May 9, 1933. D. P. MURPHY 1,907,435

VALVE SERVICE RACK

Filed July 29, 1932

Fig. 1.

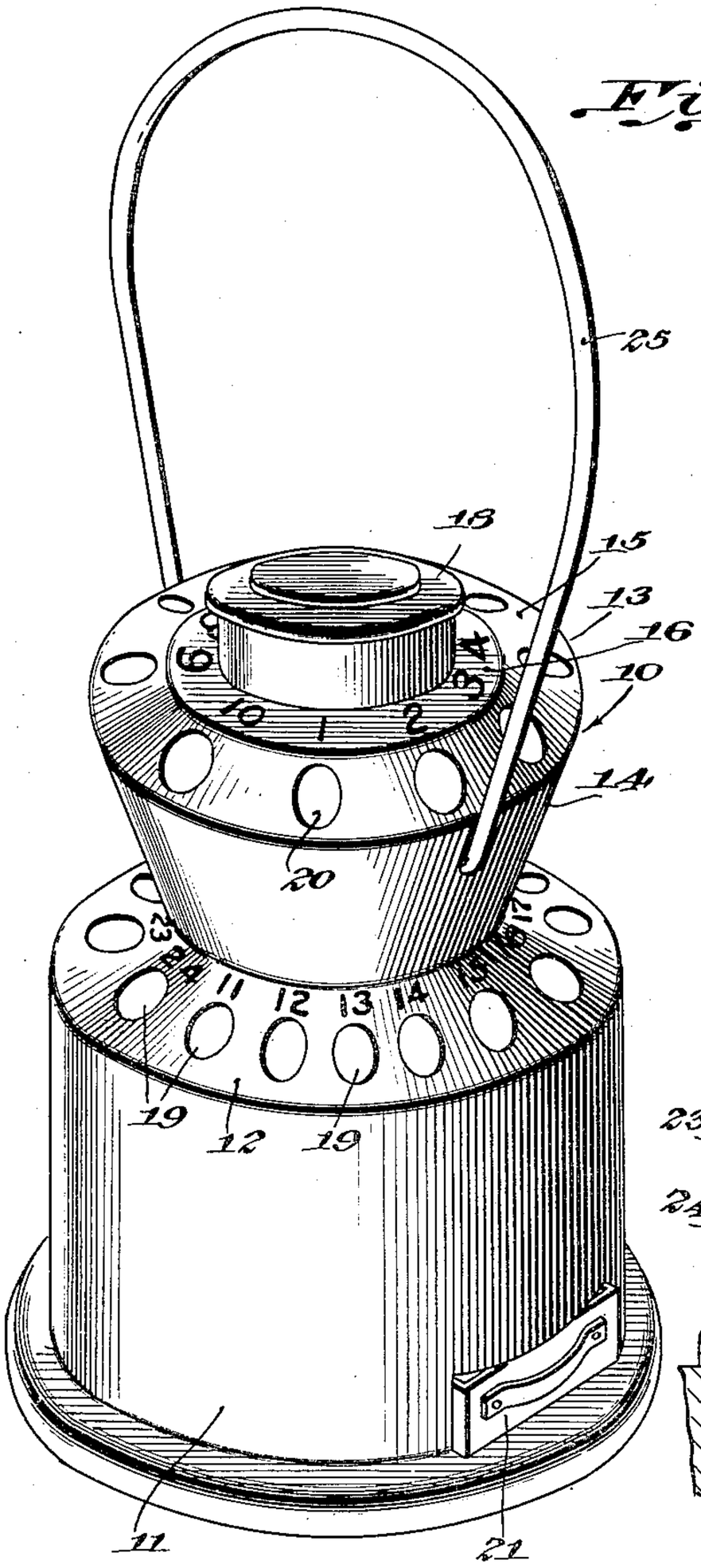
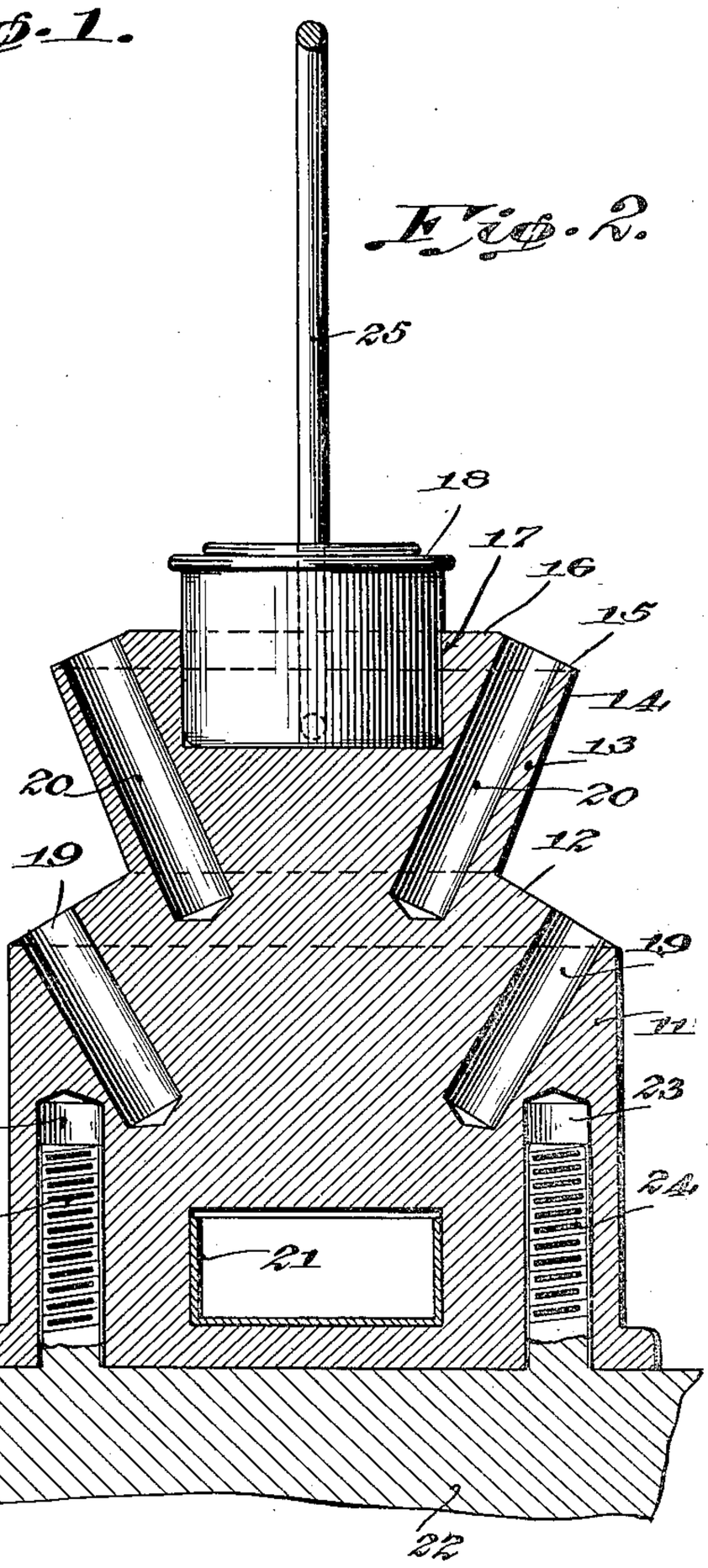


Fig. 2.



Inventor
D. P. Murphy,

By Paul L. Rose
His Attorney

Patented May 9, 1933 1,907,435

UNITED STATES PATENT OFFICE

DAVID P. MURPHY, OF BUTLER, PENNSYLVANIA

VALVE SERVICE RACK

Application filed July 29, 1932. Serial No. 626,245.

My invention relates to novel and effective means to facilitate the operation of reconditioning the valves of an engine and more particularly to racks for holding the engine parts removed incidental to the operation and the materials used in the operation conveniently in a position to facilitate the operation.

It is a well recognized fact that in the operation of valve grinding, more effective and satisfactory results are secured in a shorter time with less expense if the valves are kept free from foreign matter and in such order that they may be replaced in the same valve seats from which they were removed with the expenditure of no other effort than that required to partially disassemble the engine, grind the valves and replace the parts.

Heretofore it has been almost impossible for a mechanic to keep the valves in proper order, free from grit and foreign matter and conveniently separated due to the fact that no satisfactory means of holding the parts and materials incidental to the grinding operation has been provided which will be convenient to handle and mount upon the engine in an accessible position, which may be a part of the engine exposed incidental to the operation and which will stay in position without the necessity of providing some special means for holding or securing the same in position.

A common device for this purpose which mechanics have heretofore resorted to without much satisfaction or success is a stick of wood with a series of holes drilled therein or some such other contrivance for receiving the stems of the valves. However, these more or less make-shift devices have not proven satisfactory for the reason that they provide no means of readily securing the device to any part of the car or motor in a convenient position with the result that they are continually being knocked onto the floor with the result that the valves will come in contact with foreign matter and may drop out or become damaged due to contact with the floor surface or tools.

Another difficulty often encountered in grinding the valves of an internal combustion engine is the loss of some of the parts removed from the engine incidental to the grinding operation such as valve keys or pins since they are usually left lying around on any flat surface which must be used in the absence of proper holding means.

With the above mentioned and other difficulties and annoyances incidental to the operation of grinding the valves of an engine, it is a primary object of the present invention to provide a rack for holding the valves in consecutive order which may readily be mounted securely upon the engine block itself, if desired without the use of any special securing means whatever.

Another object of the invention is to provide a rack which will be compact in construction so as not to interfere with the movements of the mechanic in working on the motor.

Still another object of the invention is to provide a rack which will hold a large number of valves and which will provide means for holding the valve keys and pins when they are removed.

A further object of the invention is to provide in said rack a receptacle for holding the valve grinding compound used in the grinding operation and which must usually be left lying around in a small can.

A still further object of the invention is to provide all of these features in a rack which is highly effective, extremely simple in construction, cheap to manufacture and which may be produced at a very low cost.

Other objects and advantages of the invention will become apparent during the course of the following detailed description of the invention when read in conjunction with the accompanying drawing, which forms a part of this specification and in which;

Figure 1 is a perspective view of a preferred embodiment of the invention, and

Figure 2 is a central vertical sectional view thereof.

Referring now more particularly to the drawing, wherein like numerals refer to like parts throughout the same, 10 indicates the valve rack which is preferably formed from a single block of wood although it could read-

ily be formed from metal if desired. The rack comprises a substantially circular base portion 11, preferably several inches in height and which terminates in an inclined ledge 12 extending entirely therearound. The circular ledge 12 is terminated inwardly by a head or upper body portion 13 which is formed integral with the base or lower body portion but considerably less in circumference. This head portion has the sides thereof tapered outwardly from the juncture with the ledge 12 as at 14, and is formed on the circular edge of its upper face with an inclined ledge 15, which is of lesser inclination than the ledge 12. The flat top 16 of the head portion 13 is formed with a depression 17 in which is mounted a can 18 for holding valve grinding compound or the like.

A series of sockets or holes 19 are drilled into the base portion 11, said sockets opening on the ledge 12 and being disposed at such an inclination to the vertical that their axes are at approximately right angles to said ledge.

Another series of sockets or holes 20 are drilled into the head portion 13, said sockets opening upon the ledge 15 and also having their axes approximately at right angles to said ledge.

It will thus be seen that the holes 20 more nearly approach the vertical than the holes 19 so that when the stems of valves are seated therein, the heads of the valves in the base sockets will clear the stems of the valves in the head sockets.

The sockets will be numbered in consecutive order, in the embodiment shown, the head sockets being numbered from 1 to 10 and the base sockets from 11 to 24 so that this rack will accommodate the valves of any engine, using two valves per cylinder, up to 12 cylinders.

The inclined ledges 12 and 15 provide a surface at substantially right angles to the open end of the sockets which receive the valve stems, thus facilitating the positioning of the valves therein and also dispose the indicia placed thereon to identify the sockets by number at such an angle as to be conveniently read.

For the purpose of holding the valve keys which are so often temporarily lost or misplaced, I provide a drawer 21 in the base of the rack, said drawer preferably running entirely through from one side to the other so that it can be opened from either end thereof.

In order to provide for securely mounting the rack on the engine block 22, holes 23 are drilled in the bottom of the base to fit over the stud bolts 24 commonly carried by the motor block which are exposed incidental to the grinding operation. In the form of the invention shown the holes 23 are shown as being preferably spaced to fit over two spaced studs but in case the spacing of the studs varies, the rack can be held just as satisfactorily on one stud.

For convenience in handling the rack when it is desired to carry the valves to a refacing lathe or to move the rack for any purpose, a bail handle 25 is provided, having the ends thereof pivotally secured in suitable openings on opposite sides of the head portion 13.

It will be noted that due to the angular setting of the holes 20, the valve heads will be disposed a sufficient distance from the can 18 to permit ready access thereto to reach the grinding compound therein.

From the foregoing description, it will be readily apparent that I have provided an extremely simple effective and inexpensive valve rack which will greatly facilitate the operation of grinding motor valves and which overcomes the difficulties theretofore encountered in the use of other devices which have failed to accomplish the purpose for which they were designed.

While a preferred embodiment of the invention has been shown and described, it will be understood that various modifications in the details of construction and in the selection of materials may be resorted to without departing from the spirit of the invention as defined in the appended claims.

I claim:

1. A valve service rack comprising a substantially circular body portion having a series of inclined sockets formed therein and extending substantially therearound for the reception of the stems of valves to be held thereby, and having a vertical socket formed in the bottom thereof, for the reception of an engine block stud to mount said rack upon said block.

2. A valve service rack comprising a substantially circular base portion formed with an inclined annular ledge on its upper face and a series of inclined sockets opening onto said ledge, a head portion rising centrally from said base portion and formed with an annular inclined ledge bordering its upper face and a series of inclined sockets opening into said ledge, said sockets in said head portion being disposed at a lesser inclination than those in said base.

3. A valve service rack comprising a substantially circular base portion formed with an inclined annular ledge on its upper face and a series of inclined sockets opening onto said ledge, a head portion rising centrally from said base portion and formed with an annular inclined ledge bordering its upper face and a series of inclined sockets opening onto said ledge, said sockets in said head portion being disposed at a lesser inclination than those in said base, said base portion having a socket formed in the bottom thereof for the reception of a stud bolt carried by a motor block to mount said rack on said block.

4. A valve service rack comprising a sub-

stantially circular base portion formed with an inclined annular ledge on its upper face and a series of inclined sockets opening onto said ledge, a head portion rising centrally from said base portion and formed with an annular inclined ledge bordering its upper face and a series of inclined sockets opening onto said ledge, said sockets in said head portion being disposed at a lesser inclination than those in said base, a receptacle adapted to contain valve grinding compound seated in the upper face of said head portion and a sliding drawer carried in said base portion for the reception of keys from the valves carried by said rack.

5. As an article of manufacture, a valve service rack comprising a wooden body portion formed with a substantially circular base provided with an inclined ledge on its upper face and a series of inclined sockets opening onto said ledge, said base being formed with a head portion arising centrally therefrom and also provided with an inclined ledge on its upper face and a series of inclined sockets opening into said ledge, the sockets of said base and head being disposed at a slight angle relative to each other, said base being provided with a sliding drawer for the reception of valve keys, and said head having a can adapted to contain valve grinding compound seated centrally in the upper face thereof, and said base having a vertical socket formed in the bottom face thereof adapted to fit over a stud bolt in a motor block.

In testimony whereof I affix my signature.

DAVID P. MURPHY.