E. J. Horner,

Making Springs,

No. 45,041. Patented Nov. 15, 1864

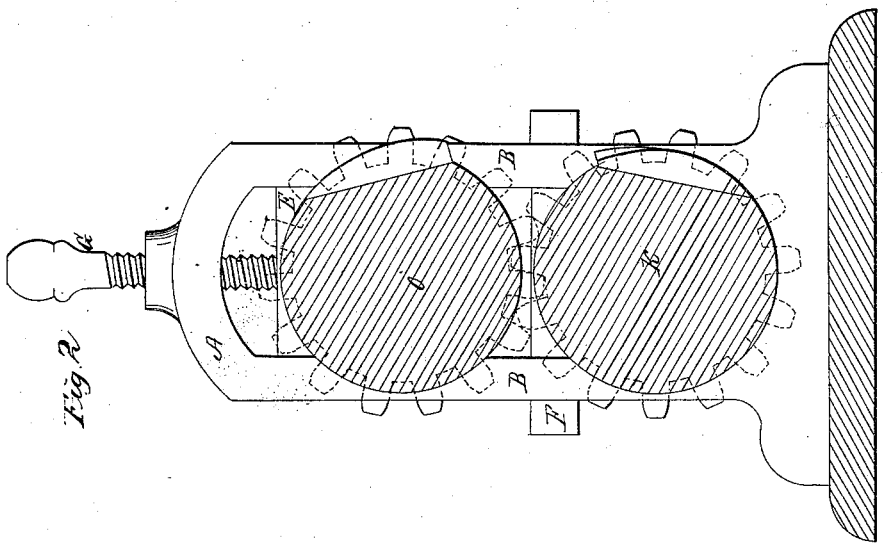

Fig. 2

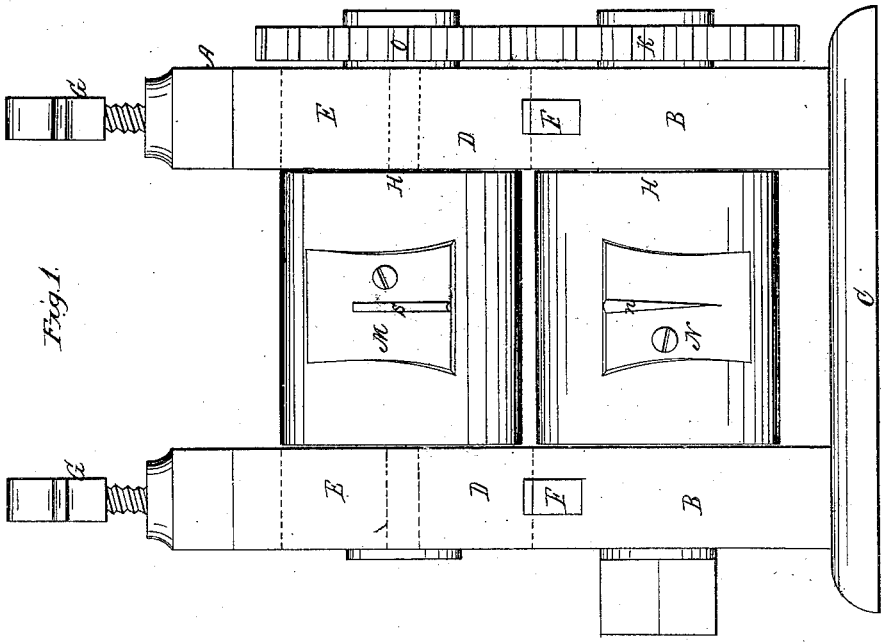

Fig. 1.

Witnesses;
John P. Jacobs
C. Alexander

Inventor;
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per C. M. Alexander Atty

UNITED STATES PATENT OFFICE.

EDWIN J. HOMER, OF WILMINGTON, DELAWARE.

IMPROVEMENT IN MACHINES FOR DRAWING SPRING-POINTS.

Specification forming part of Letters Patent No. **45,041**, dated November 15, 1864.

To all whom it may concern:

Be it known that I, EDWIN J. HOMER, of the city of Wilmington, in the State of Delaware, have invented certain new and useful Improvements in Machines for Drawing Spring-Points; and I hereby declare that the following is a true and exact description of the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon.

In the annexed drawings, Figure 1 represents a side elevation of my machine. Fig. 2 gives an end elevation of the same.

The letter A designates the frame of the machine, which is made of metal or other suitable material. The frame A consists of two uprights, B, resting on base C. The uprights B have an open space in them extending from near the top to a point some nine inches (more or less) from the base C. (See Fig. 2.) The object of this opening is to receive the upper head-blocks, E, and the lower head-blocks, D. The head-blocks D have each a groove cut in their lower surface to receive the followers F, these followers passing through the uprights B, as represented in Fig. 2. The mortises through which the followers F pass are made sufficiently long to admit of the followers playing vertically a quarter of an inch or more. The upper head-blocks, E, are acted on by the screws G, which penetrate to the top of uprights B and press at their lower ends against the upper surface of head-blocks E. (See Fig. 2.)

H represents two cylinders, the upper one resting between the two head-blocks E and D, and both cylinders being reduced at their ends to about half their diameter, having shoulders that rest against the inside of uprights B. The lower cylinder revolves at the bottom of the open space in the uprights. One end of the lower cylinder projects far enough to receive a pulley on it, by which the machine is operated. The opposite end is furnished with the cog-wheel K, which gears into a similar cog-wheel, O, on the neck of the upper cylinder.

M and N represent two dies made of steel and dovetailed in the cylinders H, midway between the uprights B. These dies will be fastened with screws, to prevent them from changing their position, and can be removed to be replaced with others. The die S on the upper cylinder has on its surface a convex elevation extending about two-thirds of its length. This elevation is the eighth of an inch (more or less) in height at its outer end, and tapers until its inner end is reduced to a level with the surface of the die. The lower die has a corresponding depression in it, intended to receive the convex elevation of the upper die. It will be seen that a plate of metal in passing through between the dies will have a convex elevation upon its under side, and a corresponding concave in its upper side. In constructing a spring with these plates each successive one is confined in its place by means of the concave in the upper plate receiving the convex elevation on the next plate beneath. By this mode of fastening the plates are so bound together as to prevent any lateral displacement.

In springs of the present construction the plates are fastened together by means of knobs confined in longitudinal slots made in the plates. This mode is objectionable, as the play of the spring will gradually wear away the knobs, and the slots in the plates tend to weaken them.

Having thus described my machine, what I claim, and desire to secure by Letters Patent, is—

The cylinders H, in combination with the dies M and N, the whole constructed and operated substantially as and for the purpose herein set forth.

EDWIN J. HOMER.

Witnesses:

CHARLES ALEXANDER,
JOHN P. JACOBS.