2 Sheets—Sheet 1.

D. F. BRIGGS.

MACHINES FOR WINDING SPIRAL STUDS.

No. 182,798. Patented Oct. 3, 1876.

Fig. 1.

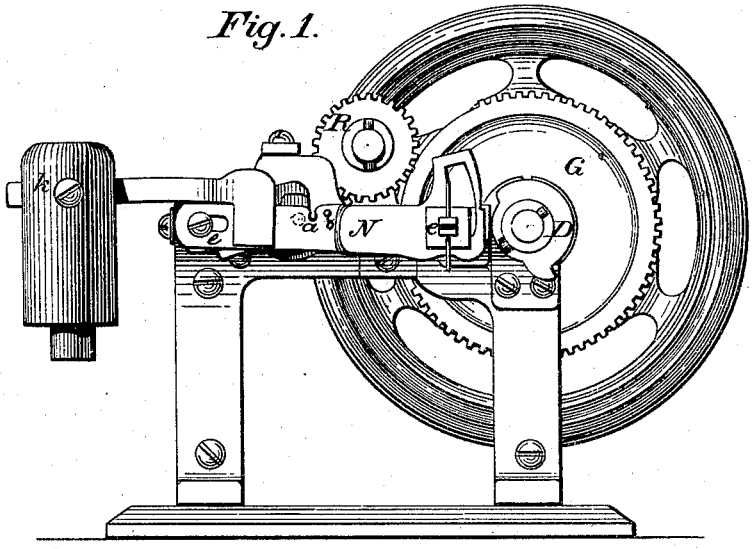
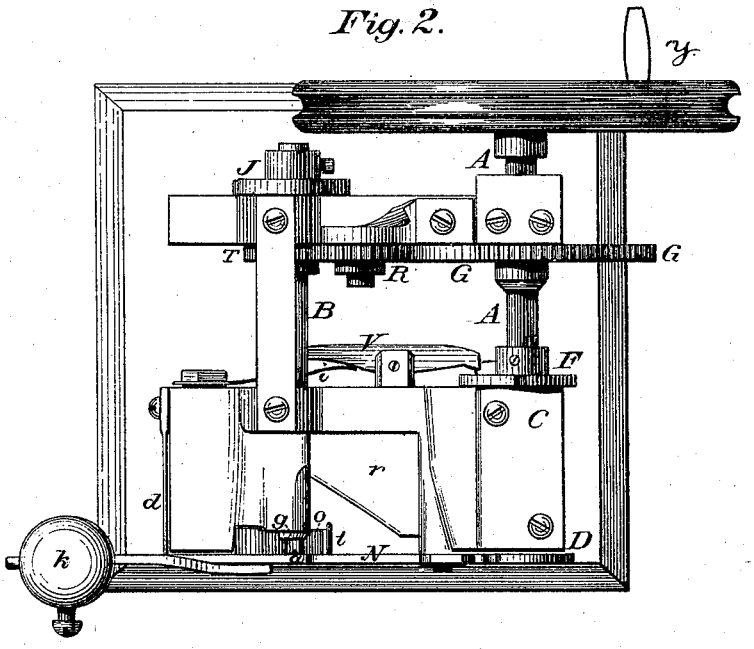


Fig. 2.



Attest:

Frank H. Arnold

James E. Arnold

Inventor:

Daniel F. Briggs

Per Benj. Arnold

Atty.

2 Sheets—Sheet 2.

D. F. BRIGGS.

MACHINES FOR WINDING SPIRAL STUDS.

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Fig. 3.

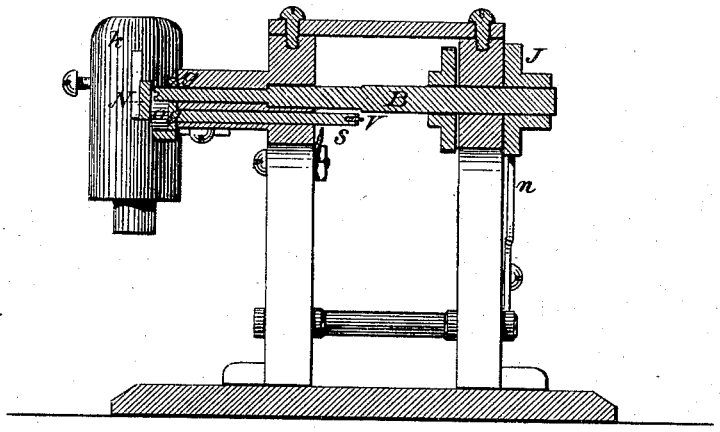

Fig. 4.

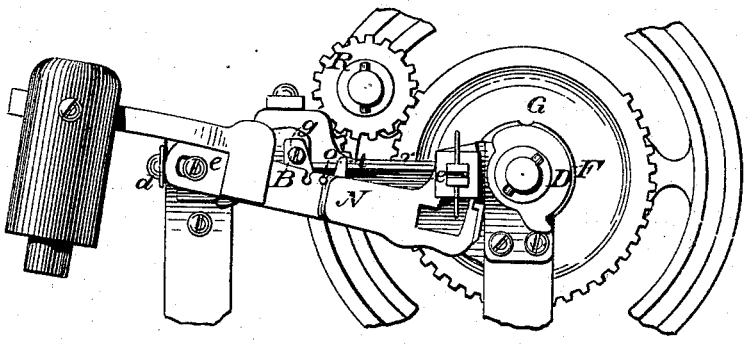

Fig. 5.

Fig. 6.

Witnesses:
Frank H Arnold
James E. Arnold

Inventor:
Daniel F Briggs
Per Benj Arnold
his Attg

UNITED STATES PATENT OFFICE.

DANIEL F. BRIGGS, OF CRANSTON, ASSIGNOR OF ONE-HALF HIS RIGHT TO GILBERT M. LUTHER, OF PROVIDENCE, RHODE ISLAND.

IMPROVEMENT IN MACHINES FOR WINDING SPIRAL STUDS.

Specification forming part of Letters Patent No. **182,798**, dated October 3, 1876; application filed June 16, 1876.

To all whom it may concern:

Be it known that I, DANIEL F. BRIGGS, of Cranston, in the county of Providence and State of Rhode Island, have invented certain Improvements in Machines for Winding Spiral Studs, of which the following is a specification:

This invention consists, mainly, of a notched sliding plate that carries the stud-pin into a slot in the end of an arbor, the revolutions of which wind the pin into a spiral, and also of devices for throwing the stud out when finished, with the cams, gear-wheels, and other devices necessary to give the proper motions to the parts, as hereinafter described.

Figure 1 is a front elevation. Fig. 2 is a top view. Fig. 3 shows a vertical cross-section taken through the center of the arbor B. Fig. 4 shows the position of parts of the machine at different times during its operation. Fig. 5 is a stud-pin before winding, and Fig. 6 the spiral stud completed.

A is a shaft turning in bearings on the frame C. B is an arbor, also placed in bearings on the frame, and receiving an intermittent motion from the shaft A by means of the sector gear-wheel G, which consists of about three-fourths of a circle. N is a sliding plate, supported on projections *e e* on the front of the frame. Slots in the plate allow it to move endwise and vertically when pushed by the cam D on the shaft A. A notch is made in the upper edge of the plate at *a*, and a pin, *o*, fastened in it on its inner side, just to the right of the notch. The cam D has two projections on its periphery, one of which slides the plate N endwise, and the other depresses the end of it. *g* is a clearer, consisting of a collar sliding on the arbor B, and fast on the rod *s*, which slides in the frame under the arbor B. It is operated by the lever V, which is moved by a projection on the cam F on the shaft A, and is brought back to place by a spring, *i*, under the end of the lever. A plate, J, is fastened on the back end of the arbor B, having a notch made in its periphery, into which the spring-detent *n* catches to stop and hold the arbor after it has been rotated by the wheel G, so that it shall be in proper position for the gear-wheels to engage correctly, and the slot in the end of the arbor to receive the next pin. The table *r* holds the pin up in place, supporting and guiding it while bending around under the pin *o*.

The operation is as follows: The machine being in position, Fig. 1, the pin of the stud is inserted in the notch *a* in plate N; then by turning the crank *y*, the first projection on the cam D will push the plate N back, carrying the stud-pin into the slot in the end of the arbor B, and bend it around against the plate and under the pin *o*. By this time the teeth of the sector-wheel G will catch into the wheel R, and turn the arbor B, winding the pin around it; then the second projection on the cam D will strike the end of the plate N, and push it down, carrying the pin *o* by the adjustable projection *t*, upon which the end of the stud-pin catches and receives the radial bend required for the end of the spiral. At this time the projection on the cam F strikes the lever V, and pushes the clearer *g* out, throwing the stud off clear of the machine. The plate N is now brought back to its first position by the spring *d* and the weight *k*, the clearer drawn back by the spring *i*, and the machine is ready for another stud-pin.

The whole operation for each stud requires only one turn of the crank, and the machine can be worked as fast as the stud-pins can be picked up and inserted in the notch.

What I claim as my invention, and desire to secure by Letters Patent, is—

1. The sliding plate N, with the notch *a* and pin *o*, in combination with the slotted arbor B, and the cam D, and adjustable projection *t*, substantially as and for the purpose specified.

2. The combination of the shaft A, sector-wheel G, wheels R and T, plate J, spring-detent *n*, and arbor B, substantially as and for the purpose specified.

3. The table *r*, in combination with the plate N and slotted arbor B, substantially as de-described, and for the purpose specified.

DANIEL F. BRIGGS.

Witnesses:

HENRY W. ALLEN,

HENRY C. LUTHER.