

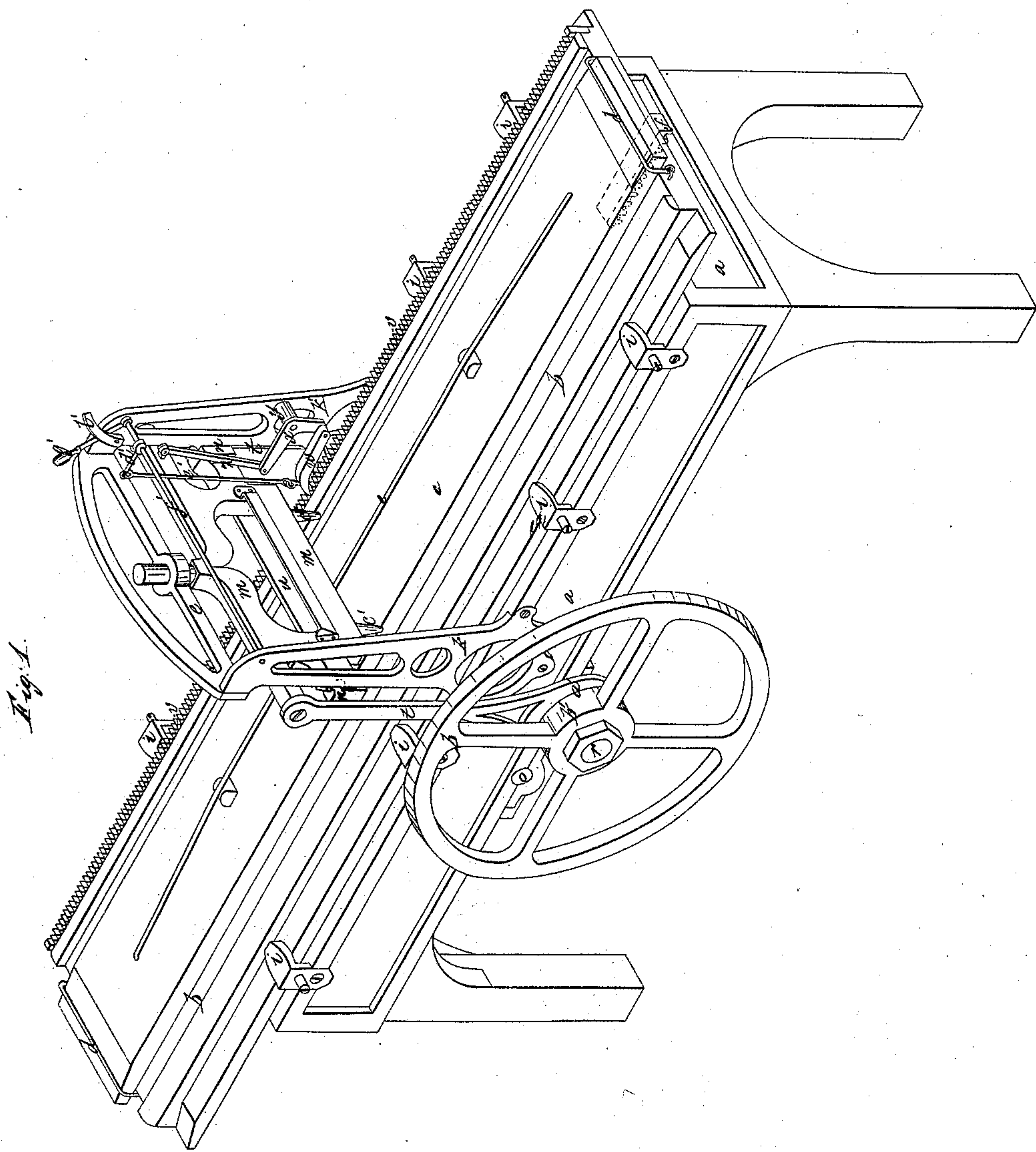
Sheet 1-2 Sheets.

J. R. Hague,

Hose Machine,

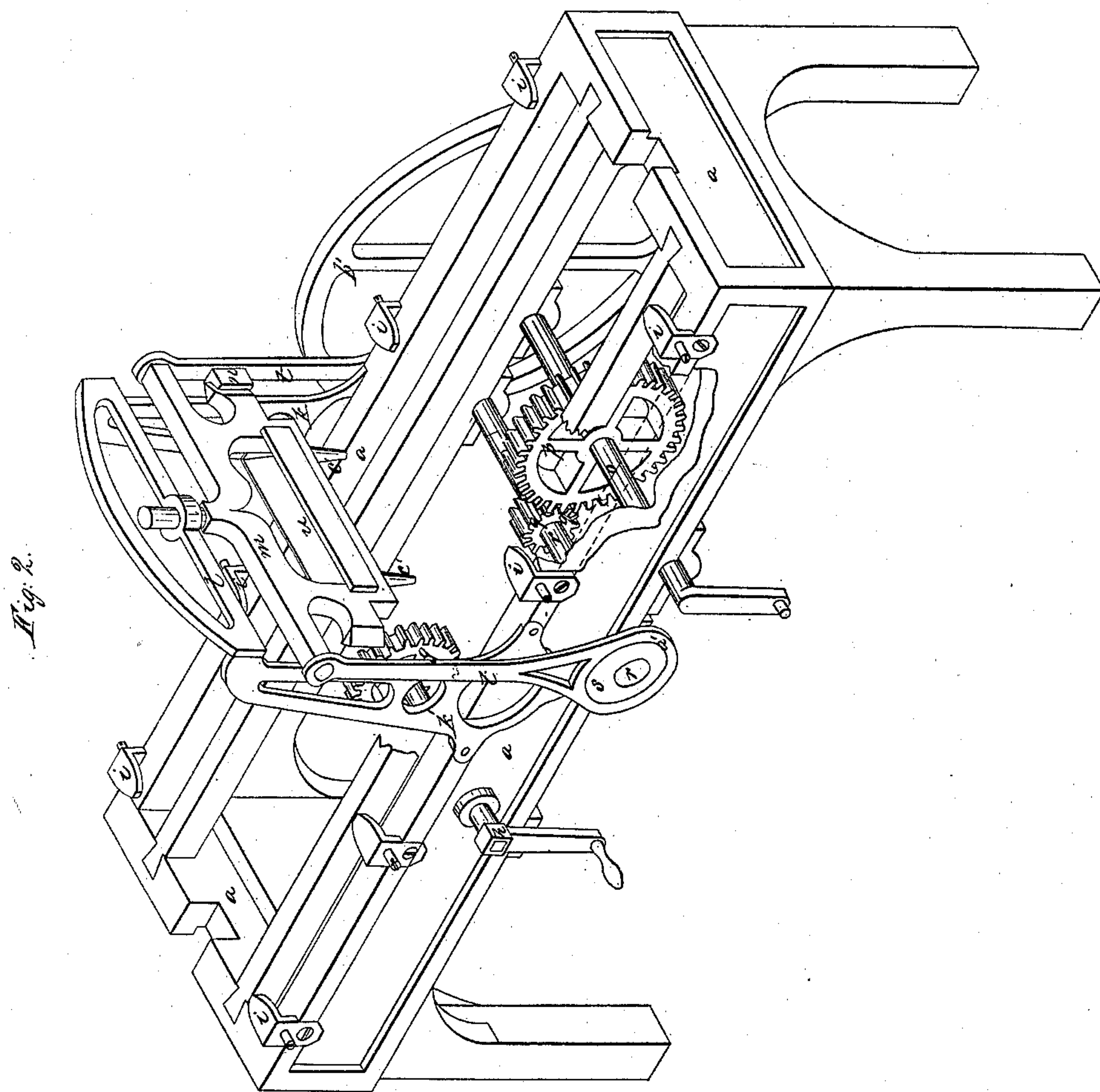
No. 11,222,

Patented July 4, 1854.



Sheet 2-2 Sheets.

J. R. Hague,
Hose Machine,
No 11,222, *Patented July 4, 1854.*



UNITED STATES PATENT OFFICE.

JOHN R. HAGUE, OF PITTSBURG, PENNSYLVANIA.

MACHINE FOR PUNCHING RIVET-HOLES IN HOSE.

Specification of Letters Patent No. 11,222, dated July 4, 1854.

To all whom it may concern:

Be it known that I, JOHN R. HAGUE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Machine for Punching Rivet-Holes in Hose; and I do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the annexed drawings, forming part of this specification, in which—

Figure 1 is a perspective view of my machine, and Fig. 2 is a perspective view of the same with the sliding table removed and turned so as to present the end and side of the machine which are not shown in Fig. 1.

The several parts of the machine are marked on the drawings with letters of reference, similar letters being used for like parts in the several figures.

In the manufacture of hose it is very important that the rivets should be inserted at uniform distances apart, and that the holes on each side of the belt or strip of leather of which the hose is to be made should exactly correspond. So essential is great exactness in this respect that the operation of punching these holes has been heretofore, so far as I can learn, always done by hand, the position of each punch hole being first carefully marked, before it is cut by the punch. My machine is designed to perform this work not only much faster than it can be done by hand, but with the utmost precision, so that when the two edges of the leather are brought together for the purpose of inserting the rivet, the rivet holes will so exactly correspond that there shall be no pucker in the leather, which would prevent the joint being close and cause the hose to leak.

To enable others skilled in the art to make and use my machine, I will proceed to describe its construction and operation.

A strong framework *a, a*, consisting of two sides pieces, two end pieces and suitable braces, is supported on legs, at a convenient height. On the top of this frame is a sliding table *b*, which is designed to receive the belt of leather of which the hose is to be made which is previously cut to the required width according to the diameter of the hose to be made. The leather is laid over the table, and the pressing board *c*, is laid over it, to keep it even and firmly in its place; the leather projecting equally beyond either side of the pressing board. The pressing board

is secured at either end by clamps *d, d*, attached to each end of the sliding table, and a brace *e*, extends from within a short distance of either extremity of the pressing board, to prevent its springing up in the center, and preserve a uniform pressure on the leather on the table. A strip of rack work, *f*, is attached to the under side of the sliding board extending longitudinally from one end to the other and midway from either side. This gears into a cogwheel *g*, which is turned by hand by means of a winch *h*, by turning which the table may be moved longitudinally backward and forward over the frame between the guides *i, i*, &c., attached to the sides of the frame. At or near the center of the frame *a, a*, are two standards *k, k'*, one on each side of the frame, connected at the top by the cross-piece *l*, which serves as a guide for the punching gate *m*. Two blocks or ways *n, n*, are attached, one to each standard for the slides of the punching gate to work in, and which also serve as guides between which the punching gate works perpendicularly up and down. The working shaft *o*, (to which motion is communicated from an engine or other motive power) carries a cogwheel *p*, which gears into a pinion *q*, on the shaft *r*, and communicates accelerated motion to it. At either end of the shaft *r*, is an eccentric cam *s*, over which works the ring *a'* of the connecting rods *t, t*. These connecting rods are connected at top, one to either side of the punching gate *m*, so that in each revolution of the shaft *r*, the cams *s, s*, lower the punching gate and raise it again with a perpendicular reciprocating motion. The fly wheel *b'*, is attached to one extremity of the shaft *r*, and serves to regulate and steady the motion of the machine. The punching gate *m*, is furnished with two upright steel punches *c', c'*, placed at the requisite distance apart, which in each downward stroke of the punching gate pass, one on either side of the pressing board *c*, and punch a hole in the leather near to its outer edge on each side. The punching gate may, if desired, be furnished with two sets of punches one set rather nearer the center of the gate than the other set, and placed not in the same line but rather before or behind them, so as to cut a double row of rivet holes, the inner row being so spaced that each hole will come between two holes in the outer row. The punchings of the leather pass up through

the punches into the box or trough *u*, in the gate, designed to receive them. So soon as one pair of holes is punched it is necessary to move the sliding table, which carries the leather forward as far as the required space between the rivet holes. This is effected by the following contrivance: A narrow strip of rack work *v*, is attached to the sliding table near to one side, which extends longitudinally in a straight line from one extremity of the table to the other; the space between the teeth of the rack work is equal to the distance from center to center of the rivet holes. A finger *w*, which works in the rack *v*, is connected by a pivot joint to the extremity of the short arm of a bent lever *x*, the fulcrum *y*, at the elbow of the lever is attached to the side of one of the standards *h'*. The extremity of the long arm of the lever is connected by a rod *z*, (with a pivot joint at each end), to the punching gate *m*. Now it is manifest that each time that the punching gate *m*, is raised by the connecting cam rods *t, t*, the long arm of the lever *x*, is raised by the rod *z*, which pressing on its fulcrum *y*, pushes forward the finger *w*, the point of which is resting against one of the teeth of the rack *v*, and moves the sliding table forward, the comparative length of the arms of the lever *x* being so adjusted to the length of the stroke of the punching gate *m*, that the distance which the sliding table *b*, moves forward shall be exactly equal to the length of one tooth of the rack *v*. On the descent of the punching gate *m*, the finger *w*, is drawn back until it falls between the teeth next behind that against which it previously rested, without moving the sliding table *b* from its position, and it is not until the holes have been cut by the punches and the punching gate *m* rises again, that the sliding table *b*

is again moved forward. When the sliding table has passed from one extremity to the other under the punching gate, it will be necessary to release the finger *w* from the rack *v* and run the sliding table back to its original position in order to repeat the operation on another slip of leather. To effect this, an arm *d'*, carried by a rod *f'*, which turns on its axis, is connected by the rod *e'*, with the extremity of finger *w*. The hand lever *g'*, also attached to the rod *f'*, when drawn back turns the rod *f'*, and raises the arm *d'*, and with it the finger *w*, releasing it from the rack work. The spring catch *l'*, holds the hand lever *g'*, in any position it may be placed, in preventing the finger *w* from catching in the rack *v*, until it is thrown back for that purpose. The finger *w*, being raised, the sliding table may be drawn back by turning the winch *h*, which by means of the cog wheel *g*, and rack *f*, accomplishes that purpose. The hand lever *g'*, is then thrown back, the finger *w*, catches in the teeth of the rack *v*, and the operation of the machine is repeated.

Having thus described my machine and explained its construction and operation, what I claim as my invention and desire to secure by Letters Patent, is—

The use of the sliding table and the pressing board in combination with the rack work the lever and the finger, for the purpose of moving forward the leather on the sliding table during each stroke of the punching gate and in combination with the punching gate and punches substantially in the manner and for the purposes hereinbefore described.

JOHN R. HAGUE.

Witnesses:

WILLIAM REED,
WM. N. HOWARD.