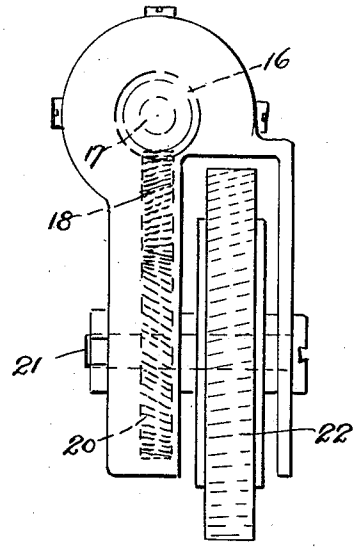
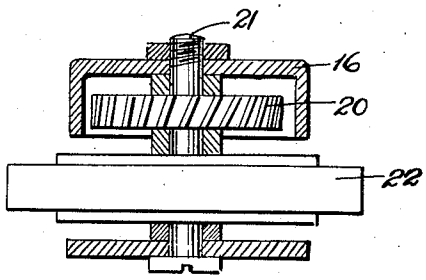


Fig. 6.



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UNITED STATES PATENT OFFICE.

JOHN F. SMERSCHNIK, OF WILKES-BARRE, PENNSYLVANIA.

CARBON REMOVER.

Application filed January 18, 1921. Serial No. 438,206.

To all whom it may concern:

Be it known that I, JOHN F. SMERSCHNIK, a citizen of the United States, residing at Wilkes-Barre, in the county of Luzerne and State of Pennsylvania, have invented certain new and useful Improvements in a Carbon Remover, of which the following is a specification.

This invention relates to carbon removers and more particularly to an electric motor operated brush for the purpose of scraping and brushing carbon from the interior of the cylinders of hydro-carbon motors.

One of the objects of the invention is to provide an electrically driven brush arranged so as to be conveniently inserted in the cylinder of a motor so that the brush may engage the walls of the cylinder and be rapidly rotated to scrape and brush the coating of carbon from the surface without injury to the surface of the motor or cylinder.

Other objects will appear upon consideration of the following detail description and accompanying drawings wherein:—

Figure 1 is a side elevation of the apparatus constructed in accordance with my invention,

Figure 2 is an enlarged view of the brush element on the gearing mechanism for driving the same,

Figure 3 is an edge view, of the mechanism shown in Fig. 2

Figure 4 is an elevation of a slightly modified from of the invention, parts being broken away to show the interior construction,

Figure 5 is an end elevation, and

Figure 6 is a horizontal section taken approximately on the line 6—6 of Fig. 4.

Referring to the drawings by numerals, and particularly to Figs. 1, 2 and 3, the electric motor 1 is provided with a handle 2 and a hand grip 3 whereby the operator may hold the apparatus conveniently for thrusting it into the cylinder of a motor. Attached to the motor casing is a sleeve 4 through which a drive shaft 5 extends. The drive shaft is mounted in suitable bearings and has its outer end equipped with beveled gear 6 adapted to mesh with a large bevel gear 7 on a transverse shaft 8 which extends through the gear casing and is journaled in opposite sides of the casing. The shaft 8 is also provided with a spur gear 9 in mesh with an auxiliary drive pinion 10 on the brush shaft 11. The shaft 11 is mounted in suitable bearings and has the brush element 12 mounted thereon which consists of a pair of disks 13 having the bristles of the brush mounted therebetween. The train of gearing and brush element are mounted in the casing 14, of such configuration that the portion housing the brush is offset from the handle. The brush element 12 is of a diameter large enough to extend outwardly from one side of the offset portion of the casing as shown in Figs. 1 and 2 of the drawings and it will be obvious from this construction that when the motor is energized the shaft 5 will be rotated so that the gearing mechanism will operate to rapidly rotate the brush 12. While this is being done, the brush element may be thrust into the motor cylinder and the bristles will be in contact with the wall of the cylinder to cause the carbon to be scraped and brushed therefrom.

The gear casing 14 is removably mounted on the end of the sleeve 4 and it will be observed from Fig. 2 that the entire gearing mechanism may be removed from the end of the device, and a fan or other suitable blowing means may be mounted on the end of the shaft and the shaft then operated by the motor to blow the carbon from the interior of the cylinder after it has been removed by the brush.

Referring particularly to Figs. 4, 5 and 6 wherein a modified form of the invention is illustrated, it will be noted that the sleeve 4^1 has a gear casing 16 attached thereto, and the end of the shaft is provided with a worm 17 adapted to mesh with a worm gear 18 on a transverse gear shaft 19. This gear is in mesh with a larger gear 20 on the brush shaft 21 which extends transversely through the gear casing and has the brush member 22 mounted thereon. This form of the invention operates in the same manner as the above described form except that it is driven by a worm gear instead of by a bevel gear. The gear casing is offset with respect to the central portion of the sleeve 4^1 so that the brush element 22 is disposed in a position to be thrust against the inner surface of the wall of the cylinder whereby the carbon may be conveniently removed when the motor is energized.

Minor changes may be made in the details

of construction without departing from the spirit of the invention or the scope of the claim hereunto appended.

What is claimed is:—

A carbon cleaner device comprising a hollow body, a casing at one end thereof having an offset portion, a motor secured to said body at the opposite end and having a shaft passing through said body and into said casing, a rotary brush mounted in said offset portion, and a train of gearing in said casing connected with said motor shaft and said brush, said motor having means thereon for handling said device.

In testimony whereof, I have affixed my signature in the presence of two witnesses.

JOHN F. SMERSCHNIK.

Witnesses:

HAROLD L. KIMBLE,

HENRY D. BARHIGHT.