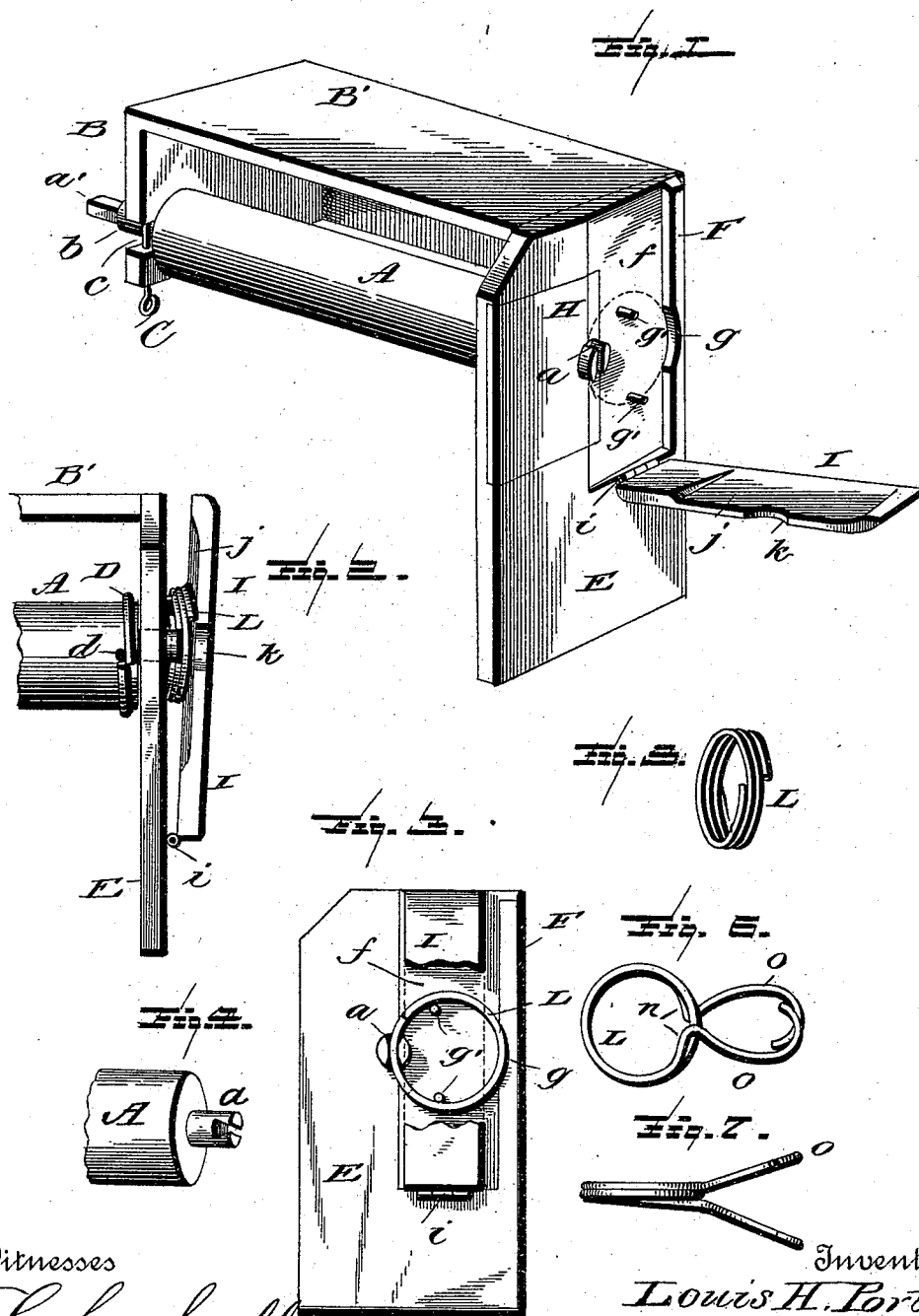


(No Model.)

L. H. PORTER.
MACHINE FOR FORMING WIRE ARTICLES.

No. 492,051.

Patented Feb. 21, 1893.



Witnesses

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MACHINE FOR FORMING WIRE ARTICLES.

SPECIFICATION forming part of Letters Patent No. 492,051, dated February 21, 1893.

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To all whom it may concern:

Be it known that I, LOUIS H. PORTER, a citizen of the United States, residing at Rockdale, in the county of Milam and State of Texas, have invented certain new and useful Improvements in Machines for Making Wire Articles; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, and to the letters of reference marked thereon.

The present invention has relation to certain new and useful improvements in machines or devices for forming coils or springs, and is designed more especially for forming pins or analogous articles of wire, such articles being fitted for use as a clothes pin, tidy-holder, a holder for the leaves of books, bill or letter file, or other uses to which such an article may be found valuable.

The invention has for its objects to provide a simple, cheap and durable device or machine for the purpose named which can be easily operated and capable of turning out a large number of the articles with the expenditure of the minimum amount of time and labor. These several objects above enumerated I attain by the construction substantially as shown in the drawings and hereinafter described and claimed.

Figure 1 of the drawings represents a perspective view of my improved machine showing the hinged clamp down. Fig. 2 is a detail side elevation showing the coil of wire in position and the hinged clamp brought up against it in the act of forming the levers of the pin. Fig. 3 is an end view of the machine showing a portion of the clamp broken away and the coil of wire in position to form the levers of the pin. Fig. 4 is a perspective view of the bifurcated journal of the roller to show more plainly the dove-tail therein. Fig. 5 is a detail view in perspective of one of the short coils from which the pin is formed. Fig. 6 is a plan view of the pin completed for use. Fig. 7 is an edge view thereof.

In the accompanying drawings A represents a shaft of any desirable diameter and length to adapt it for coiling the wire, said shaft having its bearings in a suitable frame. In the present instance I have shown a frame

consisting of the end sections B E and the top section B', the end section E being somewhat longer than section B and the journal of the roller A which has its bearings therein is formed at its end with a dove-tail bifurcation *a*, as shown more clearly in Fig. 4. At the opposite end of the shaft A is the journal *b* which has a flat sided extension *a'* for attaching thereto a crank handle or other suitable means for turning the shaft, as any suitable means may be employed for imparting to the shaft the rotary motion necessary to form the coils in the wire.

The shaft A is removably journaled in the frame hereinbefore described, the journal *b* thereof having its bearings in an open slot *c* in the end section B of the frame, which is closed to retain the journal therein, by a suitable key C, said key being removed when it is desired to remove the shaft. This key or pin closes the outer or open end of the slot and holds the shaft from accidental displacement, but it can be readily removed when it is desired to remove the shaft.

Near one end of the shaft A is a hole *d* for the insertion of the end of the wire which is to form the coil, and adjacent to this hole is a guide D surrounding and fixedly secured to the shaft as seen in Fig. 2, which guide serves to keep the wire from coming against the vertical portion E of the frame, and retarding the revolution of the shaft. The outer side of the end section E of the frame is beveled as shown at *f* (Fig. 1), and the rear portion F is formed with a segmental depression *g* which serves to hold the coil of wire hereinafter described. Two or more pins *g'* are provided to project from the beveled support *f* and so arranged as to be within the coil when the latter is placed in position on said support as indicated by dotted lines in Fig. 1. A detachable steel wearing-plate H is provided at the outer side of the frame section E to take the wear caused by the turning of levers of the article. To the frame-section E is hinged a clamp I at the lower end thereof as shown at *i*, and has a bevel inner face as shown at *j*, the forward edge of the clamp being provided with a depression *k* to fit around the bifurcated end of the journal of the shaft A, said bevel being opposite and parallel to that of the bevel support *f*.

The operation is as follows:—A coil of suitable wire, preferably galvanized steel, is formed on the shaft, the end of the wire being inserted in the hole in the shaft provided therefor and the shaft then revolved, the coils thus formed lying close together as seen in Fig. 5. The coils are then cut in a line with the shaft which serves as a mandrel, every third wire in the coil being cut by a chisel or other suitable tool. The shaft is now removed and the small coils broken apart and the shaft replaced in position, after which the coil as shown in Fig. 5 is placed in position on the bevel support *f* as shown more clearly in Fig. 3, one wire of the coil lying in the dove-tail bifurcation and the pins on the bevel support being inside of the coil and the hinged clamp in position shown in Fig. 2. Now the hinged clamp being brought up against the coil to hold it in position against the bevel support as previously stated, the shaft is turned which will form one of the levers *o* shown in Figs. 6 and 7 of the article, and by simply turning the coil over and repeating the operation, the other lever *o* is formed, thus forming the complete pin with its levers which serve as fulcrums to open the coil to allow it to slip over the article to be held in place.

The dove-tail in the bifurcation upon the end of the journal of the shaft is of material importance, as it serves as a grip to bring the ends of the wire which are to form the levers perpendicularly along the wearing-plate and gives the flare to the levers as shown in Fig. 7, the levers flaring outwardly as will be readily seen and the coils lying close together. The extremities of the outer coils are bent inwardly as shown at *n* toward the center of the coils and this is formed at same time the levers are turned upward, because of the wire resting on the pins *g'* projecting from the bevel support upon the end section of the frame.

The complete pins, as shown at *L*, Figs. 6 and 7, are very readily made and can be placed in the market at a comparatively small cost and possess both strength and durability.

Having now fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. A machine for forming wire articles, consisting of a suitable frame, a revoluble shaft, removably held therein and a guide upon said shaft, near one end thereof substantially as and for the purpose described.

2. A machine for forming wire articles, consisting of a suitable frame having a beveled support for the coil of wire, a revoluble shaft having a bifurcated journal, and a hinged clamp at one end of the frame having beveled

inner face substantially as and for the purpose specified.

3. In a machine for forming wire articles, the combination of a revoluble shaft having a bifurcated journal, a frame having projecting pins at one end, a beveled support at the same end, and a hinged clamp, substantially as and for the purpose described.

4. A machine for forming wire articles, consisting of a suitable frame and a revoluble shaft having a dove-tail bifurcated journal, substantially as and for the purpose specified.

5. A machine for forming wire articles, consisting of a suitable frame, a revoluble shaft having its bearings therein, a guide on said shaft at the end thereof nearest the bifurcated journal, and a bifurcated journal upon one end of the shaft, substantially as and for the purpose set forth.

6. In a machine for forming wire articles, the combination of a suitable frame, a hinged clamp upon the frame, at the journal-end thereof and a journal upon the end of the shaft having a dove-tailed bifurcation, substantially as and for the purpose described.

7. In a machine for forming wire articles, the combination with a revoluble shaft having one of its journals bifurcated, of a suitable frame having a beveled support and a hinged clamp at the end of the frame having its interior face beveled parallel to the bevel of the support, substantially as and for the purpose set forth.

8. In a machine for forming wire articles, the combination with a revoluble shaft having a dove-tailed bifurcated journal, of a suitable frame having a beveled support for the wire article to be formed, pins projecting therefrom, and a hinged clamp at the end of the frame and closing against said beveled support, substantially as and for the purpose described.

9. A machine for forming wire articles, consisting of a suitable frame having a wearing-plate, a beveled support at one end, pins projecting therefrom, a hinged clamp at the same end of the frame as the beveled support and having a beveled inner face, and a removable shaft having its bearings in the frame and having a bifurcated journal, substantially as and for the purpose set forth.

In testimony that I claim the above I have hereunto subscribed my name in the presence of two witnesses.

LOUIS H. PORTER.

Witnesses:

W. H. HENDERSON,
C. N. MILBURN.