R. L. LIVINGSTON.

DIVIDERS.

APPLICATION FILED MAY 27, 1920.

1,398,871. Patented Nov. 29, 1921.

FIG. 1.

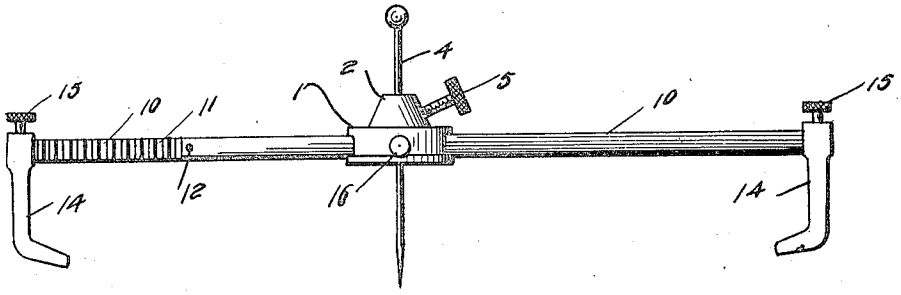


FIG. 2.

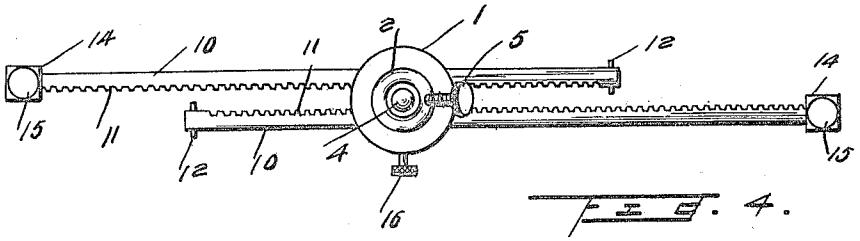


FIG. 4.

FIG. 3.

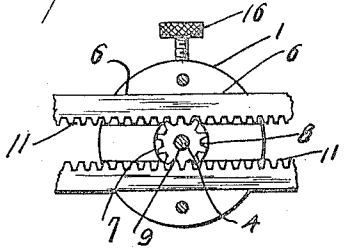
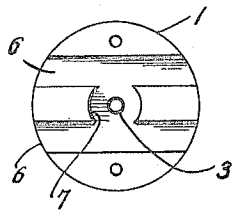


FIG. 5.



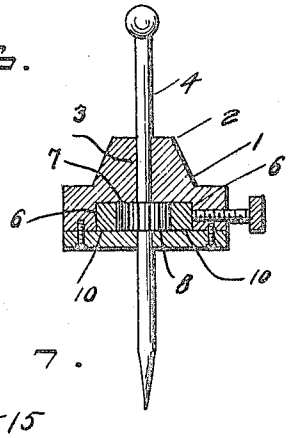


FIG. 6.

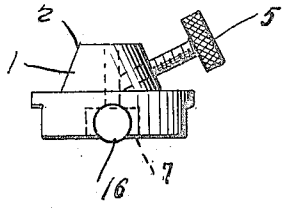
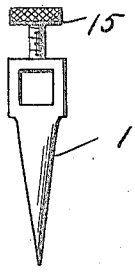


FIG. 7.



INVENTOR.

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DIVIDERS.

1,398,871. Specification of Letters Patent. Patented Nov. 29, 1921.

Application filed May 27, 1920. Serial No. 384,641.

To all whom it may concern:

Be it known that I, ROBERT L. LIVINGSTON, a citizen of the United States, residing at Williamsport, in the county of Lycoming and State of Pennsylvania, have invented certain new and useful Improvements in Dividers; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

This invention relates to quick acting universal dividers and it consists in the novel features hereinafter described and claimed.

An object of the invention is to provide dividers of the character stated which may be used for quickly and accurately determining the center point of an object or for ascertaining the diameter or transverse dimension of an object.

With this object in view the divider comprises a block having an opening passing transversely therethrough and located at its center. Channels are provided in the block and are disposed parallel with each other and at equal distances at the opposite sides of the center of the block. The said channels are disposed at right angles to the said opening. The channels are connected together at a point between their ends by a recess having arcuate walls. A pinion fits snugly in the recess and is provided with an opening which registers with the opening in the block. Rack bars are slidably mounted in the channels and are provided at their inner edges with teeth which mesh with the teeth of the pinion. The rack bars may carry at their outer ends points, or arms as desired. A pin is insertible through the opening in the block and the opening in the pinion and means is provided for fixing the pin with relation to the block. Means are provided for preventing the rack bars from disengaging the block.

In the accompaying drawing:—

Figure 1 is a side elevation of the dividers.

Fig. 2 is a top plan view of the same.

Figs. 3 to 7 are detailed views of the features of the invention.

The dividers comprise a block 1 which is circular in plan and which is provided at its upper side with a conical portion 2. An opening 3 passes through the center of the block 1 and through the conical portion 2 thereof. A pin 4 is insertible through the opening 3 and may be secured at an adjusted position therein by means of a set screw 5 which is threaded in the side of the conical portion 2 and which at its inner end engages the side of the pin 4.

The block 1 is provided at its under side with channels 6 which are parallel with relation to each other and disposed at the opposite sides of the opening 3 through the block and at equal distances therefrom. The channels 6 at a point midway between their ends are connected together by means of a recess 7 which is provided with arcuate walls. A pinion 8 is snugly received in the recess 7 and its teeth project into the channels 6. The pinion 8 is provided at its center with an opening 9 which receives the pin 4 when the pin is applied to the block. Rack bars 10 are provided at their inner sides with teeth 11 and the said rack bars are slidably mounted in the channels 6. The teeth 11 mesh with the teeth of the pinion 8. The bars 11 are provided at one end with transversely disposed pins 12 which prevent the bars from becoming disconnected from the block 1. The bars 11 may carry at their opposite ends points 13 or arms 14 and these points and arms are provided with set screws 15 which are adapted to engage the end portions of the bars 11 whereby they are held in position thereon. A set screw 16 passes through the side of the block 1 and is engageable with the outer edge of one of the bars 11 whereby the said bars may be held at adjusted positions with relation to the block 1. From the foregoing description it will be seen that a quick acting universal divider and gage is provided. This instrument may be used for finding the center of work to be laid out for machines, also for tool makers, pattern makers, draftsmen, or in any instance where it becomes necessary to work from a center point. It will promptly find or indicate the center between two given points such as a line or lining up from core holes and lugs on castings during the operation of machining the same. It can be used by draftsmen when finding the center of a drawing and avoids the use of scales or dividers which consume time in performing such operation. The point may be substituted by the arm and hence the instrument may be used as calipers to gage the interior diameter of an object or the exterior diameter or transverse dimension of the same. An advantage had by the instrument is that

it promptly determines the center of a piece of work that is not of uniform thickness and width such as lugs on castings and other parts.

Having described the invention what is claimed is:

1. An instrument of the class described having relatively slidable gage bars, a block provided with grooves mounting said bars and with a recess intermediate the grooves and communicating therewith, a gear member in said recess, teeth on the bars in mesh with those of the gear member, and a center point member to directly journal the gear, said center point passing through and beyond the gear and block.

2. An instrument of the class described having relatively slidable gage-bars, a block provided with grooves mounting said bars and with a recess intermediate the grooves and communicating therewith, a gear member in said recess, teeth on the bars in mesh with those of the gear member, and a center point member passing through and beyond the gear and block to directly journal the gear, said block having an extension, and means mounted by the extension to secure the center point member in different positions relative to said head.

3. An instrument of the class described having a head, relatively movable gage bars mounted thereby, a gear, teeth on the bars meshing with the gear, a center point member directly journaled in said gear, and means to secure the center point member in different positions relative to said head.

In testimony whereof I affix my signature in presence of two witnesses.

ROBERT L. LIVINGSTON.

Witnesses:

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WARREN J. DIEFFENDERFER.