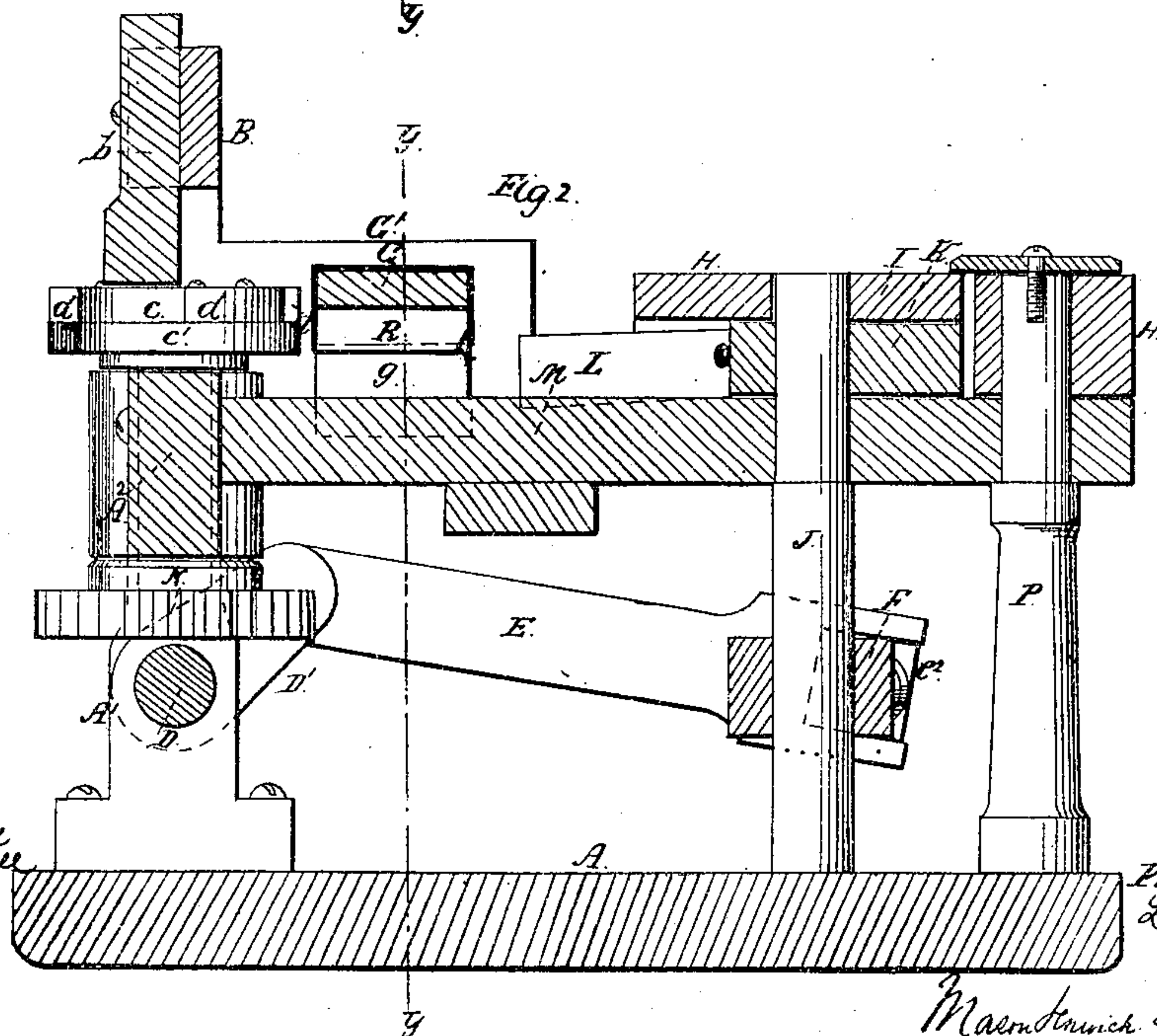
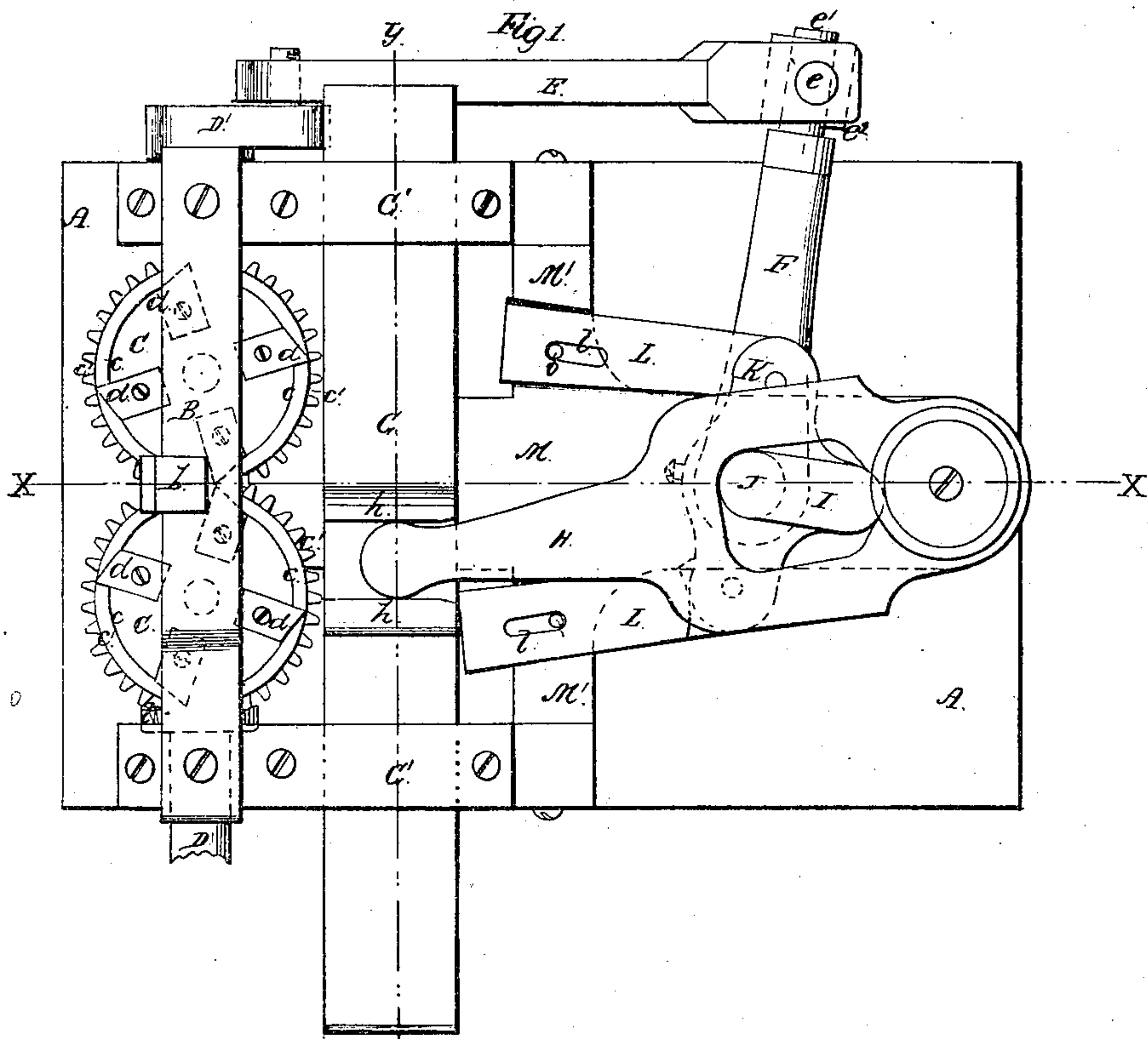


L. Thomas
Making R.R. Spikes.

No 98.444.

Patented Dec. 28. 1869



Witnesses
R. Campbell
J. R. Campbell

Inventor
L. Thomas

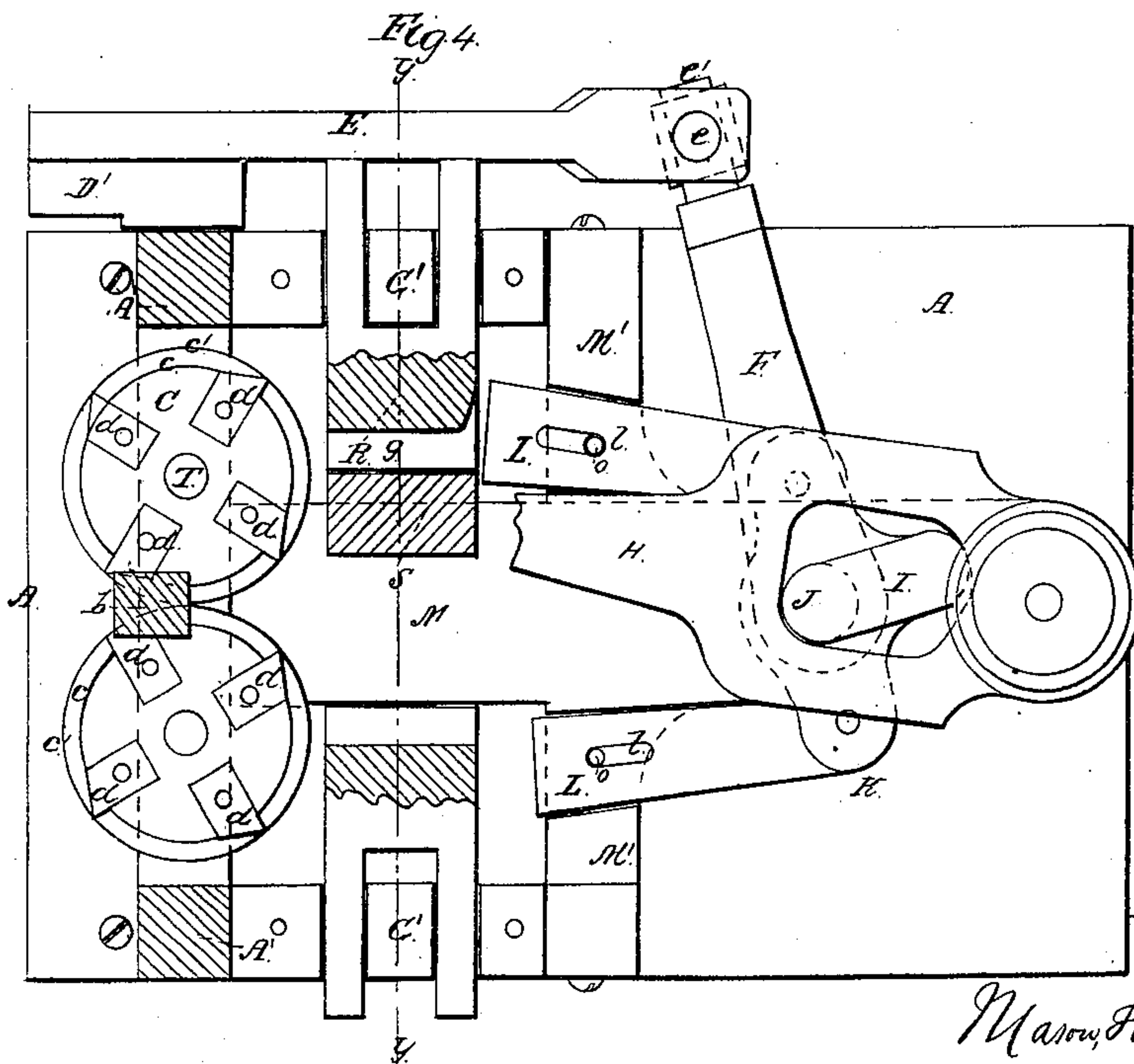
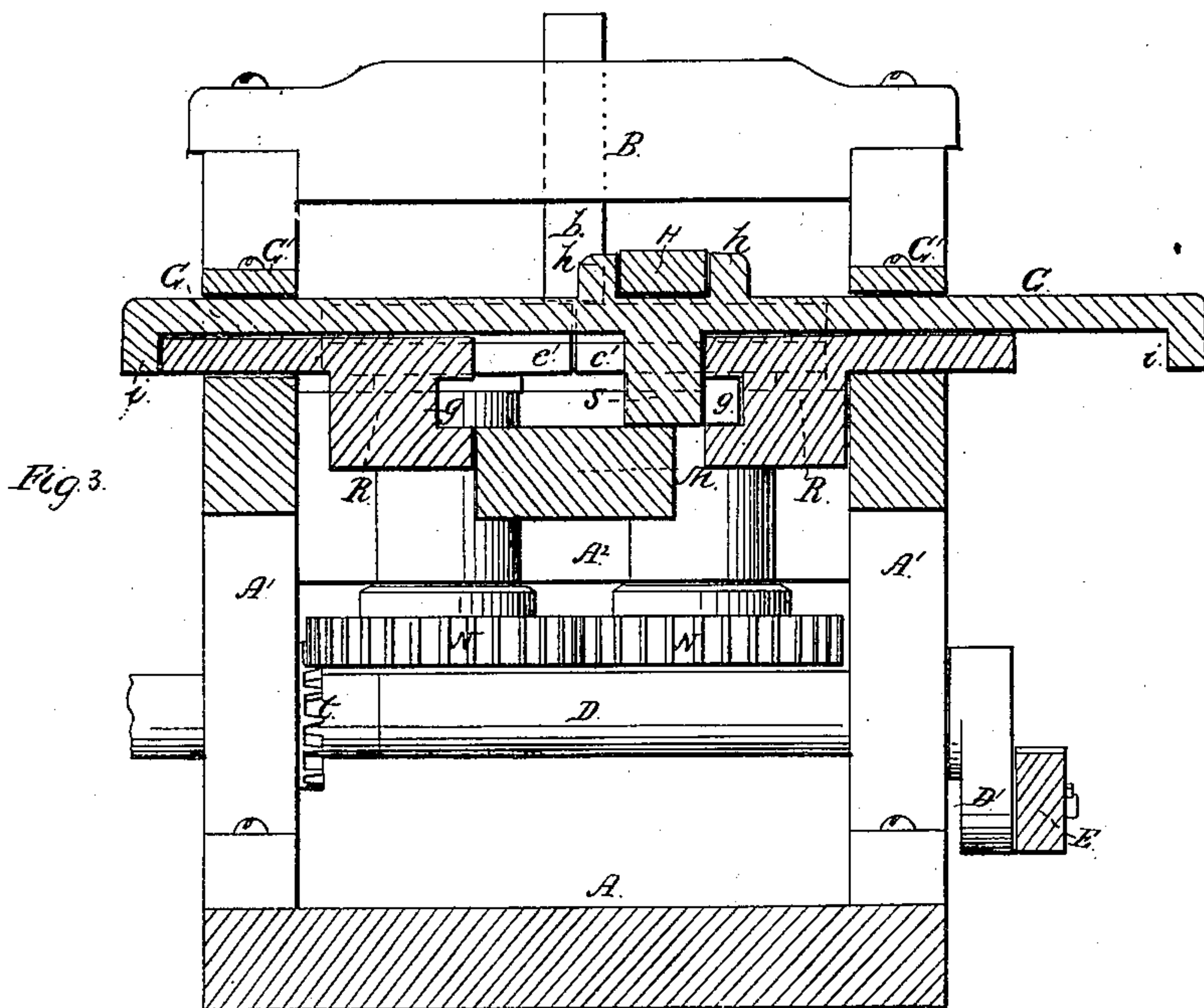
Maerhynch & Lamer

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UNITED STATES PATENT OFFICE.

LEOPOLD THOMAS, OF PITTSBURG, PENNSYLVANIA.

IMPROVED MACHINE FOR MAKING RAILROAD-SPIKES.

Specification forming part of Letters Patent No. 98,444, dated December 28, 1869.

To all whom it may concern:

Be it known that I, LEOPOLD THOMAS, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and Improved Machine for Making Railroad-Spikes; and I do hereby declare that the following is a full, clear, and exact description thereof, reference being had to the accompanying drawings, making part of this specification, in which—

Figure 1, Sheet 1, is a plan view of the machine. Fig. 2, Sheet 1, is a section taken longitudinally through Fig. 1 in the vertical plane indicated by red line X X. Fig. 3, Sheet 2, is a section taken transversely through Fig. 1 in the vertical plane indicated by red line Y Y. Fig. 4, Sheet 2, is a section taken horizontally through parts of the machine, showing the pointing-rollers, the gripping-dies, and the headers.

Similar letters of reference indicate corresponding parts in the several figures.

This invention relates to certain novel improvements on machinery designed for making railroad-spikes.

The nature of my invention consists, first, in two circular rotating supports and guides for the spike-rods, which are provided with pointing and cutting-off tools, in combination with a stationary overhanging abutment, which will keep the spike-rod down in place during the operations of feeding it into the machine, pointing it, and cutting off the blanks, as will be hereinafter explained; secondly, in combining with rotating pointers a reciprocating carrier and gripping-jaws so arranged and operated in harmony with the said pointers that as rapidly as the pointed blanks drop from the pointers they will be carried to alternate sides of the center of the machine and firmly held during the operation of heading, as will be hereinafter explained; thirdly, in alternately-reciprocating heading-arms so arranged with reference to two gripping devices and a reciprocating carrier as to form heads upon the pointed blanks as rapidly as they are confined by the said gripping devices, as will be hereinafter explained.

To enable others skilled in the art to understand my invention, I will describe its construction and operation.

In the accompanying drawings, A represents the bed or foundation of the machine, from one

end of which rise perpendicularly two standards, A' A', connected together at their upper ends by a horizontal cross-head, B. Below this cross-head, and in the same horizontal plane therewith, is a transverse bearer, A², which is constructed with journal-boxes for receiving two vertical shafts, T T. These shafts are arranged at equal distances from the center of the length of bearer A, and they carry on their upper ends the pointing-heads C C and on their lower ends two spur-wheels, N N. Spur-wheels N N engage with each other, are of the same diameter, and receive rotation from a spur-wheel, t, which is keyed on a horizontal driving-shaft, D, which has its bearings in posts A' A', below the plane of said wheels. The two pointing-heads are alike, and each one consists of a circular rabbeted disk having beveled pointing-tools *d* arranged at regular intervals apart around the circumference of its reduced portion *c*, with the cutting-edges of which tools extend out to the circumference of the base-support *c'*. The two heads C C are arranged so that as they rotate the pointing and cutting-off tools will work together in pairs to point and cut off the blank spike.

The depending abutment *b* is arranged so as to afford an upper bearing for the spike-rod while a spike is being pointed and cut off. It forms one side of a rectangular space, the other three sides of which are formed by the flanges *c' c'* and vertical shoulders *c c*. This abutment *b* prevents the metal of the spike-rod from spreading upwardly during the operation of the tools *d d*.

G' G' are bearings, which are secured rigidly to the rear sides of the standards A' A' in a plane parallel to the plane of the bed A, and which are adapted to serve as supports and guides for a transverse reciprocating bar, G. This bar G receives between abutments *h h*, formed on its upper surface, the rounded free end of a horizontal vibrating arm, H, which vibrates about a post, P, and which receives its motion from a cam, I, on the upper end of a rock-shaft, J. The cam I works in a yoked portion of the arm K, and the shaft J, carrying this cam, receives its oscillating motion from a crank-arm, D', on the main shaft D, acting through the medium of pitman E, swivel-block *e'*, and the arm F.

To that rock-shaft J just below the cam I a lever, K, is keyed, whose arms are of equal

length, and to which arms two headers, L L, of equal length, are pivoted at their rear ends. The headers L converge toward the front part of the machine, and are guided and held in their places by fixed pins *o o*, passing through oblong slots *ll*, and also by recessing the headers into grooves made in supports M' M', as shown in Figs. 1 and 4. The headers receive alternate reciprocating movements from the arms of their lever K.

S is a carrier, which is applied to the bottom side of the bar G at the middle of its length, for the purpose of moving the pointed spike-blanks after they leave the pointers and fall upon the table M in position to be acted upon by the headers, and then confining these blanks during the operation of forming heads upon them. The table M is arranged in a horizontal plane below the plane of the pointers C C, and this table receives the spike-blanks as they fall from these pointers, and allows the carrier S to move them into the recesses *g g*, formed in sliding heads R R. The sliding heads R R receive movements equal to the length of spaces between the edges of table M and the bearings G' G', which movements are imparted to these heads of the carrier S and the shoulders *i i*. The carrier S moves the heads R R outwardly, and the shoulders *i i* move these heads R R inwardly.

The operation is as follows: The spike-rod is properly heated and introduced between the pointers C C, which rotate in the direction indicated by the arrows in Figs. 1 and 4, point the rod, and cut off the pointed piece length to form a spike. This pointed piece or blank falls upon the table M, and is immediately moved in a lateral direction by the carrier S and delivered into a recess, *g*, in one of the heads R. The carrier and head then move together a short distance, when the head will be arrested by the bearing G' and the carrier caused to hold the spike-blank firmly until it is headed. During the operation of adjusting the spike-blank into said head R and forming the head, another spike-blank will be deliv-

ered upon the table M in position for being moved by carrier S into the opposite head R, to be confined in place and headed, as above described.

It will be seen by reference to Fig. 3 that the heads R R will be alternately moved up to the table M, and then moved outwardly against the sides of the bearings G'. The object of having the heads R R movable is to leave a space between each head R and the table M, for the discharge of the finished spike after the heading operation and before another spike is delivered into the opposite head R.

It will also be seen that the machine is a double one—that is to say, two headers are employed, arranged on opposite sides of the longitudinal center of the machine, in combination with two gripping-heads, which allow the spike-blanks to be held firmly in them by the laterally-reciprocating carrier.

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

1. Two circular pointing-rollers presenting three rotating sides, in combination with an abutment which presents one stationary side, said parts being arranged so as to grip the spike-rod point and cut off the spike-blanks and deliver them in position to be carried to the heading-dies, substantially as specified.

2. The laterally-reciprocating carrier device S, adapted for delivering a spike-blank into a heading-die, and also holding it firmly therein while the heading is being done, substantially as described.

3. Two heading-dies, in combination with a laterally-reciprocating carrier, which will alternately deliver the blanks into said dies, substantially as specified.

4. The combination of two heading-dies, two headers, and a laterally-movable blank-carrier, substantially as specified.

LEOPOLD THOMAS.

Witnesses:

JAMES L. IRWIN,
WILLIAM L. TINER.