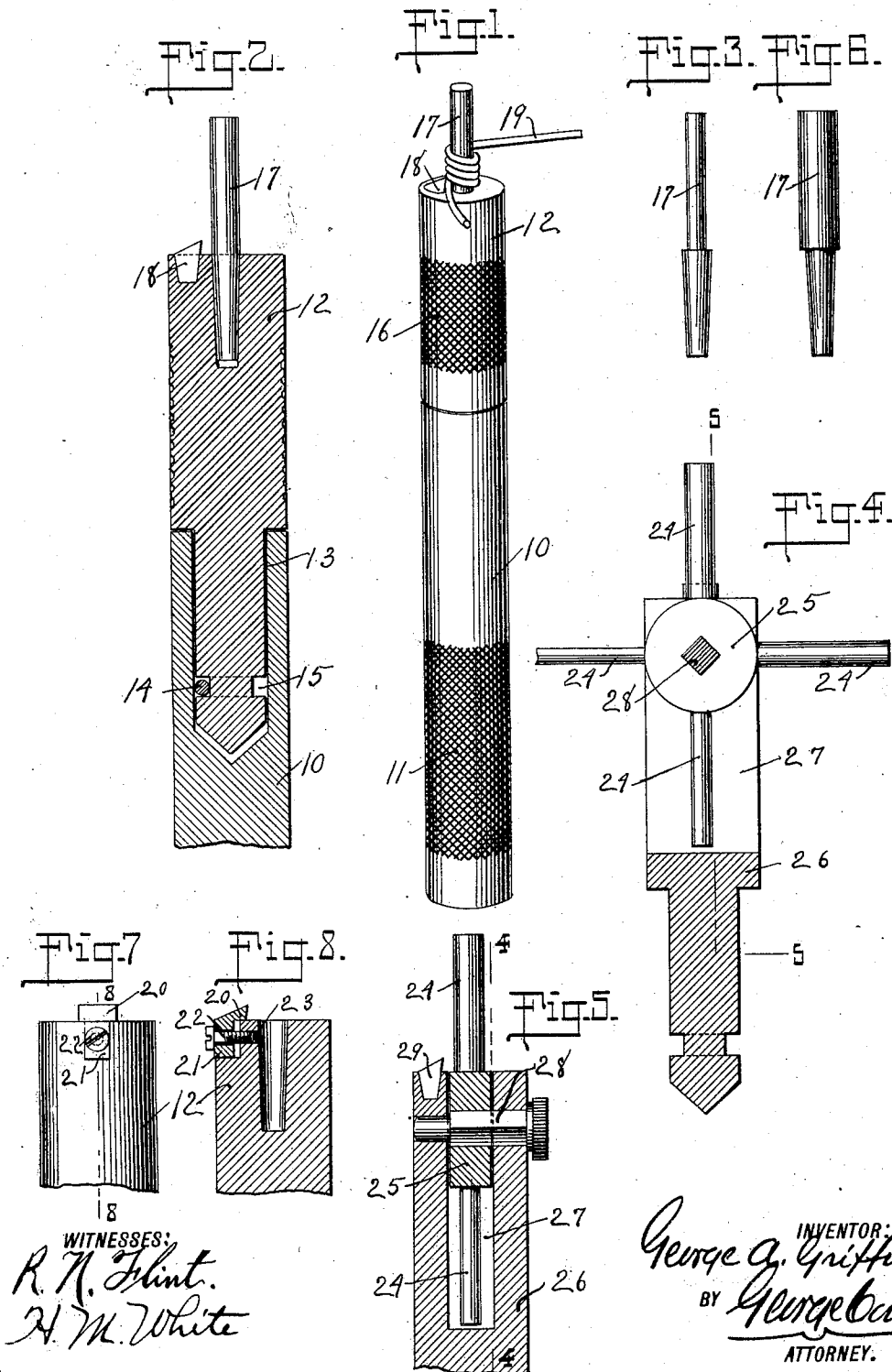


G. A. GRIFFIN.
 DEVICE FOR MAKING COIL SPRINGS.
 APPLICATION FILED JULY 9, 1912.

1,047,934.

Patented Dec. 24, 1912.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR MAKING COIL-SPRINGS.

1,047,934.

Specification of Letters Patent.

Patented Dec. 24, 1912.

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To all whom it may concern:

Be it known that I, GEORGE A. GRIFFIN, a citizen of the United States, and a resident of New York, borough of Brooklyn, in the county of Kings and State of New York, have made and invented certain new and useful Improvements in Devices for Making Coil-Springs, of which the following is a specification.

My invention relates to mechanism for making coil springs from spring wire by coiling the same about a suitable support or mandrel, and more particularly to a manually operable device or implement for coiling wire to make such comparatively small springs as are used by jewelers, opticians, and others, which implement may be conveniently held in one hand and operated by the thumb and finger, thus leaving the other hand free to hold the spool upon which the wire is commonly stored and to guide the wire so that the spring will be wound properly upon the mandrel.

The object of my invention is to provide a device of the type and for the purpose above referred to which will be simple in construction and effective for the purpose for which it is intended, and which may be readily adjusted to produce springs of different diameters, and to operate upon wire of different sizes, so that springs of various diameters may be made from either fine or coarse wire at will.

With the above and other objects of invention in view, my invention consists in the improved device for making coil springs illustrated in the accompanying drawing, described in the following specification, and particularly claimed, and in such variations and modifications thereof as will be obvious to those skilled in the art to which my invention relates.

In the drawing wherein my device is shown considerably larger than in the form in which it is commonly made for use in the hand: Figure 1 is a view showing my device in side elevation, and illustrating the manner in which wire is coiled thereby to form a coil spring; Fig. 2 is a view somewhat enlarged showing a section upon a vertical central plane of the upper portion of my device; Figs. 3 and 6 are views showing other forms of the mandrel upon which the spring is formed; Fig. 4 is a view showing a form

of my device in which several mandrels differing from one another are provided, this view being taken upon a plane indicated by the line 4—4, Fig. 5, looking toward the left; Fig. 5 is a view showing the same features of my device but taken upon a plane indicated by the line 5—5, Fig. 4, looking toward the left; Fig. 7 is a fragmentary view showing a wire stop which forms a part of my device as adjustable; and Fig. 8 is a view showing the same upon a plane indicated by the line 8—8, Fig. 7.

Referring to the drawing, the reference character 10 designates a suitable support designed to be held in the hand when my device is to be used to wind or form a spring from wire as above explained, the same being shown as cylindrical in form and roughened or knurled at 11 in order to secure a good grip upon the support. The said support is provided with a rotary head 12 rotatable about an axis extending longitudinally of the support and the lower end of which is shown as reduced in size and fitting within an opening 13 formed in the upper end of the support 10, and secured in place by means of a transversely extending pin 14 lying within a groove 15 formed adjacent the lower end of the reduced portion of the rotary head when the parts are assembled; although it will be understood that other forms of connection or joint between the support and rotary head may be employed so long as the head retains its essential characteristics of being rotatable with reference to the support whereby it is carried. The rotary head is knurled or roughened as shown at 16 in order that the same may be rotated without danger of slipping by the thumb and fore finger of the hand in which the device is held when a spring is being formed, as will be understood from the above explanation of the nature and use of my device.

The rotary head 12 carries a mandrel 17 at its upper or free end upon which wire is wound to form a coil spring, as illustrated in Fig. 1. This mandrel projects along the axis of the rotary head as shown; and the same is preferably made tapering at its lower end in order that it may be removed from the tapering seat in the head in which it is supported, and a mandrel of different diameter substituted therefor, Fig. 3 illustrating a mandrel the diameter of which is

less and Fig. 6 one of greater diameter than the mandrel shown in Figs. 1 and 2. From this it will be understood that my device may, when furnished with a number of mandrels, be used to form coil springs of different diameters, by using a particular mandrel having a diameter corresponding with that of the spring which it is desired to form.

The reference character 18 designates a wire stop located adjacent the lower end of the mandrel, the purpose of which is to catch and hold the free end of the wire 19 from which the spring is formed while the wire is being wound upon the mandrel as shown in Fig. 1. This wire stop may be held within a recess formed in the upper end of the rotary head, as shown in Fig. 2, in which case the stop occupies a fixed position. I prefer, however, to make the stop adjustable toward and from the lower end of the mandrel, as shown in Figs. 7 and 8, in order that the device may be more readily adapted for making springs of different diameters by using mandrels of various diameters, and in order that the space between the stop and mandrel may be adjusted with reference to the diameter of the wire from which the spring is to be made. In Figs. 7 and 8 the stop 20 is shown as provided with a depending portion 21 which moves in a slot formed in the upper end of the rotary head 12, and 22 is a screw extending loosely through a hole in the depending portion and into a threaded opening 23 in the head, by means of which construction the wire stop may be adjusted toward and from the lower end of the mandrel as will be understood.

As a matter of convenience and in order to provide a simple and compact unitary implement capable of use in making springs of several different diameters, I may equip my device with a plurality of mandrels any one of which may be brought into such a position, or adjusted in such a way, that a mandrel will project along the axis of the rotary head so that a spring may be formed or wound thereupon. For instance, in the form of my device shown in Figs. 4 and 5 four mandrels 24 differing from one another in diameter are carried by and project from a hub 25, which hub is capable of adjustment about an axis at right angles to the axis of the rotary head 26, adjacent the outer end of which the said hub is supported, the head having a central transversely extending slot 27 within which the hub and mandrels lie. The hub and mandrels thus form a sort of a turret, and, upon rotating the same to bring a given mandrel into a position projecting beyond the head, and securing the hub against rotation, it will be obvious that a spring may be formed upon the mandrel selected. The hub is shown as supported upon a squared pin 28 extending through correspondingly shaped holes in the

hub and rotary head, from which it follows that the adjustment of the hub may be changed by withdrawing the pin, and that when the pin is in place the hub and mandrels are held in a fixed position and secured against rotation. The wire stop 29 used in this form of my device is shown as similar to the form of stop shown in Figs. 1 and 2. Any form of wire stop may, however, be used so long as it is suitable for the purpose of holding the free end of the wire while a spring is being formed, among which forms may be mentioned the adjustable form of stop shown in Figs. 7 and 8.

Having thus described and explained my invention, I claim and desire to secure by Letters Patent:

1. In a device of the class described, a suitable support; a head carried by said support and rotatable about an axis extending longitudinally of said support; a mandrel carried by and projecting from said head along the axis of rotation thereof; and a wire stop located adjacent the lower end of said mandrel.

2. In a device of the class described, a suitable support; a head carried by said support and rotatable about an axis extending longitudinally of said support; a removable mandrel carried by and projecting from said head along the axis of rotation thereof; and a wire stop carried by said head and located adjacent the lower end of said mandrel.

3. In a device of the class described, a suitable support; a rotary head carried by said support; a mandrel carried by and projecting from said head along the axis thereof; and a wire stop carried by said rotary head and located adjacent the lower end of said mandrel, said stop being adjustable toward and from the lower end of said mandrel.

4. In a device of the class described, a suitable support; a rotary head carried by said support; a plurality of mandrels carried by said head and adjustable relatively thereto whereby any one of said mandrels may be arranged so as to project beyond and along the axis of said head; and means for holding the end of a wire as it is wound about said mandrel to produce a coil spring.

5. In a device of the class described, a suitable support; a rotary head carried by said support; an angularly adjustable hub carried by said head and located adjacent the free end thereof, said hub being adjustable about an axis at right angles to the axis of said rotary head; a plurality of mandrels carried by said hub; means for securing said hub in the various positions in which it may be placed; and a wire stop carried by said rotary head.

6. In a device of the class described, a suitable support; a rotary head carried by said support and provided with a trans-

versely extending slot at its free end; a rotary hub supported within said slot adjacent the free end of said head; a plurality of mandrels carried by said hub; means for securing said hub against rotation within said slot; and a wire stop carried by said rotary head.

Signed at New York, borough of Manhat-

tan, in the county of New York and State of New York, this 5th day of July, A. D. 1912.

GEORGE A. GRIFFIN.

Witnesses:

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A. V. WALSH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."