Nov. 21, 1950 D. E. MULLIN 2,531,077

PIPE QUARTERING DEVICE

Filed Oct. 19, 1946

Fig. 1

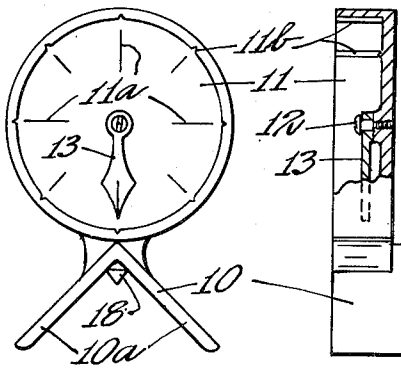


Fig. 2

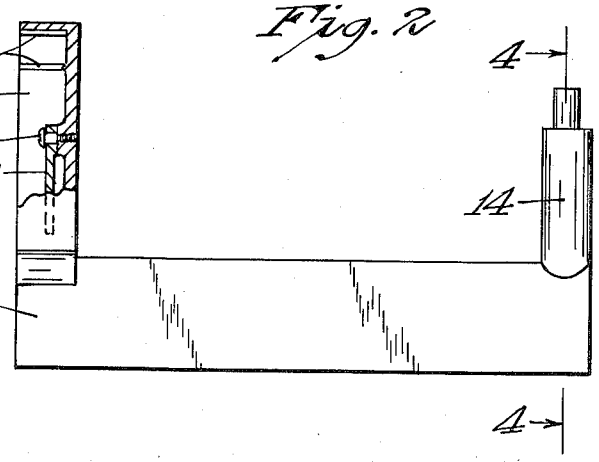


Fig. 3

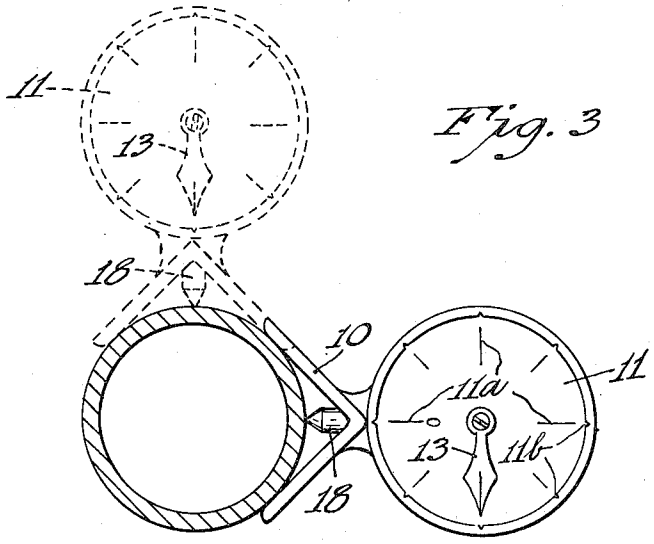
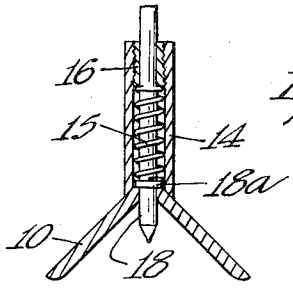


Fig. 4



Inventor

Douglas E. Mullin

By Chas. E. Reif

Attorney

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PIPE QUARTERING DEVICE

Douglas E. Mullin, Minneapolis, Minn.

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1 Claim. (Cl. 33—189)

1

This invention relates to a quartering device, and while the invention might have various applications, it particularly is designed for use in quartering pipe. In fabricating pipe of various kinds it is the common practice to quarter said pipe or to make certain marks on said pipe spaced 90 degrees apart circumferentially of said pipe. As commonly carried out, this quartering operation is slow and tedious. One common method is to wrap a strip of paper or other flexible material about the pipe, then fold this into quarter portions and then use the meeting lines of these portions and the ends of the strip to mark the pipe, the strip being placed around the pipe.

It is an object of this invention to provide a device by means of which the quartering operation can be very easily and quickly performed.

It is a further object of the invention to provide a device comprising a member formed as an angle at its lower side, which member can be placed on a pipe to extend longitudinally thereof and engage the pipe along spaced lines, said member preferably including a dial and also including a pointer adapted to swing to vertical position by gravity.

It is more specifically an object of the invention to provide a quartering device comprising a member formed on its lower side as an angle, said member being adapted to be placed on a pipe and extend longitudinally thereof, a dial carried at the top and adjacent one end of said member and being graduated circumferentially, a pointer cooperating with said dial and mounted to swing to vertical position by gravity, means also being preferably carried by said member for marking said pipe.

These and other objects and advantages of the invention will be fully set forth in the following description made in connection with the accompanying drawings in which like reference characters refer to similar parts throughout the several views and in which:

Fig. 1 is a view in end elevation of the device;

Fig. 2 is a view in side elevation as seen from the right of Fig. 1;

Fig. 3 is a view in end elevation showing the pipe in vertical cross section and showing the device in a different position in dotted lines; and

Fig. 4 is a vertical section taken on line 4—4 of Fig. 1, as indicated by the arrows.

Referring to the drawings, a device is shown comprising a member 10. Member 10 is formed as an angle and at its lower side has sides or surfaces 10a diverging at an angle, which angle

2

preferably is substantially 90 degrees. Member 10 is adapted to be placed on the exterior of a pipe and to extend longitudinally thereof so that said sides or surfaces 10a will engage said pipe along spaced lines. A dial member 11 is provided, and while this could be variously located, in the embodiment of the invention illustrated it is shown as disposed at the top of and adjacent one end of member 10. Dial 11 is graduated circumferentially and has marks or lines 11a thereon which will designate certain degrees, and while the number of lines 11a can be varied, said lines are shown as indicating 90 degree intervals and 45 degree intervals. Member 11 is shown as of cylindrical or cup-like form and the graduations 11a are placed on the vertical wall at the inside of said cup or cylinder. Preferably graduations 11b align circumferentially with the graduations 11a, are formed on the cylindrical portion of member 11 and comprise small notches or grooves extending parallel to the axis of said cylinder. A shaft 12 is secured in member 11 centrally thereof and while this could be variously formed, in the embodiment of the invention illustrated it is shown as a screw having one end threaded into the vertical wall of member 11 and having a rounded grooved head. A hand or pointer 13 has a hub journaled on shaft 12 and freely swingable on said shaft so that it will swing to a vertical position by gravity. Hand 13 is shown as having a rather enlarged head or lower portion so as to be somewhat weighted. The vertical center line of dial 11 is substantially coincident with the vertical bisector of the angle in member 10.

Adjacent the other end of member 10 and extending upwardly therefrom is a tube 14. As shown in Fig. 4, tube 14 has disposed therein a compression coiled spring 15 bearing at its upper end against a plug 16 threaded into the top of tube 14 and having a slotted upper end. At its lower end spring 15 engages a collar 18a formed on a punch 18, which above said collar extends through said spring and through a bore in plug 16 so as to normally have its upper end disposed some distance above the top of plug 16. Below collar 18a punch 18 extends through a bore in member 10, said punch having a sharpened lower end. The axis of punch 18 is disposed substantially in the bisecting plane of the angle in member 10.

In operation when it is desired to quarter a pipe, member 10 will be placed on said pipe at the outside thereof and will extend longitudinally of the pipe. Member 10 will be positioned so that

pointer 13 extends downwardly with its lower pointed end in alignment with the graduations 11*a* and 11*b* at the bottom of member 11. Punch 18 will be pushed upwardly in tube 14 and compress spring 15 when member 10 is placed on the pipe. When pointer 13 is positioned as above stated, the operator will strike the top of punch 18 a blow with a hammer so that said punch will make a mark on the pipe. Member 10 will now be swung or moved to the side of the pipe, as indicated in Fig. 3, and positioned so that pointer 13 aligns with the graduations at the bottom of member 11. Punch 18 will again be struck and another mark made on the pipe. Member 10 will then be moved to position at the bottom of the pipe and then to a position at the left-hand of the pipe, as seen in Fig. 3. The operation described will be repeated and both of these subsequent positions and marks made on the pipe. The pipe has now been quartered or provided with marks at 90 degree intervals. A pencil or other instrument can be guided by and moved along the edges of angle 10 to draw or make lines lengthwise of the pipe. Such lines are often desired.

From the above description it will be seen that I have provided a simple and highly efficient device for quickly, easily and efficiently quartering a pipe. The member 12 can be quickly moved to its various positions and indicator 13 quickly assumes its vertical position so that the quartering operation is quite rapid. The pipe is quartered with great accuracy. A great deal of time and labor is saved by use of the device. It has heretofore been proposed to use a device having an adjustable level therein. Such a device however is very slow in operation. The present device is a great improvement in the art. The device of course will be suitably finished to have a pleasing appearance. The device has been amply demonstrated in actual practice and found to be very successful and efficient.

It will of course be understood that various changes may be made in the form, details, arrangement and proportions of the parts, without departing from the scope of applicant's invention, which generally stated, consists in a device

capable of carrying out the objects above set forth, in the parts and combinations of parts disclosed and defined in the appended claim.

What is claimed is:

A quartering device for a pipe having in combination, an elongated member of much greater length than width adapted to extend quite a distance longitudinally of a pipe and formed as an angle on its lower side, the sides of said angle being adapted to engage said pipe along spaced lines, a disc-like member upstanding at one end of said device and having a projecting boss at its center, said disk-like member having a cylindrical flange extending thereabout directed toward said end of said device, a pointer adapted to swing by gravity pivoted to said boss centrally of said member within said flange, said member having circumferentially spaced graduations thereon and said flange having circumferentially spaced notches therein alined with said graduations, a tube upstanding from the opposite end of said elongated member disposed centrally transversely thereof and having a vertical cylindrical bore therein, a punch slidable in said bore having its upper end disposed above said tube, and resilient means holding said punch in its upper position but permitting downward movement thereof when struck to mark said pipe.

DOUGLAS E. MULLIN.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date
D. 141,088	Boyce	May 5, 1945
49,553	Safford et al.	Aug. 22, 1865
191,586	Hatch	June 5, 1877
548,329	Stemmerich	Oct. 22, 1895
657,443	Newton	Sept. 4, 1900
742,077	Sovelius	Oct. 20, 1903
751,763	Wagor	Feb. 9, 1904
948,523	Perkins	Feb. 8, 1910
1,378,287	Shaylor	May 17, 1921