Sheet 1, 3 Sheets.

C. Lyon.

Making Rivets.

No. 1,756. Patented Sept. 2, 1840.

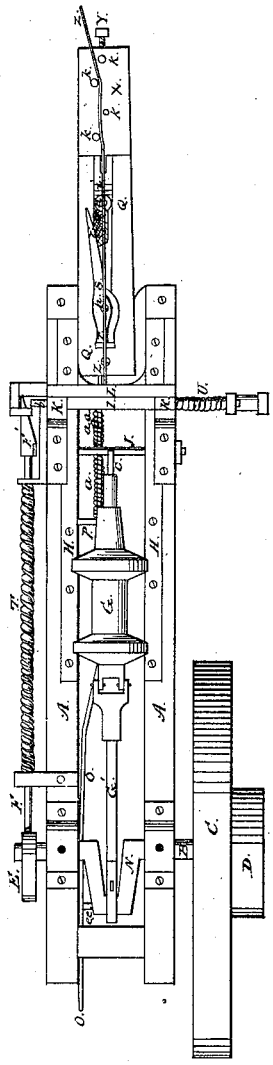

Fig. 1.

Witness.

Owen G. Warren

Inventor.

Charles Lyon

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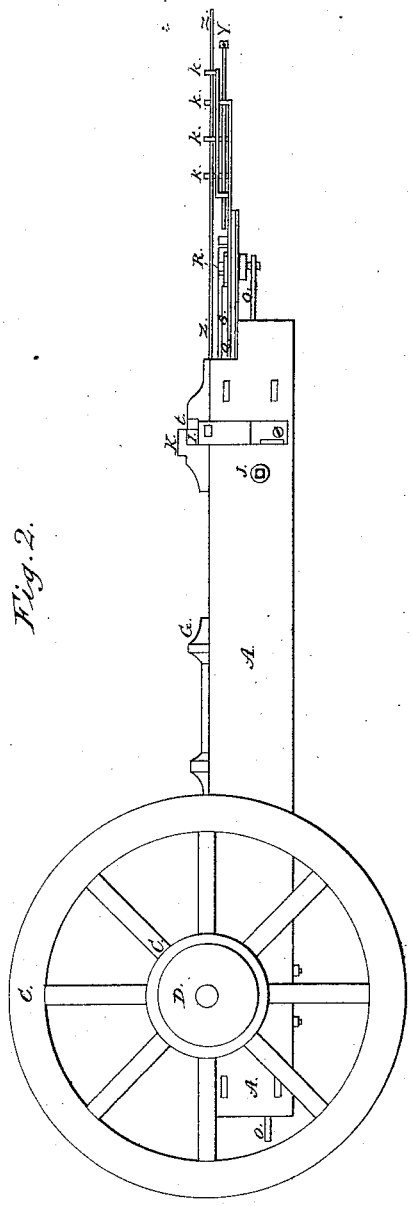

Fig. 2.

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Sheet 3, 3 Sheets.

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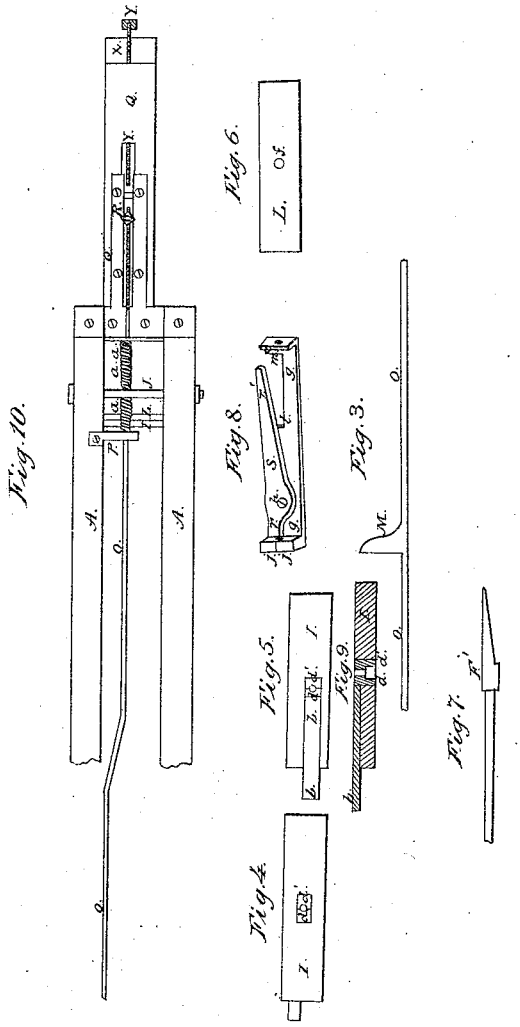

Witness.

Owen G. Warren

Inventor.

Charles Lyon

UNITED STATES PATENT OFFICE.

CHARLES LYON, OF NEW YORK, N. Y., ASSIGNOR TO ALPHEUS FOBES AND F. W. TAYLOR.

MACHINE FOR MAKING RIVETS.

Specification of Letters Patent No. 1,756, dated September 2, 1840.

To all whom it may concern:

Be it known that I, CHARLES LYON, of the city of New York, in the State of New York, have invented certain Improvements in Machines for Making Rivets; and I do hereby declare that the following is a full and exact description thereof.

In the accompanying drawing, Figure 1, represents a top view of the machine, and Fig. 2, a side view. The other figures represent portions of the machine in detail, and in each of the figures like parts are designated by the same letters of reference.

A, A, Fig. 1, is the frame of the machine, which may be made either of wood, or of iron. B, is the main shaft, having on one end of it a fly wheel, as at C, and a driving pulley D. This shaft likewise has on it a cam, or a crank, for giving motion to the follower and heading die. When intended for large rivets, a cam should be used for this purpose; for those of a smaller kind, a crank, as shown at N, may be employed. G, is the follower, which carries the heading die; this follower should be formed of a large mass of metal, to give it the stability and force which are essential in this part.

G′, is the pitman, or shackle bar, by which it is moved back and forth, and H, H, the slides, or guide pieces, by which it is supported and directed. I, is the upper edge of what I denominate the open die plate. This die plate has a sliding motion endwise, under the straps, or clamps, K, K, and against the stationary plate L, which is firmly affixed to the frame.

Figs. 4 and 5, show the reverse sides of the open die plate, which is to be made sufficiently thick to receive such length of the wire, or rod, from which the rivet is to be formed, as may be required to constitute its shank and head; Fig. 4, is that side of the die plate which is toward the heading die, and Fig. 5, that side which bears against the stationary plate L; *d*, *d′*, are the steel dies which receive the wire, or rod, and which serve to cut it off, and with the aid of the heading die, to form its head; the half *d* of this die is attached to or bears against, a sliding piece *b*, *b*, which is let into, and slides within, the die plate.

Fig. 9, is a sectional view from side to side of the die plate, showing the form of the dies for producing the head and shank of the rivet. F, F′, is a rod by which the sliding piece *b*, *b*, the die plate I, and the dies *d*, *d′*, are made to slide; a part of this rod is shown separately in Fig. 7. The end F′, of this rod constitutes a wedge which bears against the sliding piece *b*, *b*, and when this wedge is forced forward it will close the half die *d*, against the corresponding half *d′*, and also cause the die plate to slide endwise. The die plate I, when relieved from the action of the wedge is forced back by the spiral spring U, operating against its end. E, is a cam on the end of the main shaft, which cam forces the rod F, F′, forward at the proper time, and it is forced back, when relieved from the cam, by the spiral spring T. Through the stationary plate L, there is a hole *f*, Fig. 6, which corresponds with the hole in the open die plate when said plate is forced back by the spring U; the wire, or rod, is fed in through this hole, by means of the feeding apparatus, to be presently described, and after being fed in it is cut off by the sliding motion of the die plate, the cut off piece being carried forward by said sliding motion so as to be sustained against the solid part of L, and while there, the heading die *c*, properly formed for the purpose, is brought up against, and heads, it; and in the next feeding operation the headed rivet is pushed out of the die, and falls under the machine. The feeding is effected by means of a pair of sliding tongs by which the wire, or rod, is gripped, and carried into the die plate, motion being communicated to the sliding tongs by a rod connected with them, and extending back to the main shaft, by the revolution of which shaft said rod is actuated.

Fig. 10, is a view of the underside of a part of the machine. Q, Q, is a plate which serves as a bed and guide for the sliding tongs, having an excavation, or slot, along it within which they are received. They are shown in place at S, Fig. 1, and separately in Fig. 8; their lower portion *g*, *g*, is received within the guide slot of the plate Q, Q; and their upper section *r*, *r′*, works on a joint pin at *h*. The turned up end *i*, has a hole through it to admit the rod, or wire, Z, Z, in its passage to the jaws *j*, *j*; when the wire is sufficiently small, it is made to pass between straightening wires *k*, *k*, on the bed X, in the ordinary manner.

O, O, in the respective figures is the feeding rod or bar. This rod has a projection M, on it, toward its rear end, as shown in Fig. 3, which projection rises up at the back

of the main shaft B, by the revolution of which it is drawn, or forced, back. A pin is shown at *e*, *e*, Fig. 1, projecting from the side of the crank, which pin, or any suitable cam-formed piece, coming in contact with the projection M, on the rod O, O, forces it back; and when relieved from this, it is carried forward by the spiral spring *a*, *a*, bearing against the standard P. From the fore end of the rod O, O, rises a stud R, attached thereto, and adjustable thereon, and this stud, as the rod O, is forced back, comes into contact with the tapered end *r'* of the jaws of the tongs S, and closes them on the rod, or wire, Z. This stud comes also into contact with the offset, or shoulder, *l*, on the lower portion *g*, *g*, of the tongs, and forces them inward, with the wire, or rod, which they have gripped.

Y, is a tempering screw, by which the distance to which the tongs shall slide back, and, consequently, the length of the piece to be headed, are determined. The tongs are carried back by the stud R, coming against the offset *m*, at the extreme end of the lower jaw.

Having thus, fully described the nature of my machine for making rivets, and shown the manner in which the respective parts are constructed, and operate; and having in so doing included many parts of which I do not claim to be the inventor, I do hereby declare that what I do claim therein as original, and desire to secure by Letters Patent, is—

1. The particular manner in which I have combined and arranged the parts constituting what I have denominated the open die plate, and its immediate appendages; that is to say, I claim the combining of the slide *b*, *b*, with the sliding half *d*, of the die, and with the die plate I, and with the wedge F' so that the respective parts may be operated upon in the manner, and for the purpose, herein set forth.

2. I claim the manner in which I have arranged, and combined, the feeding apparatus, as herein set forth, intending by this arrangement and combination, the manner of operating the feeding rod O, O, by a cam, or a pin, on the main shaft, and of operating the feeding tongs by means of the stud R, on the opposite end of said rod; the stud R, closing the tongs, and moving them back and forth by its action against the offsets thereon, all constructed and operating as herein fully made known.

CHARLES LYON.

Witnesses:
JOHN G. CAMERON,
O. H. PLATT.