

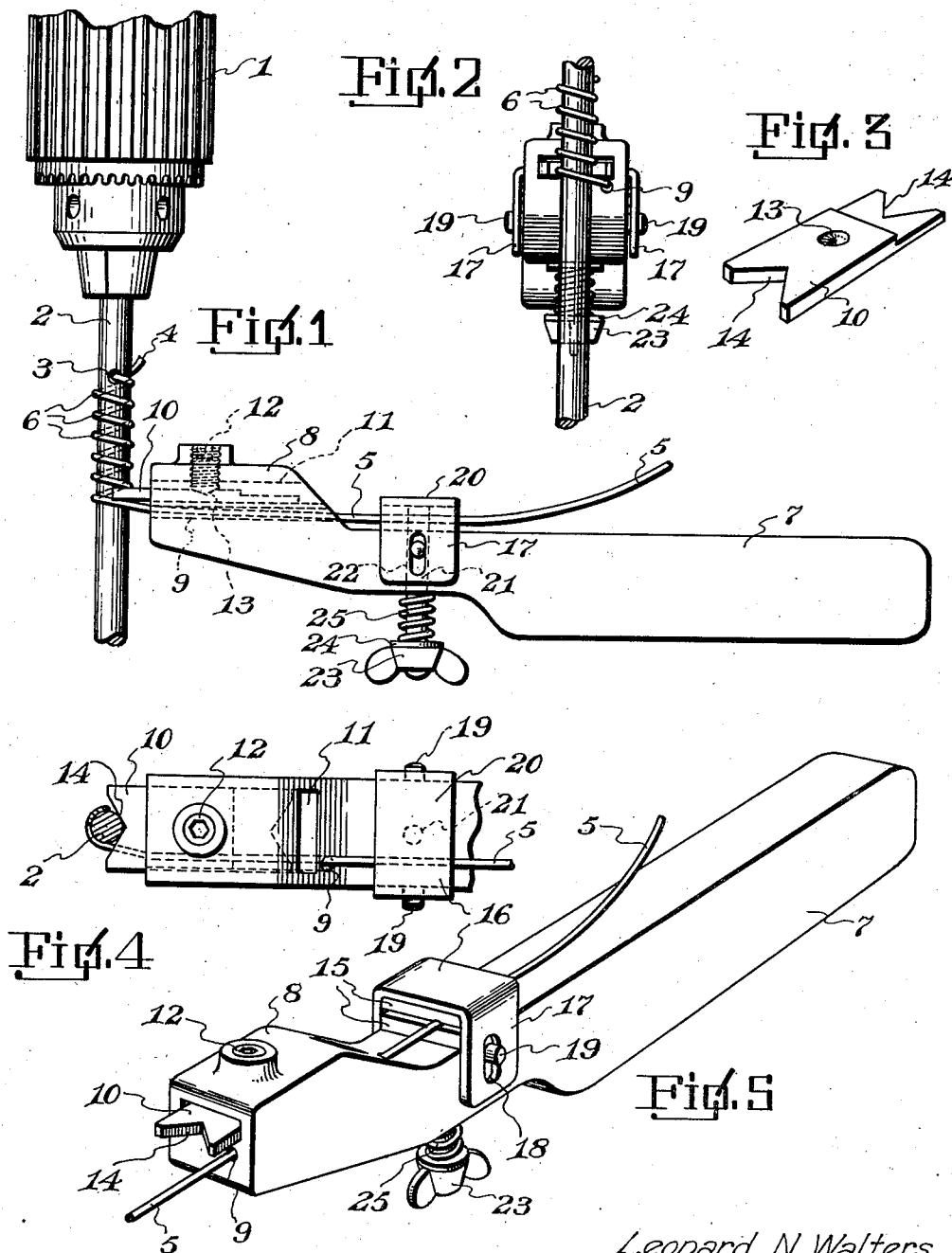
Jan. 16, 1945.

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2,367,320

SPRING WINDING TOOL

Filed Jan. 28, 1944



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2,367,320

SPRING WINDING TOOL

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Application January 28, 1944, Serial No. 520,083

1 Claim. (Cl. 140—124)

The invention relates to spring winding tools of the type adapted to be held in the hand of an operator for feeding a wire to a rotatable mandrel and has for its object to provide the tool with means for frictionally feeding the wire, and with means for engaging the mandrel for spacing the spring convolutions a desired distance from each other as they are formed on the mandrel.

A further object is to provide the outer end of the tool with a longitudinally disposed spacing plate chamber, in which chamber different size spacing plates may be received according to the desired spacing of the spring convolutions.

A further object is to provide a spacing plate having its ends of different thickness so that the plate may be turned end for end for obtaining different spacings of the convolutions.

A further object is to provide the tool with a yieldable clamping member having friction blocks therein between which the wire is fed and means for varying the frictional clamping of the wire according to the size of the wire fed for insuring the tight winding of the convolutions around the mandrel as the mandrel is rotated.

With the above and other objects in view the invention resides in the combination and arrangement of parts as hereinafter set forth, shown in the drawing, described and claimed, it being understood that changes in the precise embodiment of the invention may be made within the scope of what is claimed, without departing from the spirit of the invention.

In the drawing:

Figure 1 is a side elevation of the tool, showing the same in position against a mandrel in a conventional form of drill press chuck.

Figure 2 is a front elevation of the tool and a portion of the mandrel.

Figure 3 is a perspective view of the convolution spacing plate.

Figure 4 is a top plan view of the outer end of the tool.

Figure 5 is a perspective view of the tool.

Referring to the drawing, the numeral 1 designates a conventional form of drill press chuck, in which the mandrel 2 is held for rotation. Mandrel 2 is provided with a transverse aperture 3, in which aperture the end 4 of the spring wire 5 is placed for holding the wire so that the convolutions 6 will be formed around the mandrel 2 as the mandrel is rotated.

The tool comprises a handle member 7 adapted to be gripped by the operator during the spring forming operation, and a head section 8, having a longitudinally extending aperture 9, through

which the wire 5 is fed to the mandrel below the convolution spacing plate 10. The plate 10 is disposed in a longitudinally extending chamber 11 in the head 8 and is clamped therein by means of a set screw 12, the lower end of the set screw engaging in the depression 13 in the plate 10 for positively holding the plate in extended position as shown in Figure 1. Spacing plate 10 is thicker at one end than at the other, hence it can be turned end for end for obtaining different convolution spacings, however both ends of the plate are provided with V-shaped notches 14 for engaging one side of the rotating mandrel during the spring forming operation, clearly shown in Figure 4, thereby positively preventing side displacement of the tool.

The wire 5 extends rearwardly between fibre clamping blocks 15, located within the inverted U-shaped bracket 16. The fibre blocks are adapted to be clamped together adjustably for frictionally engaging the wire so that the convolutions 6 can be tightly formed around the mandrel. This is particularly desirable where different size wire is used. The arms 17 of the U-shaped bracket 16 extend downwardly on opposite sides of the tool and are provided with vertical elongated apertures 18, through which the guide pins 19 extend. Pins 19 are carried by the handle member 7. The transverse portion 20 of the clamp 16, is provided with a downwardly extending bolt 21 which passes through apertures of the fibre members 15 and through an aperture 22 in the handle member 7 and terminates in a thumb nut 23. Interposed between the washer 24 and the handle member 7 is an expansion spring 25. It will be seen that the tension and frictional clamping on the wire 5 may be varied by adjusting the thumb nut 23, therefore the operator can readily vary the tension on the wire as desired. Longitudinally extending chamber 11 is sufficiently large to allow the reception of the different size spacing plates 10, therefore it will be seen that the tool can be used for forming various types and kinds of springs as well as sizes.

From the above it will be seen that a spring forming tool, adapted to feed a wire to a rotating mandrel, is provided which is simple in construction, the parts reduced to a minimum, and one wherein the frictional feeding of the wire may be easily and quickly regulated.

The invention having been set forth what is claimed as new and useful is:

A tool for feeding a wire to a rotatable mandrel for forming springs, said tool comprising a handle member, a head carried by said handle

member adapted to engage the mandrel and having a longitudinally extending aperture there-through through which a wire is fed to the mandrel, frictional clamping means for the wire comprises an inverted U-shaped bracket arching the upper side of the handle member with its arms on opposite sides of the handle member, outwardly extending guide lugs carried by the handle member and extending through vertically elongated apertures in the arms of the U-shaped clamping member, spaced wire engaging clamping blocks

within the U-shaped bracket above the handle member and between which the wire is fed, a bolt carried by the transverse portion of the U-shaped clamping bracket and extending downwardly through the clamping blocks and handle and terminating below the handle, and adjusting nut threaded on said bolt below the handle member and an expansion spring interposed between the nut and the handle member.

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