

No. 615,749.

Patented Dec. 13, 1898.

G. U. ROULET & W. F. YOUNG.  
MACHINE FOR COILING STUD SPIRALS.

(Application filed Dec. 21, 1897.)

(No Model.)

2 Sheets—Sheet 1.

FIG. 1.

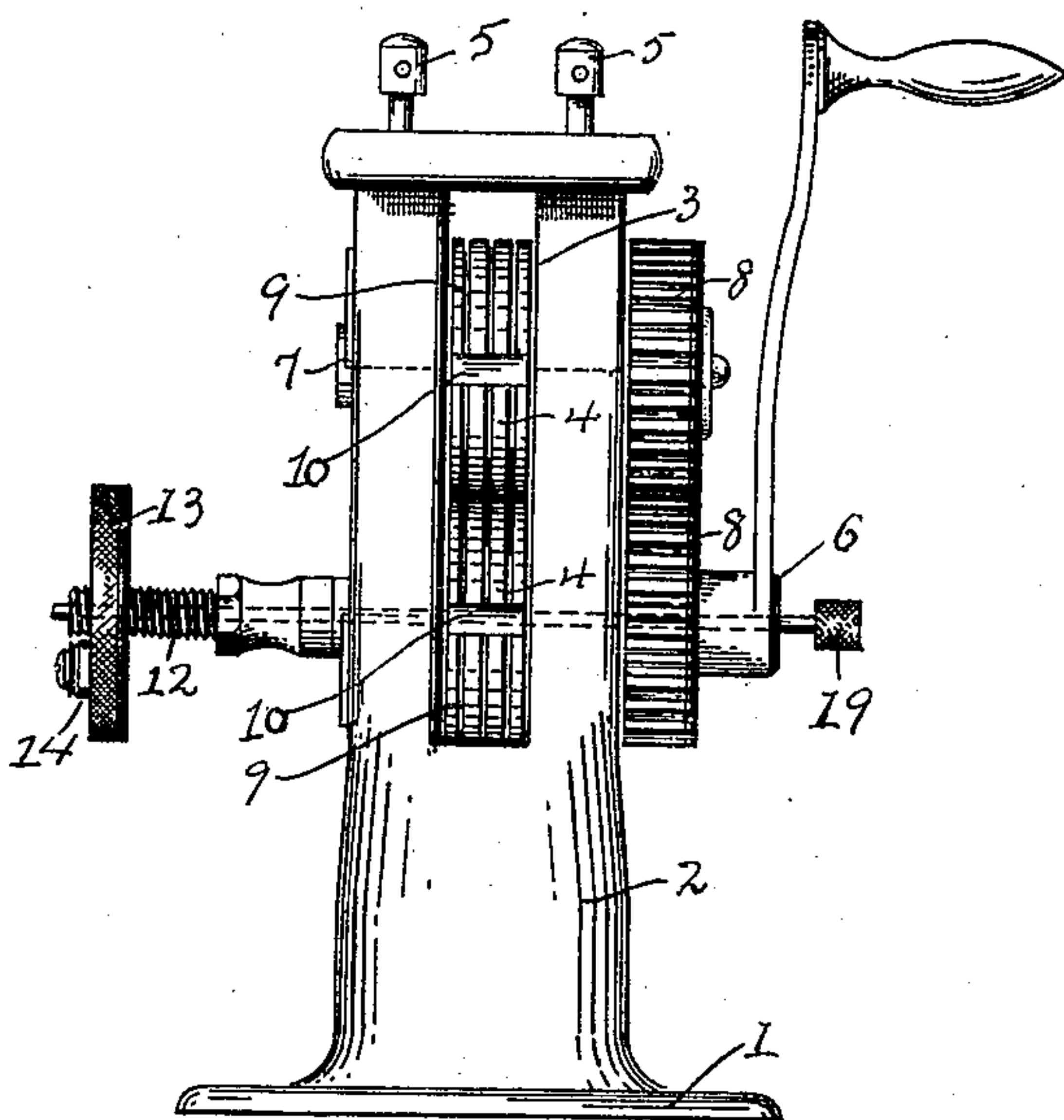


FIG. 2.

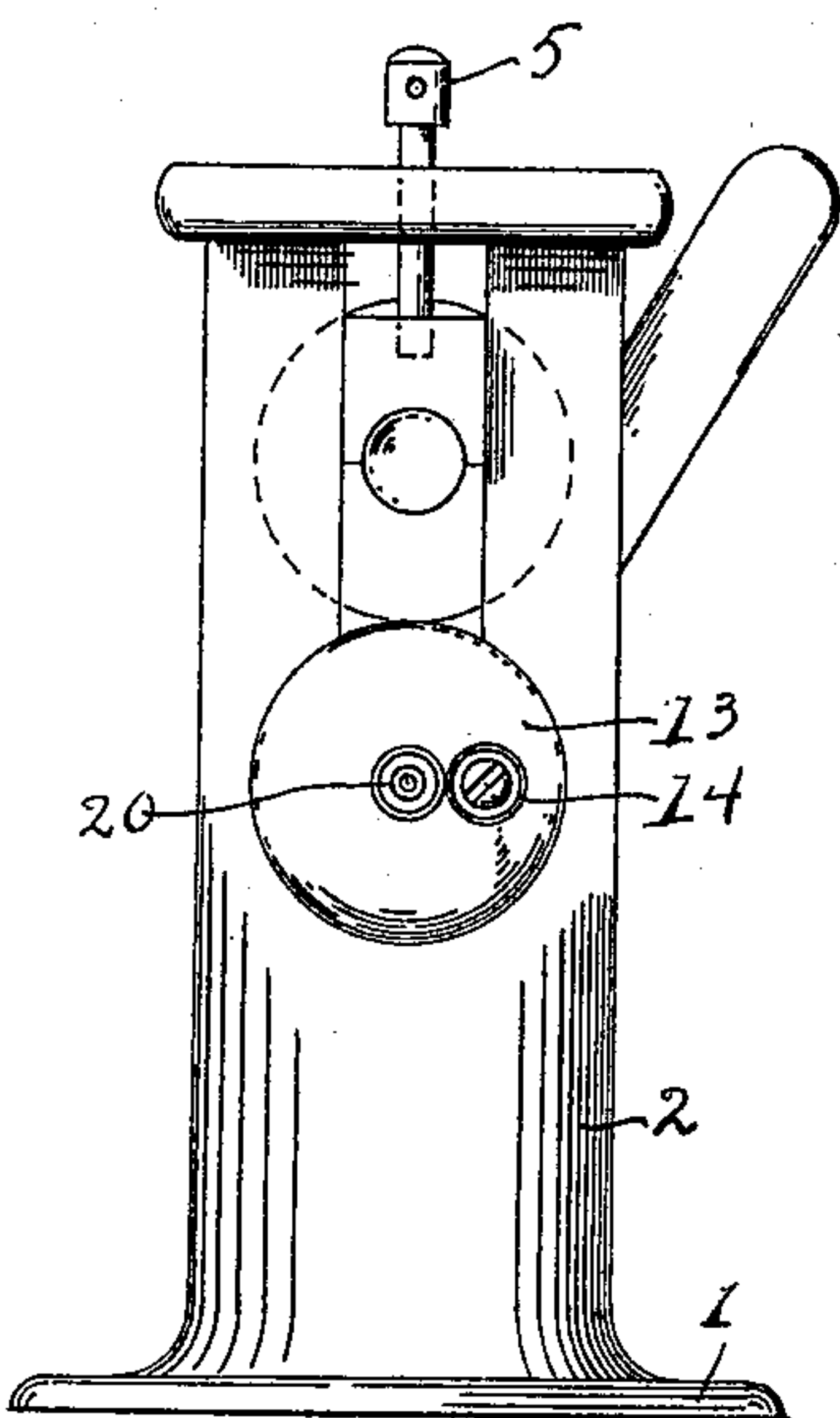
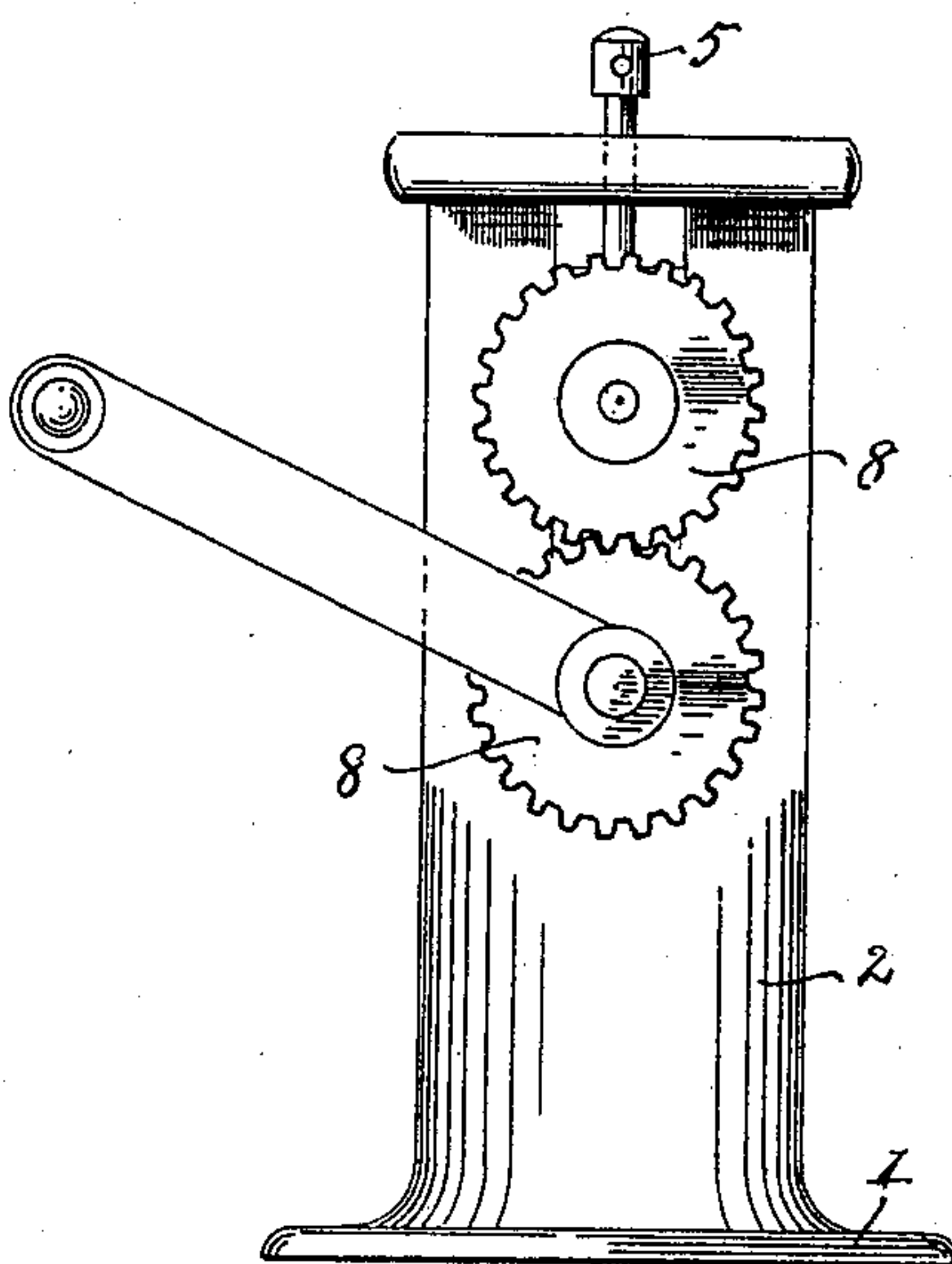


FIG. 3.



WITNESSES

Carl H. Keller.

Maud Schumacher.

INVENTORS

George U. Roulet

William F. Young

By William Webster  
att'y

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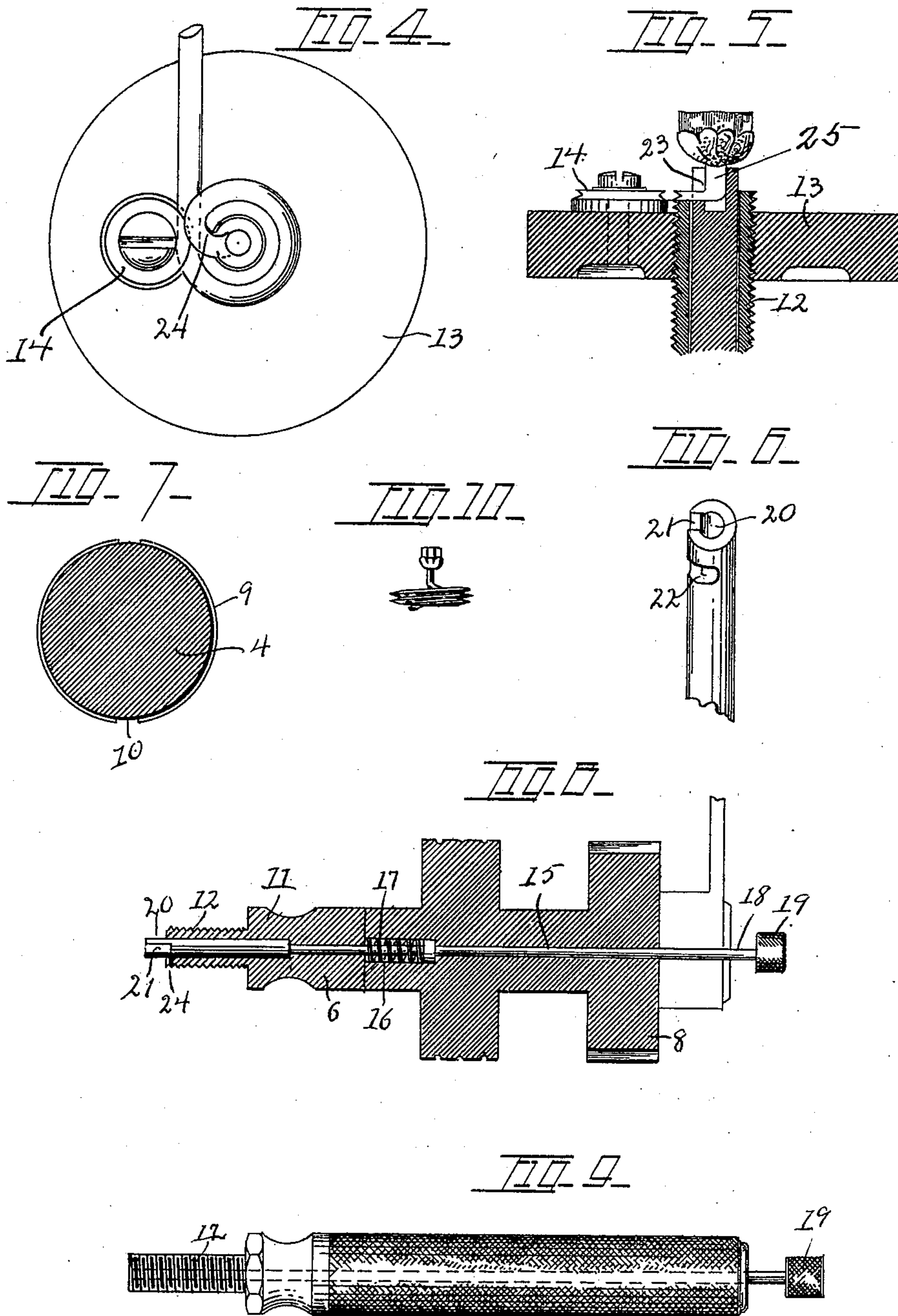
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Carl H. Keller  
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George U. Roulet  
William F. Young  
By William Webster  
Attor



# UNITED STATES PATENT OFFICE.

GEORGE U. ROULET AND WILLIAM F. YOUNG, OF TOLEDO, OHIO.

## MACHINE FOR COILING STUD-SPIRALS.

SPECIFICATION forming part of Letters Patent No. 615,749, dated December 13, 1898.

Application filed December 21, 1897. Serial No. 662,856. (No model.)

*To all whom it may concern:*

Be it known that we, GEORGE U. ROULET and WILLIAM F. YOUNG, of Toledo, county of Lucas, and State of Ohio, have invented certain new and useful Improvements in Mechanism for Coiling Spirals; and we do hereby declare that the following is a full, clear, and exact description of the invention, which will enable others skilled in the art to which it ap-  
10 pertain to make and use the same, reference being had to the accompanying drawings, and to the numerals of reference marked thereon, which form part of this specification.

Our invention relates to a mechanism for  
15 coiling spirals, and has for its object to provide mechanical means whereby spirals for studs, pins, &c., may be coiled with mechanical perfection, with means for automatically releasing the coils after formation.

20 A further object is to provide mechanical means for coiling a spiral after the setting of the jewel, thereby facilitating the work and presenting a more perfectly finished article than heretofore.

25 A further object is to combine a mechanism for shaping the wire of the coil into an oval or other form in cross-section, as desired, with means for passing a portion of the wire over forms to leave the same of normally  
30 round form in cross-section, whereby the wire in each semirevolution of the rollers is shaped for the length desired for the coil, with a portion of normal shape for attachment to the setting, with attachment for coiling mechanism.

35 In the drawings, Figure 1 is a side elevation of the shaping and coiling mechanism. Fig. 2 is an end elevation showing the coiling mechanism in end view. Fig. 3 is an end  
40 elevation showing the crank and push-rod. Fig. 4 is an enlarged end view of the coiling mechanism. Fig. 5 is a sectional view showing the coiling mechanism with a coil properly positioned within the revoluble coiler and confined by the grooved revoluble former.  
45 Fig. 6 is an elevation of the coiler. Fig. 7 is a plan view of one of the shaping-rollers. Fig. 8 is a longitudinal vertical section of the power-shaft, showing the driving-gear, shaping-roller, coiler, and means for advancing  
50 the coiler to release the coil when formed. Fig. 9 is a side elevation of the coiling mech-

anism detached from the power mechanism; and Fig. 10 is an elevation of a finished stud.

1 designates the base, from which rises a  
55 standard 2, recessed centrally at 3 to receive forming-rollers 4, journaled in the standard, with provision for adjusting the upper roller with relation to the lower roller by means of  
60 bolts 5, bearing upon the boxing. Rollers 4 are secured upon a driving-shaft 6 and an upper shaft 7, each of which has secured thereon intermeshing gears 8, whereby when shaft 6  
65 is revolved either by crank or other power both rollers are revolved. Each roller is grooved peripherally, as at 9, for a portion of  
its circumference, and at diametrically opposite points is plain, as at 10. Grooves 9 may  
70 be of any desired contour and form the wire in any desired shape in cross-section. Rollers 4 are of a diameter to form sufficient wire for a  
coil in each half-revolution, and the plain portion allows the wire to pass between the rollers at this point without changing its shape,  
75 thereby leaving a portion intact for the stem attached to the setting.

The coiling mechanism comprises a tubular  
body portion, which may be shaft 6 or, if to be used by hand, a tubular body 11, the outer  
80 end 12 of the tubular body being reduced in diameter and externally threaded, there being a wheel 13, centrally perforated and internally screw-threaded, run upon the threaded  
85 end 12. Wheel 13 is provided upon its outer side with a grooved former 14, revolvably secured upon the wheel. The central longitudinal orifice 15 in the tubular portion is  
90 preferably of two diameters. The larger diameter 16 is for the purpose of housing a coiled spring 17, which rests against the wall of the chamber at one end, with the opposite  
95 end of the spring secured to a rod 18, passing through the tubular portion at its rear end and provided with a knob 19, and at its forward end enlarged and formed with a tubular portion 20 and longitudinal slot 21, connecting with a transverse slot 22. By this  
100 arrangement the spring normally urges the rod and slotted tubular portion toward the rear end of shaft 6, and pressure upon the knob advances the same against the tension of the spring. The screw-threaded end 12 is cut away at 23 to form a shoulder or projection 24 to engage with the wire.



In operation shaft 6 is revolved, thereby revolving rollers 4, when the wire is inserted and shaped. Any desired length of wire is passed through the rollers, and the wire is then cut at the plain portion, each section forming a sufficient length to form a coil. The setting may be secured to the round portion 25 of the wire, and the portion necessary to form a coil is bent at right angles thereto, when the wire is inserted in the tubular portion 20, the angled portion passing down the slot 21 and seating in slot 22 and engaged with projection 24 of the end 12. Wheel 13 is run upon the thread of the end 12 until the groove of the former-wheel 14 coincides with the projecting end of the wire, when upon revolving wheel 13 the former-wheel 14 travels concentrically of the end 12 and coils the wire into the desired number of convolutions. After the wire is coiled wheel 13 is turned to cause the former-wheel 14 to pass off of the end of the wire, and knob 19 is pushed inwardly to cause the slotted end to advance and release the coil from projection 24, when the coil may be removed either by turning the coil to release it from slot 22 or by turning knob 19 and rod 18, and consequently the slotted end, to withdraw the slotted portion from the wire.

For some forms of coils the coiling mechanism may be operated by hand, in which event the tubular portion 11 may be grasped in the hand and held while wheel 13 is being revolved.

What we claim is—

1. In a machine for coiling spirals, rollers provided with a series of peripheral grooves, and grooves in the rollers arranged at diametrically opposite points, said grooves ex-

tending longitudinally of the rollers and forming a blank space between the ends of the peripheral grooves, whereby a wire passed between the rollers is formed into the desired shape in cross-section by the peripheral grooves, and is left intact for a distance comprising the width of the longitudinal grooves.

2. In a mechanism for coiling spirals, a tubular body portion, having a threaded end, a rod longitudinally movable in the body portion, a spring upon the rod to normally retract the same, a tubular portion upon the end of the rod, having a longitudinal and a transverse slot, a projection upon the end of the threaded portion, and an internally-threaded wheel upon the threaded portion, having a grooved former-wheel journaled thereon.

3. In a mechanism for coiling spirals, a body portion formed with a central longitudinal perforation, a rod located in the perforation, a spring upon the rod for normally retracting the same, a knob upon one end of the rod, and coiling mechanism upon the opposite end, having an opening to receive the stem of the spiral, and a transverse groove to receive the wire of the coil, a projection upon the body portion to engage with the wire of the coil, and a revoluble coiler-wheel arranged to move concentric to the body portion.

In testimony that we claim the foregoing as our own we hereby affix our signatures in presence of two witnesses.

GEORGE U. ROULET.  
WILLIAM F. YOUNG.

Witnesses:

WILLIAM WEBSTER,  
H. H. MARTIN.