

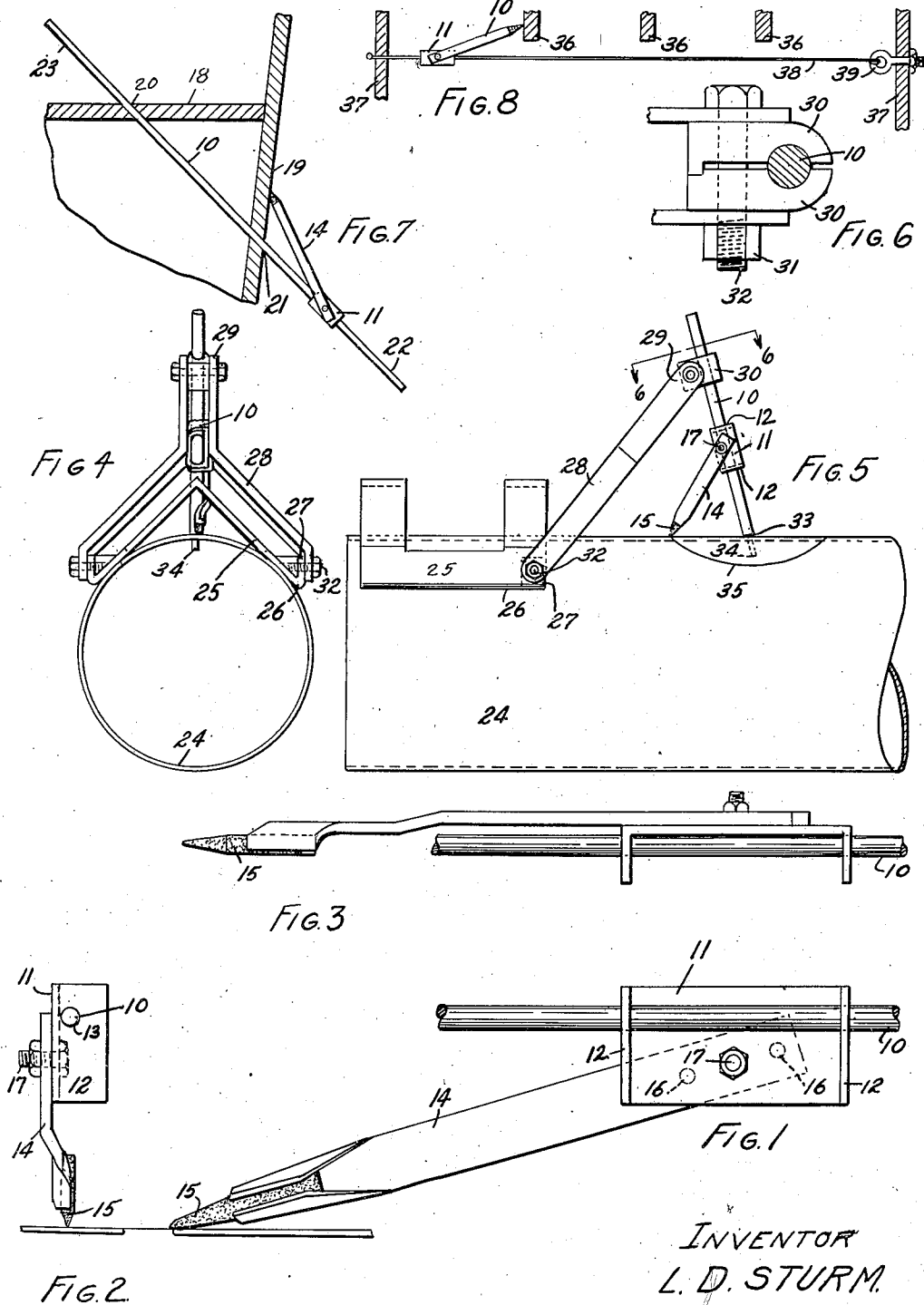
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PIPE MARKING DEVICE

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PIPE MARKING DEVICE

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1 Claim. (Cl. 33—21)

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This invention relates generally to ellipsographs and particularly to an ellipsograph especially adapted for marking ellipses or circles on angling or curved or irregular surfaces.

The main object of this invention is to provide an exceedingly simple and efficient instrument whereby ellipses may be easily and accurately scribed upon inclined, irregular or curved surfaces in order to maintain a correct relationship to a predetermined axis.

The second object is to make an ellipsograph whereby circular openings may be made in the deck and side of a vessel for the reception of a hawse pipe.

The third object is to provide a device of the class described whereby the process of laying out an opening in a round pipe for the reception of another round pipe, whether normal to or inclined with the axis of the first pipe, will be greatly facilitated.

The fourth object is to produce an ellipsograph of the class described which will lay out ellipses in corners or angles as easily as it will on a flat surface.

A further object is to produce an ellipsograph which can be used for indicating clearances over long spans.

I accomplish these and other objects in the manner set forth in the following specification as illustrated in the accompanying drawing, in which:

Fig. 1 is a side elevation of the device.

Fig. 2 is an end elevation.

Fig. 3 is a plan of the device.

Fig. 4 is an end elevation of the device as applied to a circular pipe.

Fig. 5 is a side elevation of Fig. 4.

Fig. 6 is a fragmentary enlarged section taken along the line 6—6 in Fig. 5.

Fig. 7 is a fragmentary section through a portion of a ship's deck and side showing the manner of laying out a hawse pipe opening.

Fig. 8 is a section through some overhead joists and a pair of supports showing the use of elongated wire for a long span axis.

Similar numerals refer to similar parts throughout the several views.

Referring in detail to the drawing, there is shown in Figs. 1 to 3 a guide rod 10 which must be held along the axis of the circle or ellipse or of the pipe which is to be passed through the elliptical opening being formed.

On the guide rod 10 is mounted a slide 11, whose laterally turned ears 12 are provided with openings 13 to slidably receive the rod 10. Se-

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cured to the back of the slide 11 is a pencil supporting arm 14 whose pencil 15 may be held thereon in any convenient manner. The arm 14 is preferably provided with additional holes 16 for varying the radius thereof. A bolt 17 is used to clamp the arm 14 in a desired relationship to the slide 11.

The operation of this simple form of the device is best shown in Fig. 7, wherein is illustrated the deck 18 and the side 19 of a vessel through which it is desired to install a hawse pipe not shown. In this case it is only necessary to drill a hole 20 in the deck 18 and a second hole 21 in the side 19, both in axial alignment to receive the guide rod 10. The slide 11 is then placed on the end 22 to mark the elliptical opening on the side 19 or on the end 23 to mark the elliptical opening on the deck 18.

In this case, the operator need only revolve the arm 14 on the guide 10, holding the point of the pencil 15 against the work resulting in the formation of a true ellipse which will perfectly receive a cylindrical object having a radius equal to the distance of the point of the pencil 15 to the axis of the rod 10.

In the form of the device shown in Figs. 4, 5 and 6, there is shown a pipe 24 in which it is desired to form an opening to receive a second pipe whose axis is inclined somewhat from the axis of the pipe 24. To perform this class of work there is provided a channel shaped base 25 whose lowermost edges 26 are provided with up-turned ears 27 to which are attached the bent arms 28 between whose upper ends 29 are pivotally mounted the clamping jaws 30, adapted to receive the rod 10. The jaws 30 may be clamped upon the rod 10 by tightening the nut 31 on the bolt 32. It will be noted that this tightening action not only clamps the jaws 30 on the rod 10 but also maintains angular relationship between the rod 10 and the arms 28, whose lower ends are pivotally connected to the ears 27 by means of the bolts 32.

The lower end 33 of the rod 10 is provided with a point 34 of reduced diameter which projects through a hole formed at the center of the opening to be scribed.

It follows that if the point 34 is inserted into the opening and the angle between the members 10 and 28 is fixed, then the base 25 is fixed and all that the operator need to do is to move the arm 14 around the rod 10 with the pencil 15 resting upon the pipe 24, thereby scribing the line 35 conforming to the outside of the pipe to be connected to the pipe 24.

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In Fig. 8 is shown the use of my device for insuring the proper clearance for a round pipe when said pipe is to be placed close to rafters 36. In this case, suitable supports 37 are provided and a strong wire 38 is stretched between the supports 37 by means of the eye bolt 39 and the wire 38 is used as a guide for the slide 11, making it possible to use the arm 14 to scribe the necessary clearance on the rafters 36 by means of the pencil 15.

While several representative applications of my device have been illustrated, it must be understood that the field of use is practically unlimited, and that while the device itself need not be altered, various means may be found convenient for supporting the guide along the imaginary axis of the pipe or conduit to be installed. For example, in place of employing a pencil point to mark a circle or ellipse on a steel plate, a cutting torch may be substituted and the cutting done directly instead of resorting to a preliminary marking operation.

While I have thus illustrated and described my invention, it is not my intention to be limited to the precise form shown herein but I do intend to cover such forms and modifications thereof as fall fairly within the appended claim.

I claim:

A device of the class described consisting of a V-shaped saddle adapted to be mounted on a rounded pipe, a pair of arms hinged to the base

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of said saddle at one end thereof in spaced relation to each other at their lower ends, and in close relationship to each other at their opposite ends, a pair of jaws hingedly mounted between said closely spaced arm ends, said jaws having a round groove formed therebetween for the reception of a guide rod, a clamping bolt for holding said jaws upon said guide rod and fixing its relation to said arms, a slide mounted on said rod, a scribing arm having one end hinged to said slide and the other end provided with a scribing point, the lower end of said guide rod having a shouldered point thereon adapted to occupy a hole formed in the center of the ellipse formed by said scribing point.

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