Dec. 19, 1950 W. D. CORLETT, JR 2,534,811

SILENT STOCK TUBING

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Fig. 1

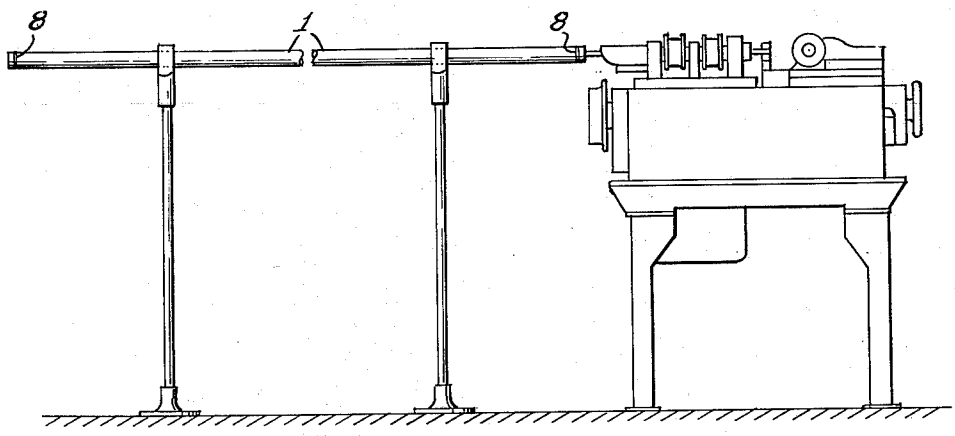
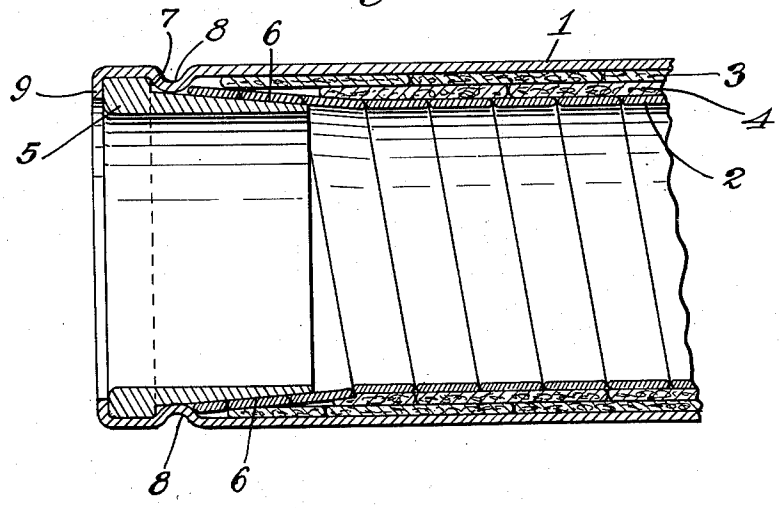


Fig. 2



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SILENT STOCK TUBING

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9 Claims. (Cl. 138—64)

1

This invention relates to a work holding or supporting means, and it has for one object to provide a mounting or finishing means for such a holder. In general, in the particular form here illustrated, the invention is shown and described in connection with what is usually called a "stock tube." Such tubes find one use in connection with screw machine or other metal working devices, and the invention is illustrated in that connection.

Another object is to provide a suitable, quiet or cushioning stock tube to reduce the sound incident to its use.

Another object is to provide an end construction whereby the various parts which are assembled together in the stock tube are properly and firmly held in suitable relation.

A further object is to provide an end construction so arranged that tubes of varying length may be readily finished and assembled with a minimum of effort and without machining.

Other objects will appear from time to time throughout the specification and claims.

This invention is illustrated more or less diagrammatically in the accompanying drawings, wherein:

Figure 1 is a diagrammatic side elevation of the tube as in use; and

Figure 2 is a longitudinal section taken on an enlarged scale, illustrating the end construction of the stock tube.

Like parts are indicated by like characters throughout the specification and the drawings.

The stock tube includes an outer shell or casing 1 which is tubular in shape and preferably, although not necessarily, made of metal. Within this tube is positioned a helically wound or otherwise shaped liner 2 which is preferably in the form of a metallic helix which may or may not be formed of spring material.

The shell or outer casing 1, as shown in Figure 2, is longer than the liner which it encloses and overlaps its ends, and is arranged as will be described below to hold the various parts in place.

Between the liner and the casing or shell is mounted sound absorbent material. In the particular form here shown this includes an outer layer 3 and an inner layer 4 of sound absorbent wrapping. These may be felt, cloth, fabric or material of any sort which is relatively yielding and cushioning to act as a sound absorbent means.

The end construction includes a hollow insert 5. On its exterior it is preferably tapered, as at 6, and is shaped to provide a shoulder 7.

2

In assembly a liner of suitable length is provided and one or more wrappings or other arrangements of sound absorbent material are positioned about the liner. The liner with the wrappings in place is then inserted into the shell or casing 1. The end member 5 is then forced into place and, as shown, expands the liner outwardly. Preferably, also, the outermost layer of wrapping 3 is somewhat longer than the innermost layer 4. This is not essential but is a useful feature. If only a single layer of sound absorbent material is provided instead of the two layers 3 and 4, this layer may be tapered internally.

With the parts assembled as shown, the shell or casing 1 is spun or otherwise forced inwardly to form the groove 8 which fits against the shoulder 7 and against the end of the liner 2. The outer end or edge of the member 1 is then spun or otherwise shaped inwardly, as at 9, to enclose the insert 5 and to hold the parts in place. The insert 5 with its tapered exterior 6 may readily and conveniently be driven into place to hold the liner 2 tightly in place and to compress or wedge the sound absorbent material in place in its end between the member 1 and the member 2.

Thus the parts are held against undue vibration or rattling at this point, and the entire assembly is readily and conveniently secured together without machining or other comparable operations.

The construction at each end of the stock tube is preferably the same, and the stock tube thus becomes a unit which is conveniently and readily made and in which the various parts which make up the unit are readily assembled together. The sound absorbent material preferably extends from end to end of the liner, although it could be interrupted without departing from the spirit of the invention.

Although I have shown an operative form of my invention, it will be recognized that many changes in the form, shape and arrangement of parts can be made without departing from the spirit of the invention, and my showing is therefore to be taken as, in a sense, diagrammatic.

The use and operation of this invention are as follows:

The device, as shown particularly in Figure 2, is formed and assembled as described above, and is then put in a suitable holding device properly spaced with a cutting or other tool. Material is inserted in the stock tube and is moved into engagement with the tool. As the tool operates to act upon the material, the material is fed through the stock tube to the tool either by the

action of the tool itself or by other feeding means.

The invention and its use are not limited to any particular tool or feed. One or more of the stock tubes may be assembled in a unit to feed either to a single or to a multiple machine at the same time.

While the device may be assembled in many ways it is convenient to secure the tapered end pieces 5 on a relatively long steel mandrel with the inner lining 2 compressed between two end pieces; the mandrel is then rotated with the liner and the cushioning wrapping 3, 4 is built up to the required diameter or thickness. The outer tube 1 is then slipped over this assembly and the ends are rolled or otherwise shaped in the provided depressions 8 and the inwardly bent flanges 9 to hold the device assembled. The tapered members 5 thus secure the liner to the outer tube 1 and the liner cannot move relatively longitudinally with relation to the outer tube and cannot protrude from the ends of the tube. The liner is preferably in the form of a closely wound spring which cannot be further compressed longitudinally and hence cannot back off of the tapered surfaces of the end pieces 5 and become loose from them.

I claim:

1. In combination in a work supporting member, a wound and compressed metal liner, and means for supporting said liner comprising a rigid housing of greater diameter than the liner, the liner being mounted therein, and sound absorbent material positioned between the liner and the housing, and means for securing the liner in position within the housing, said means including a hollow insert, said insert having a tapered exterior driven into the liner at its end and expanding it, said insert shaped with an external stop member, said housing being shaped to fit against said stop member and against the end of said liner, said housing being also shaped about the outer end of said insert and holding said insert in fixed position.

2. In combination in a work supporting member, a helically wound and compressed metal liner, and means for supporting said liner comprising a rigid housing of greater diameter than the liner, the liner being mounted therein, and sound absorbent material positioned between the liner and the housing, and means for securing the liner in position within the housing, said means including a hollow insert, said insert having a tapered exterior driven into the liner at its end and expanding it, said insert shaped with an external stop member, said housing having an inwardly directed member spaced away from its ends and shaped to fit against said stop member and against the end of said liner, said housing being also shaped about the outer end of said insert and holding said insert in fixed position.

3. In combination in a work supporting member, a tightly wound metal liner, and means for supporting said liner comprising a rigid metallic housing of greater diameter than the liner, the liner being mounted therein, and sound absorbent material positioned between the liner and the housing, and means for securing the liner in position within the housing, said means including a hollow insert, said insert having a tapered exterior driven into the liner at its end and expanding it, said insert shaped with an external stop member, said insert being effective, when in place, to hold adjacent turns of said liner in contact with each other, said housing being shaped to fit against said stop member and against the end of said liner, said housing being also shaped about the outer end of said insert and holding said insert in fixed position.

4. In combination in a work supporting member, a helically wound and compressed metal liner, and means for supporting said liner comprising a rigid metallic housing of greater diameter than the liner, the liner being mounted therein, and sound absorbent material positioned between the liner and the housing, and means for securing the liner in position within the housing, said means including a hollow insert, said insert having a tapered exterior driven into the liner at its end and expanding it, said insert shaped with an external stop member, said housing being shaped to fit against said stop member and against the end of said liner, said housing being also shaped about the outer end of said insert and holding said insert in fixed position.

5. In combination in a work supporting member, a tightly wound metal liner, and means for supporting said liner comprising a rigid metallic housing of greater diameter than the liner, the liner being mounted therein, and sound absorbent material positioned between the liner and the housing and supporting the liner within the housing in cushioned relationship with respect thereto, and means for securing the liner in position within the housing, said means including a hollow insert having an internal diameter substantially that of the unflexed liner, said insert having a tapered exterior driven into the liner at its end and expanding it, said insert shaped with an external stop member, said insert, when in place, being effective to hold adjacent turns of said liner in contact with each other, said housing being shaped to fit against said stop member and against the end of said liner, said housing being also shaped about the outer end of said insert and holding said insert in fixed position.

6. In combination in a work supporting member, a helically wound and compressed metal liner, and means for supporting said liner comprising a rigid metallic housing of greater diameter than the liner, the liner being mounted therein, and sound absorbent material positioned between the liner and the housing and supporting the liner within the housing in cushioned relationship with respect thereto, and means for securing the liner in position within the housing, said means including a hollow insert having an internal diameter substantially that of the unflexed liner, said insert having a tapered exterior driven into the liner at its end and expanding it, said insert shaped with an external stop member, said housing being shaped to fit against said stop member and against the end of said liner, said housing being also shaped about the outer end of said insert and holding said insert in fixed position.

7. Means for securing together the parts of a work-supporting assembly, which assembly comprises a tubular member, a flexible spring therein, and sound absorbing means between said tube and said spring, said securing means comprising a hollow insert having a tapered and shouldered exterior, said insert being fitted within said tubular member and within said spring and being of such exterior diameter that it expands said spring, a portion of said tubular member being shaped inwardly about said shoulder, and a portion of said tubular member being shaped about the outer end of said insert and securing the same in place.

8. Means for securing together the parts of a

work-supporting assembly, which assembly comprises a tubular member, a flexible spring therein, and sound absorbing means between said tube and said spring, said securing means comprising a hollow insert having a tapered and shouldered exterior, said insert being fitted wholly within said tubular member and partially within said spring and being of such exterior diameter that it expands said spring, a portion of said tubular member being shaped inwardly about said shoulder, and a portion of said tubular member being shaped about the outer end of said insert and securing the same in place.

9. Means for securing together the parts of a work-supporting assembly, which assembly comprises a tubular member, a flexible, tightly wound helical spring therein, and sound absorbing means between said tube and said spring, said securing means comprising a hollow insert having a tapered and shouldered exterior, said insert being fitted within said tubular member

and within said spring and being of such exterior diameter that it expands said spring, a portion of said tubular member being shaped inwardly about said shoulder, and a portion of said tubular member being shaped about the outer end of said insert and securing the same in place, said spring, tubular member and insert being so proportioned that the insert when in position holds the convolutions of said spring in contact with each other.

WEBSTER D. CORLETT, JR.

REFERENCES CITED

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

UNITED STATES PATENTS

Number	Name	Date
690,744	Line	Jan. 7, 1902
1,891,290	Tessky	Dec. 20, 1932