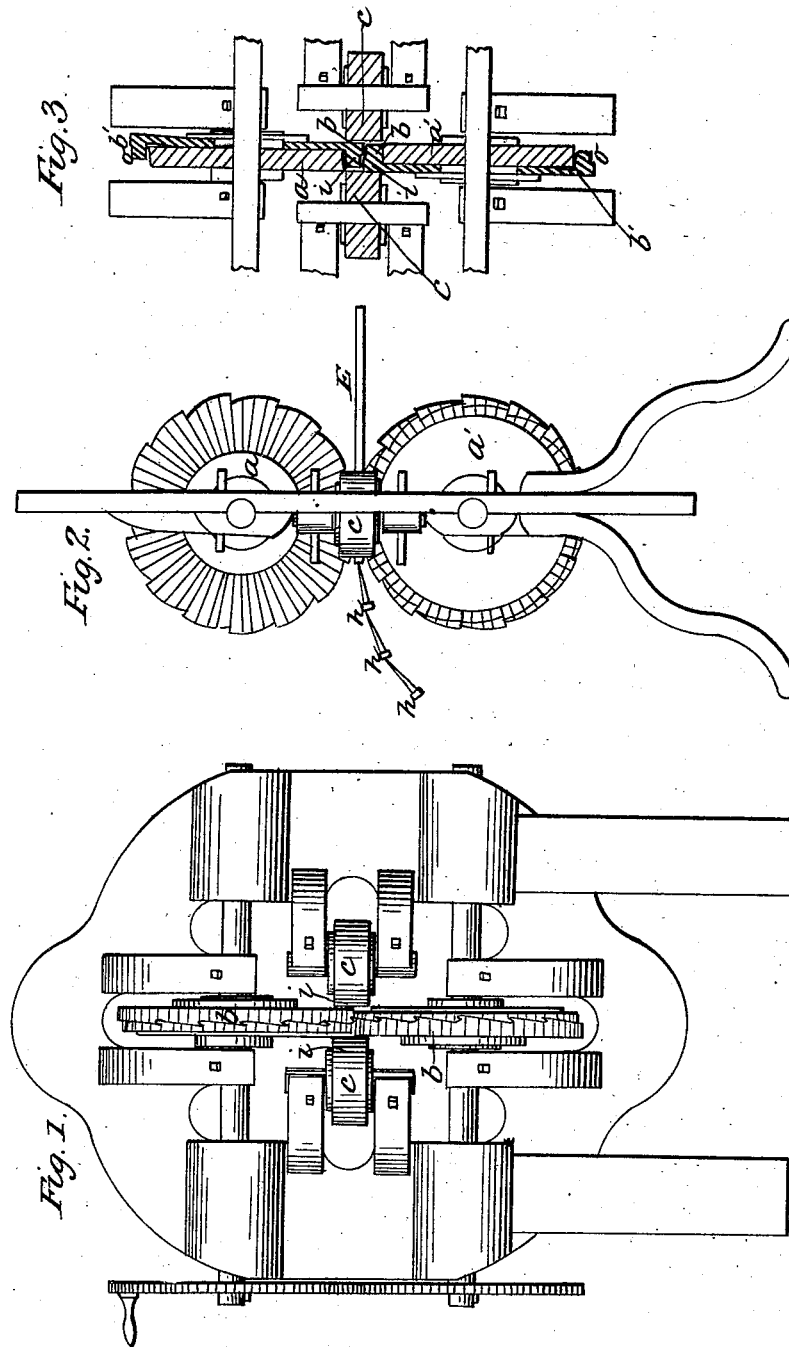


C. J. RICHARDS.  
Making Wrought Nails.

No. 5,853.

Patented Oct. 17, 1848.



# UNITED STATES PATENT OFFICE.

CHAS. J. RICHARDS, OF NEW YORK, N. Y.

## CYLINDRICAL WROUGHT-NAIL MACHINE.

Specification of Letters Patent No. 5,853, dated October 17, 1848.

*To all whom it may concern:*

Be it known that I, CHARLES J. RICHARDS, of New York, in the county of New York and State of New York, have invented a new and Improved Machine for Making Nails, Spikes, &c.; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure I, is a front elevation. Fig. II, is a side elevation. Fig. III, is a section showing the spring hammers.

The nature of my invention consists in making a machine to make nails from rods, by means of cylinders, four being used; two of which are composed of a disk with cams attached to springs and the center or disk, while there are two others which are for closing the cams; these cams with the openings connected I call spring hammers. The two cylinders of spring hammers form the nails on their peripheries and sides or flanges; these being so shaped as to give shape to the nails. The form of the nail to be produced is formed upon the periphery and flanges of the cylinders, that is, the form of the head is inducted into and the points raised up on the surface of these cylinders of spring hammers so that by passing the rods through between the cylinders, (the rods being at a welding heat) the rod will be converted into nails in manner hereafter described. Although these cams, or spring hammers, form parts of cylinders, jointly, they have each a flat face or end over which the rods pass and upon which the nails are formed.

The same references, by letters, indicate the same parts in all the drawings.

Two cylinders, (*a*, *a'*) composed of the spring hammers are made, each hammer being fitted so as to radiate from the center and from a wheel as nearly as possible to solid, and by the aid of bolts and a ring are attached and confined to a solid center piece placed upon the shaft for that purpose; the spring and cam, or spring hammer, being so arranged as to project beyond the ring and center piece have freedom to act, so as to spring in or out from time to time as described hereafter. The spring or shank of the hammer is bent a little outwardly which gives it an opportunity to stand off from the center a little way when there is no pressure to keep it up to the center, see

(*b' b'*); the spring hammers are all alike and a given number make up a cylinder; yet, the peripheries vary where a head is to be made and where a point is to be made; that is, the outer end of these vary, so as to have a depression of the size and shape required for a head, and rise of the size and shape of the intended point; this last may extend so as to cut off the rod, and thus a forms a point and separate each nail by cutting it from the one that succeeded it. The cylinders should be made up so as to give the length of a certain number of nails in one revolution; thus, a head should immediately follow a point, and succeeding the head straight faced hammers should be placed until it reaches the required length to the point, and so on, one nail being formed is to be succeeded by another resembling itself, and so on to continue.

The spring hammers in their natural or free position spring off from the vertical center as seen at (*b' b'*) but are closed when the nail is forming as seen at (*b b*), (Fig. 3).

The cylinders of spring hammers (*a* and *a'*) are shown as in a vertical position, and two plain cylinders are in a horizontal position opposite the line of pressure; that is, the line of passing through the rods upon the periphery of the two cylinders, or rather between them.

The two horizontal cylinders (*c c*) are plain pressure cylinders which are intended to throw or force in the spring hammers, to a close bearing each to the other, while the rod is passing through and the nail is being formed. Thus, it will be understood that two cylinders (*a* and *a'*) are made as nearly as possible to correspond with each other and are geared in like manner, so that when there is a head to be formed, or a point, each shall have its part in the formation thereof, each having a corresponding projection or depression as the case may be.

The two cylinders (*a* and *a'*) or rather the spring hammers are made with flanges on the outside as (*o*) which continue all the way round and are for the purpose of bringing up the sides or edges at the same time the opposite sides are being formed; and this, by the pressure of the cylinders (*c*) against the outer or backside of the spring hammers, pressing them in as seen at (*i*) in Figs. 1 and 3, when in action and relieving them when they pass out from between the

said cylinders (*e*). Thus by the pressure being applied to the whole of the four sides at the same time, and continuously and the rod passing through until the whole  
5 is used up keeps for the time being a continuous operation rolling out nails produced under an equal pressure on all its sides, forming the heads and points as well as the sides at this one operation; and these  
10 wrought nails.

The whole is to be placed in a strong frame, and when the cylinders are all regulated for operation motion is given the machine, the end of a rod of hot iron is inserted  
15 between the cylinders by which it is drawn in on the entering side and is thrown out on the opposite side as seen by reference to Fig.

2 in the drawings, (*e*) being the rod and (*h*) the nails discharging.

I do not claim making nails by means of 20 two cylinders as that has before been done as well as rolling two cams together for the purpose of making nails.

What I claim as my invention and desire to secure by Letters Patent is— 25

The spring hammers, combined into a cylinder in manner, and for the purpose described; viz: making nails, brads, spikes and such like articles.

C. J. RICHARDS.

Witnesses:

J. L. KINGSLEY,  
W. BECK.