

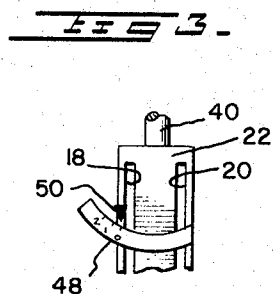
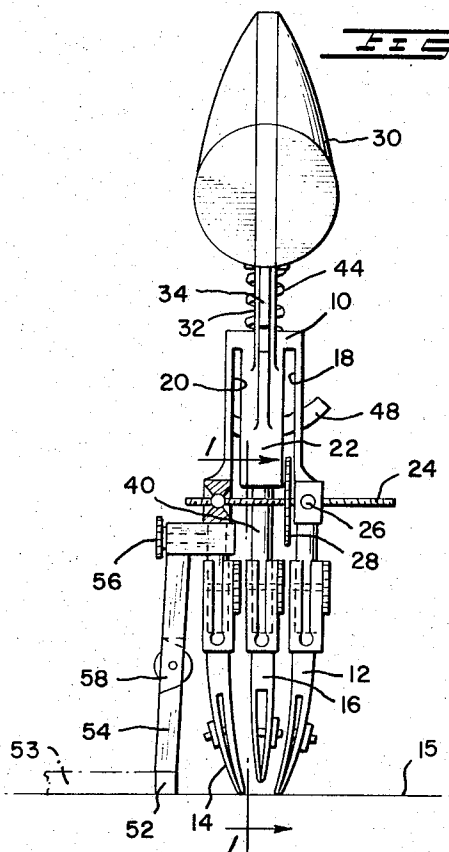
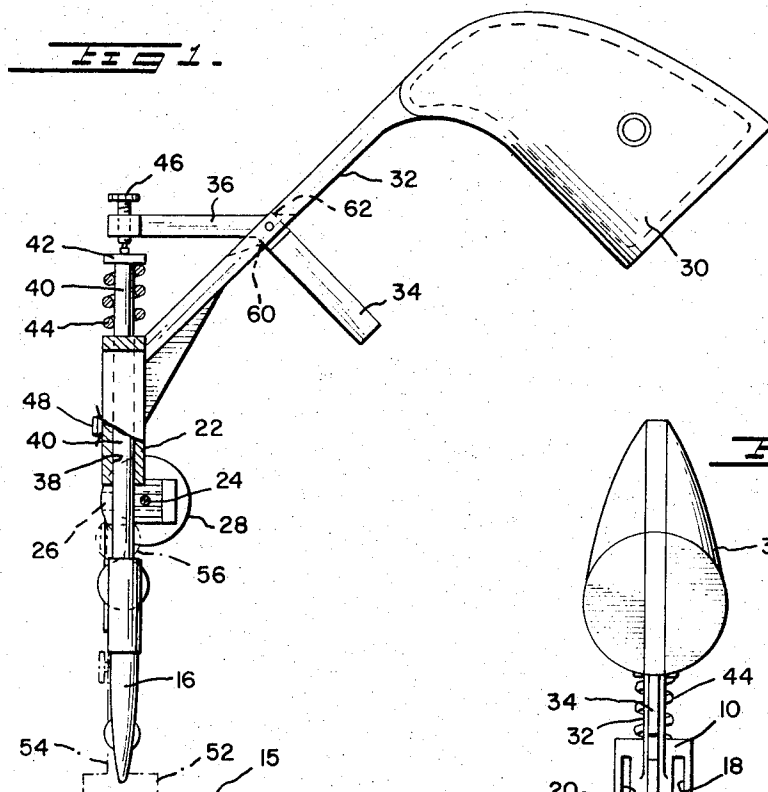
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MULTI-SCRIBE DRAFTING INSTRUMENT

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1

2

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MULTI-SCRIBE DRAFTING INSTRUMENT
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ABSTRACT OF THE DISCLOSURE

A multi-scribe drafting instrument carries a plurality of scribe pens. One of the pens is biased to a non-working position while the others are fixed in a working position. The instrument is provided with a trigger and pistol-type grip for intermittently moving the biased pen to a working position by simple finger movement during the drafting operation and while the other pens are drawing continuous lines.

The invention disclosed relates to an improvement in a multi-scribe drafting instrument.

Scribes as herein defined include pencils, ruling pens, conventional pens, metal scribes or any other suitable marking devices.

Multi-scribe drafting instruments are old in the art as exemplified by the Paulsen Patent No. 1,191,725. As disclosed therein, a plurality of pens may be simultaneously used for drawing straight or circular lines. Also, as indicated in the Paulsen patent, any one of the pens may be located in working position, or moved therefrom and located in a non-working position. The prior art does not disclose an efficient multi-scribe drafting instrument wherein a movable scribe is normally held in a working or non-working position with respect to another scribe on the drafting instrument and wherein means are included whereby the movable scribe is biased so that it may be intermittently moved to and held in a working or non-working position by simple finger movement of the draftsman or where the movable scribe may be periodically moved into or out of working position by automatic means.

It is an object of this invention to provide a multi-scribe drafting instrument wherein one of the scribes may be readily moved into or out of working position to produce an interrupted line by that scribe.

It is another object of the invention to provide a multi-scribe drafting instrument wherein one of the scribes has means for normally biasing it into or out of a working position and associated means for moving it into or out of working position intermittently.

Another object of this invention is a relatively light and simply constructed multi-scribe drafting instrument which may be used by a draftsman in like manner to the single type of scribe to which he is very accustomed.

The advantage of such a device is that it is possible, while drawing one line or several parallel lines, to simultaneously draw an interrupted parallel line, as, for example, a series of dots or a series of dots and dashes, or any combination thereof.

The foregoing and other objects and advantages will become apparent from the description of the instrument when read in light of the accompanying drawings wherein:

FIGURE 1 is an elevational view of the drafting instrument partly in section taken along the lines 1-1 of FIGURE 2;

FIGURE 2 is an end view of FIGURE 1; and

FIGURE 3 is a fragmentary view of a portion of the device.

As seen in FIGURES 1 and 2, there is provided a holder 10 which supports ruling pens 12 and 14 which may be fixed in position relative to a surface 15 upon which the

work will be done and hereinafter will be referred to as the "fixed pens." Intermediate of the fixed pens 12 and 14 is a movable ruling pen 16 which is normally out of working position but readily movable thereto. The pens 12, 14 and 16 all work in parallel whereby the lines drawn will be parallel to one another.

Each of the pens 12 and 14 is carried on the lower end of a supporting arm which is formed from the holder 10 by cut-out portions 18 and 20 so that, as is common in the art of drafting instruments, the fixed pens 12 and 14 are constantly biased away from one another. The portion of the holder between the cut-out portions 18 and 20 forms a middle portion 22 which serves to slidably support structure associated with the movable pen 16 as will be described later. An adjusting screw 24, suitably threaded in opposite directions on either side of the center line thereof, is threaded through a pair of cylinders 26 in each of the arms supporting the fixed pens 12 and 14. A thumb wheel 28 is fixed to the screw 24 intermediate the ends thereof and serves to provide means to rotate the screw and thereby adjust the spacing between the pens 12 and 14. The above-described adjustment structure is well known in the art of drafting instruments and obviously any suitable structure providing similar capability can be used in lieu of that described.

In order to furnish means to suitably hold the instrument, a handle 30, preferably of the pistol-grip type, is connected to the holder 10 through a stem 32. A trigger 34, connected to a lever member 36, is pivotally mounted on the stem 32, through an opening therein defined by surfaces 60 and 62 for purposes to be described below.

Referring specifically to the middle portion 22 as shown in FIGURE 1, a bore 38 is disposed therethrough and carries a rod 40, which comprises an extension of the movable pen 16, slidably therein. The rod 40 is formed with transversely extending flange 42 at the upper end thereof and is biased in an upward direction by a spring 44 so that the movable pen 16 is biased normally positioned above the fixed pens 12 and 14 in a condition out of contact with the surface 15. The lever 36 is provided with an adjustment screw 46 threadably received in the free end thereof abutting the upper surface of the flange 42 on the rod 40.

Referring now to FIGURE 3 of the drawings, the device is provided with an arcuate scale 48 which is connected to the arm supporting the fixed pen 14 and is disposed so as to extend across the arm supporting the fixed pen 12. A pointer 50 is mounted on the arm supporting the fixed pen 12 and is disposed to indicate relative displacement of the arcuate scale 48 with respect thereto. The scale 48 may be graduated in any suitable manner so that relative displacement between the pens 12 and 14 is indicated thereon. If, for example, the device is to be used for drawing pipe line symbols, the graduations on the scale may indicate the diameter of the pipe represented by the spacing between lines drawn by the pens 12 and 14.

A guiding element consisting of a foot 52 and an arm 54 is connected to the arm supporting the pen 14 through a standard thumb screw connection 56. The arm 54 is articulated by a standard thumb-screw lock joint 58 midway between the ends thereof.

In operation the pens are properly loaded with ink and the desired spacing between the pens 12 and 14 is set by adjustment of the thumb wheel 28. The user, holding the instrument by the handle 30 with his index finger on the trigger 34, draws the instrument across the surface 15 so that the pens 12 and 14 describe two spaced, parallel lines. While drawing the instrument across the surface 15, the user squeezes the trigger 34 which, through the lever 36, depresses the movable pen 16 to bring that pen into contact with the surface 15 and thereby interpose a third line midway between the lines inscribed by the pens 12

3

and 14. By proper sequential or periodic actuation of the trigger, the third or center line inscribed by the pen 16 may be broken to form a dotted line, or a dot-dash line to indicate the standard phantom line symbol, or the center line of a pipe, for instance, or any other suitable symbolic indication as desired.

The stroke of the lever 36, when actuated by the trigger 34, is controlled by contact of the pen 16 with the surface 15, which is felt by the user of the instrument. On the other hand, the lever 36, together with the pen 16, cannot be biased by spring 44 over a certain limit, given by contact of the lever 36 with the surface 62 in stem 32 and of the trigger 34 with the surface 60. The height of the pen 16 in the non-working position over the surface 15 is controlled by proper adjustment of the adjusting screw 46 in the end of lever 36.

While inscribing, the foot 52 may be placed against a straight edge (shown in phantom at 53), curvilinear or any other form to follow a desired course with the instrument. The joint 58 in the arm 54 is furnished to provide means to adjust the angle of the lower surface of the foot 52 with respect to the surface to be inscribed, in accordance with the relative angular disposition of the pen 14 with respect to the center line of the instrument. It may also be desirable to provide a second guide member connected to the arm supporting the pen 12 so that the weight of the instrument may be carried primarily by the guide members rather than the pens 12 and 14.

It should also be understood that, in place of the mechanical or manual trigger-actuated center movable pen structure, an automatically operated mechanism which causes the pen 16 to contact the paper intermittently may be substituted therefor. Such devices are available on the market and generally consist of a wheel which runs on the surface to be scribed consisting of or rotating a cam-like device to periodically bring the pen 16 into contact with the paper or lift it therefrom.

Obviously, through suitable changes in the levering and biasing means, the movable pen 16 may be biased into normal contact with the surface 15 and displaced therefrom by actuation of the trigger 34 to provide an identical result.

What has been described above is set forth as exemplary of teaching in accordance with the invention to enable those skilled in the art in the practice thereof and it should be understood that other modifications can be made thereto without exceeding the scope of the invention. For example the trigger or automatic dotting mechanism de-

4

scribed above could obviously be replaced with a simple thumb-depressed button while the pistol grip handle could be replaced with another suitable type structure for conveniently holding the instrument. It should therefore be understood that, within the scope of the appended claims, the invention may be practiced other than as specifically described.

What is new and therefore desired to be protected by Letters Patent of the United States is:

1. A multi-scribe drafting instrument including a holder, a pistol grip handle carried by said holder for engagement with one hand by an operator, a first scribe means carried by said holder in a normal working position, a second scribe means carried by said holder and movable from a working position to a non-working position, means biasing said second scribe means toward one of said positions, and lever means pivotally mounted on said handle for single finger operation by said operator with said same hand in order to displace said second scribe means toward the other of said positions for intermittent working thereof.

2. A multi-scribe drafting instrument in accordance with claim 1 wherein said first scribe means comprises a pair of scribes disposed on either side of said second scribe means.

3. A multi-scribe drafting instrument in accordance with claim 2 wherein said means biases said second scribe means toward the non-working position thereof.

4. A multi-scribe drafting instrument in accordance with claim 3 wherein a guide member is removably attached to said holder, said guide member comprising at least one arm coextensive with and disposed in spaced relationship to said first scribe means to engage a guiding edge placed on the surface to be inscribed.

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