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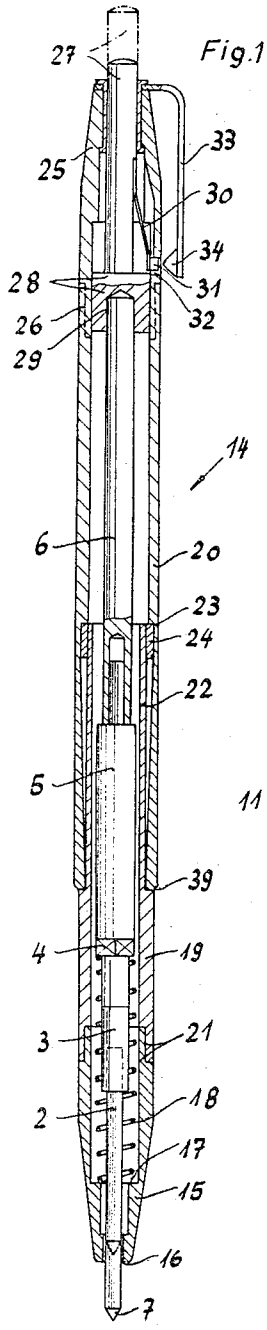

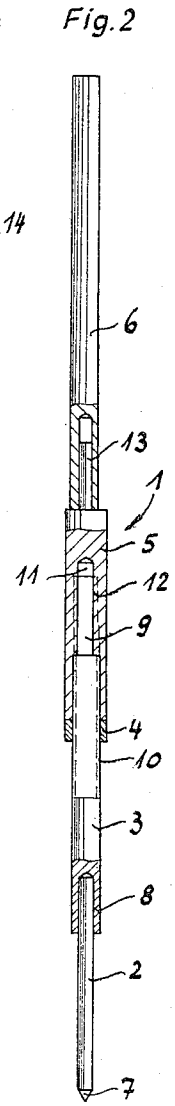

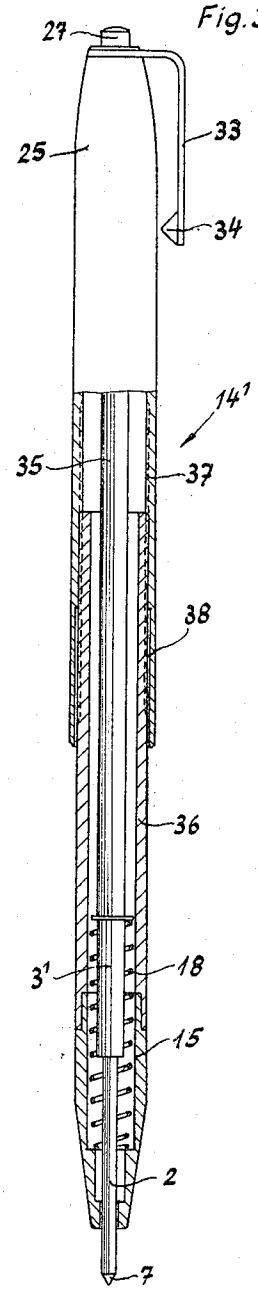

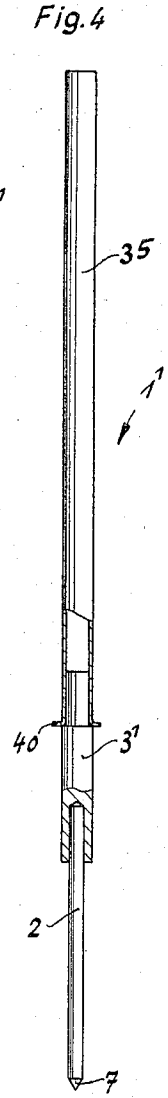

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5 Claims. (Cl. 30—164.9)

ABSTRACT OF THE DISCLOSURE

A scribing tool which comprises a tabular member having a predetermined length and being provided with a rear end and an open front end. A scribing-pin member having a length substantially smaller than half the predetermined length is provided. An elongated support member is provided, having a length substantially greater than the length of the pin member and having an end portion detachably supporting the pin member. The support member and the pin member are accommodated in the tubular member and are slidable therein between a retracted position in which the pin member is located inwardly of the open front end and an advanced position in which the pin member projects outwardly beyond the open front end of the tubular member.

This invention relates to a scriber, i.e. to a marking device for tracing working lines on a workpiece.

A scriber has already become known in which an engraving tool with a pointed tip can be brought from its retracted protected position into the advanced working position by operating a button at the top end of a holder in which the engraving tool is slidably mounted. This scriber has various disadvantages inasmuch as it has to be tilted so that the tip of the engraving tool points upwardly and the engraving tool can fall back into the holder on account of gravity, the scriber has to be provided with special clamps for holding the engraving tool in working position and the engraving tool itself has to be provided with a holding thread longitudinally along its entire shaft, whereby a considerable increase of construction costs is caused and the mode of operation of the scriber is relatively complicated.

It is the object of the invention to provide a scriber which is substantially improved over the known scriber and which comprises an engraving tool with a pointed tip and a holder which do not have the described disadvantages.

This object is achieved according to the invention by providing a scriber which comprises a holder composed of several members, and an elongated inner member composed of at least two parts and longitudinally slidable in said holder between a protected retracted position of rest and an advanced fixed working position, at least the lower part of the inner member being constructed as a relatively thin engraving tool the major part of which projects from the part supporting it and the pointed tip of which can be re-pointed, and the holder being provided at its lower or forward end with a cylindrical bore through which the engraving tool can freely slide without play.

Thus the construction of the scriber proposed by the invention is very simple and inexpensive and the operation of the scriber is as convenient as that of a ball point pen.

A further development of the invention is to be seen in the special kind of mounting of the engraving tool in its supporting piece and further in the feature that the engraving tool can be easily replaced and the entire inner member is adjustable in length. A further development

2

of the invention is the manner in which the inner member is assembled of two or three parts and the special construction of the holder. It is essential that the lower end of the holder in which the cylindrical bore for the engraving tool is arranged consists of particularly sturdy and hard material and that the holder is provided with double walls in its central region so as to be particularly resistant to pressure and bending.

A further feature of the invention is to be seen in that the pressure mechanism of the holder is constructed of two independent operating members and that the holder itself may be adjustable in length, particularly when the inner member itself is not adjustable in length in a simple form of construction.

Two embodiments of the invention will now be described by way of example and with reference to the accompanying drawing, in which:

FIG. 1 is a longitudinal section through a scriber according to the invention consisting of a holder and an elongated inner member;

FIG. 2 is an elevational view, partly in section, of the inner member of the scriber;

FIG. 3 is a view similar to FIG. 2 showing a simpler embodiment of the invention, and

FIG. 4 is a similar view showing the inner member of the scriber illustrated in FIG. 3.

FIGS. 1 and 2 show a scriber which consists of a holder **14** and an elongated inner member **1** which is longitudinally slidably mounted in the holder **14**. The inner member **1** comprises a hard material engraving tool **2** with a pointed tip **7**, a piece **3** supporting the engraving tool **2**, a check nut **4**, a central piece **5** and an end piece **6**. The relatively thin engraving tool **2** is made of high quality hard material, such as sintered material or a hard steel alloy, and constitutes the actual scribing means. At its rear end the engraving tool **2** shrunk by heat treatment is arranged with snug fit in a bore **8** of the supporting piece **3**. The rear end portion **9** of the supporting piece **3** is provided with an external thread **10** of an expedient length by means of which it can be screwed into the front end portion of the central piece **5** which for this purpose is provided with a longitudinal bore **11** having an internal thread **12**. The two pieces **3** and **5** are thus longitudinally adjustable according to the length of the re-pointing of the engraving tool **2**. The check nut **4** secures as counter piece the longitudinal adjustment of the pieces **3** and **5** carried out in accordance with the tool length used for re-pointing the engraving tool **2**. The end piece **6** is constructed as a tube and pushed with tight fit onto a pin **13** formed at the rear end face of the central piece **5**. The supporting piece **3**, the check nut **4**, the central piece **5** and the end piece **6** may consist of rust-proof nonferrous metal or of aluminum because of the lighter weight.

The above-described inner member **1** is used in the holder **14** as shown in FIG. 1. This holder **14** corresponds in principle to the holder of a ball point pen but is specially designed for the present purpose. The holder **14** is preferably provided with a conical lower or front member **15** as head piece which conveniently consists of hardened steel or the like so that it is not damaged when coming into contact with the workpiece in case it has been forgotten to push the engraving tool **2** into its operational position or in case the engraving tool **2** has become too short due to wear and must be re-pointed. The conical lower or front member **15** is provided with a cylindrical bore **16** the diameter of which is so selected that the engraving tool **2** of hard metal can pass without friction and play and its relatively short projecting portion cannot break when scribing. The conical lower or front member **15** has an internal shoulder **17** which serves as the lower abutment for a compression spring **18** in-

serted into the holder **14**, whereas the check nut **4** provides for the upper abutment for this compression spring **18**. A sleeve member **19** is attached to the member **15**, one part engaging the other in telescopic fashion so as to provide a tightly fitting strong connection **21**. A further sleeve member **20** is fitted to an external shoulder **39** on the sleeve member **19** and this sleeve member **19** projects into the sleeve member **20** with an internal part **22** to an internal shoulder **23** of the sleeve member **20** and is strongly secured in that position by means of a clamping ring **24** arranged between the sleeve member **20** and the internal part **22**. By the overlapping engagement of the sleeve members **19** and **20** the holder **14** is provided with a strong double-walled reinforcement along its central part which is the part under most bending strain.

At the top or rear end the holder **14** is provided with a cap **25**. This cap **25** may be made screwable by means of a thread **26** indicated by the broken lines in FIG. 1 and contains the pressure mechanism of the holder **14**. This mechanism consists of a pressure pin **27** which cooperates at its lower end with a slide **28** provided with a bore **29** into which the end piece **6** of the inner member **1** is inserted. A tongue **30** resilient toward the outside is arranged on the pressure pin **27**, a button **31** of the tongue **30** engaging in a corresponding recess **32** of the cap **25**. At the top or rear end of the cap **25** a clip **33** is provided which is slightly resilient and has a nose **34** which exactly engages the button **31** which can be pressed out of the recess **32** so that the inner member **1** which was kept fixed in the described manner is released and can retract in a self-acting manner under the action of the compression spring **18** into the rest position indicated by dot and dash lines in which position the pointed tip **7** is retracted through the bore **16** in the holder **14** and is thus protected.

When the inner member **1** is pushed forward by depressing the pressure pin **27** it is brought into the advanced position for further use as shown in FIG. 1 and is retained in this working position by means of the resilient tongue **30** and the button **31**. The sleeve members **19** and **20** of the holder **14** as well as the cap **25** may be made of light metal or plastics material.

The pointed tip **7** of the engraving tool **2** of the inner member **1** can be re-pointed until the engraving tool **2** is used up. Then expediently the supporting piece **3** is replaced by another supporting piece carrying a new engraving tool **2**. To ensure that the inner member **1** will always be of the same length in spite of the engraving tool **2** having been re-pointed and thus shortened, the inner member **1** can be adjusted by means of the threads **10** and **12**. Since the pressure pin **27** only serves for advancing the inner member **1** and the retraction from the working position is effected by pressing the clip **33**, it is prevented that the pointed tip **7** retracts from its working position into its rest position when the pressure pin **27** is erroneously depressed.

The embodiment according to FIGS. 3 and 4 differs from the embodiment described above inasmuch as an inner member 1^1 is provided which is particularly simple and inexpensive and not adjustable in length, a supporting piece 3^1 of the inner member 1^1 being fixedly inserted in a holding tube **35** which in this embodiment provides for the required length for inserting it into its holder 14^1. Since the inner member 1^1 is not adjustable in length, the holder 14^1 comprises in this embodiment two sleeve members **36** and **37** apart from the conical lower or front part **15** which members can be screwed together by means of a thread **38** the length of which corresponds approximately to the length of re-pointing the engraving tool **2**. The thread **38** is provided with friction so that the length of the holder is reliably maintained after it has been adjusted. Onto the top part of the holder 14^1 a cap **25** with the described pressure-actuated mechanism according to FIG. 1 may be screwed which is also provided with a pressure pin **27** and a release clip **33**. The lower end of the holding tube **35** is bent to the outside to form a flange **40** which constitutes an abutment for the upper or rear end of the compression spring **18**.

I claim:

1. A scribing tool comprising, in combination, a tubular member having a predetermined length and being provided with a rear end and an open front end; a scribing-pin member of a length substantially smaller than half said predetermined length, said pin member having a pointed tip adapted to be sharpened when dull and thereby being subject to consequent reduction in length; an elongated support member having a length substantially greater than the length of said pin member and including two aligned portions one of which is provided with an end portion detachably supporting said pin member, said support member and said pin member being accommodated in said tubular member slidable therewithin between an inoperative retracted position in which said pin member is located inwardly of said open front end, and an operative advanced position in which said pin member projects outwardly beyond said open front end of said tubular member; and cooperating engaging means provided on said aligned support member portions connecting the same for longitudinal movement relative to one another between a plurality of selected positions for varying said length of said support member to compensate for shortening of said pin member, and for maintaining said portions in said selected positions.

2. A scribing tool comprising, in combination, a tubular member having a predetermined length and being provided with a rear end and an open front end; an expendable scribing-pin member having a length substantially smaller than half said predetermined length, said pin member having a pointed tip adapted to be sharpened when dull and being subject to consequent reduction in its length; an elongated support member having a length substantially greater than the length of said pin member and including two aligned portions one of which is provided with an end portion detachably supporting said pin member, said support member and said pin member being accommodated in said tubular member slidable therewithin between an inoperative retracted position in which said pin member is located inwardly of said open front end, and an operative advanced position in which said pin member projects outwardly beyond said open front end of said tubular member; connecting means adjustably connecting said aligned support member portions for longitudinal movement relative to one another between a plurality of selected positions whereby to enable adjustment of the combined length of said support member portions to compensate for changes in the length of said pin member; and locking means for locking said portions in the respective selected positions against movement relative to one another.

3. A scribing tool as defined in claim **1**; and further comprising biasing means permanently urging said support member and said pin member to said retracted position.

4. A scribing tool as defined in claim **3**; and further comprising actuating means operatively connected with said support member for advancing said support member and said pin member to and maintaining said members at said advanced operative position; and separate release means operative for releasing said actuating means for return of said support member and said pin member to said retracted position.

5. A scribing tool as defined in claim **3**, said tubular member being provided with an internal abutment shoulder inwardly adjacent said open end, and said support member being provided with an additional abutment shoulder in the region of said end portion thereof, said biasing means bearing on both said shoulders for urging said pin member to said retracted position; and wherein said biasing means is a helical spring surrounding said support member intermediate and bearing on both said

shoulders for permanently urging said support member and pin member to said retracted position.

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