

C. H. PERKINS.
Horseshoe Machine.

No. 44,838.

Patented Oct. 25, 1864.

Fig. 1.

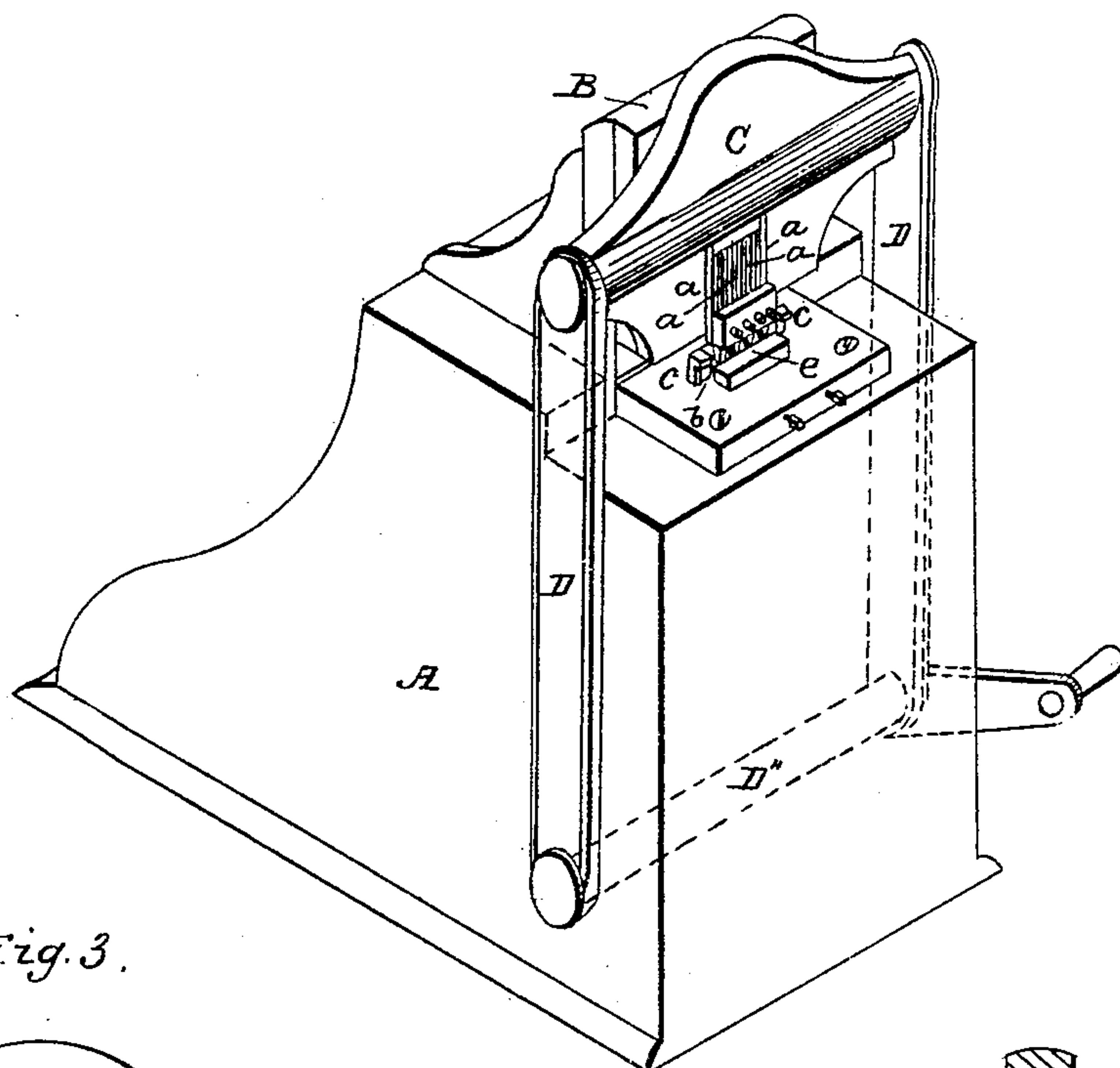


Fig. 3.

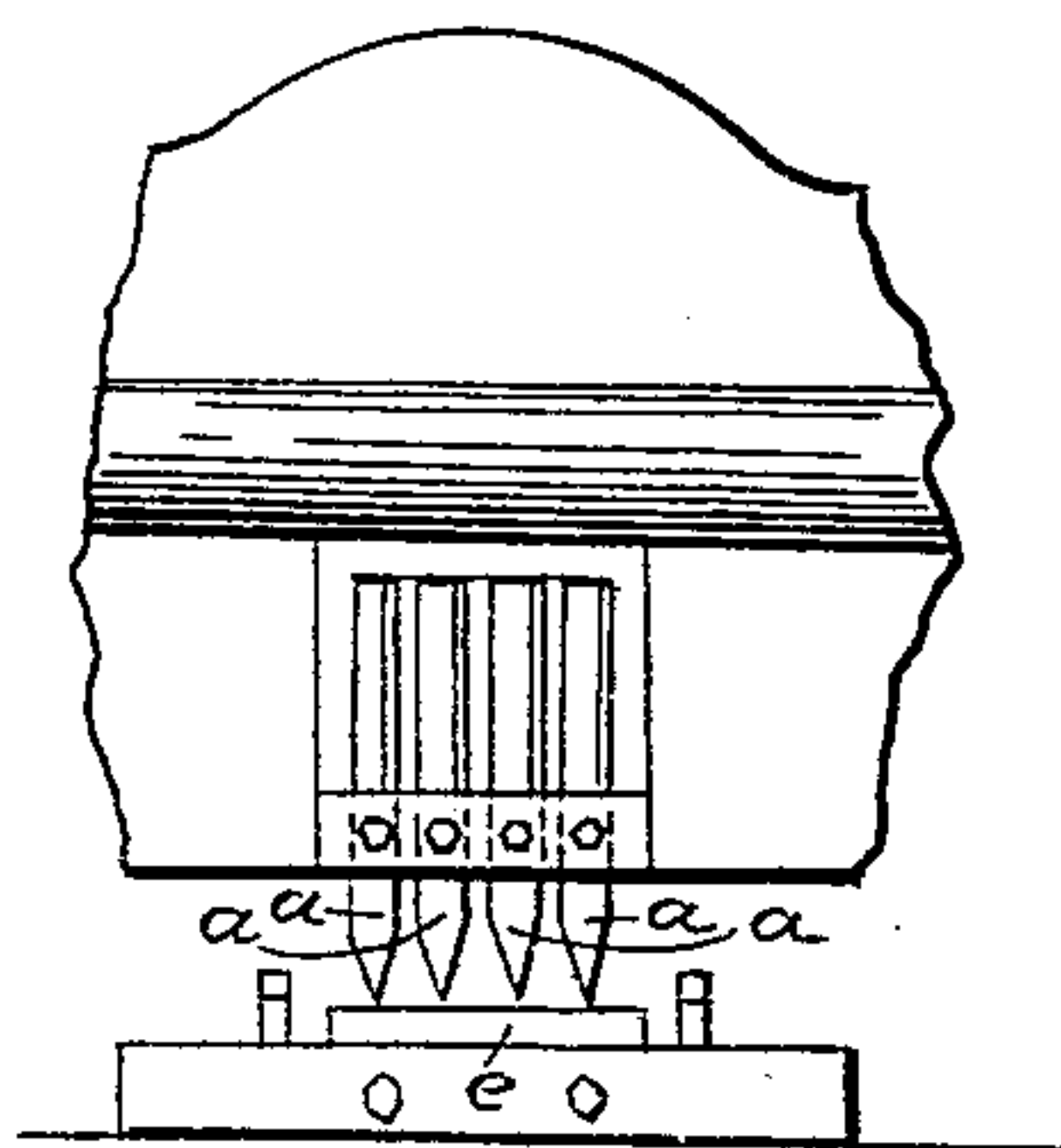
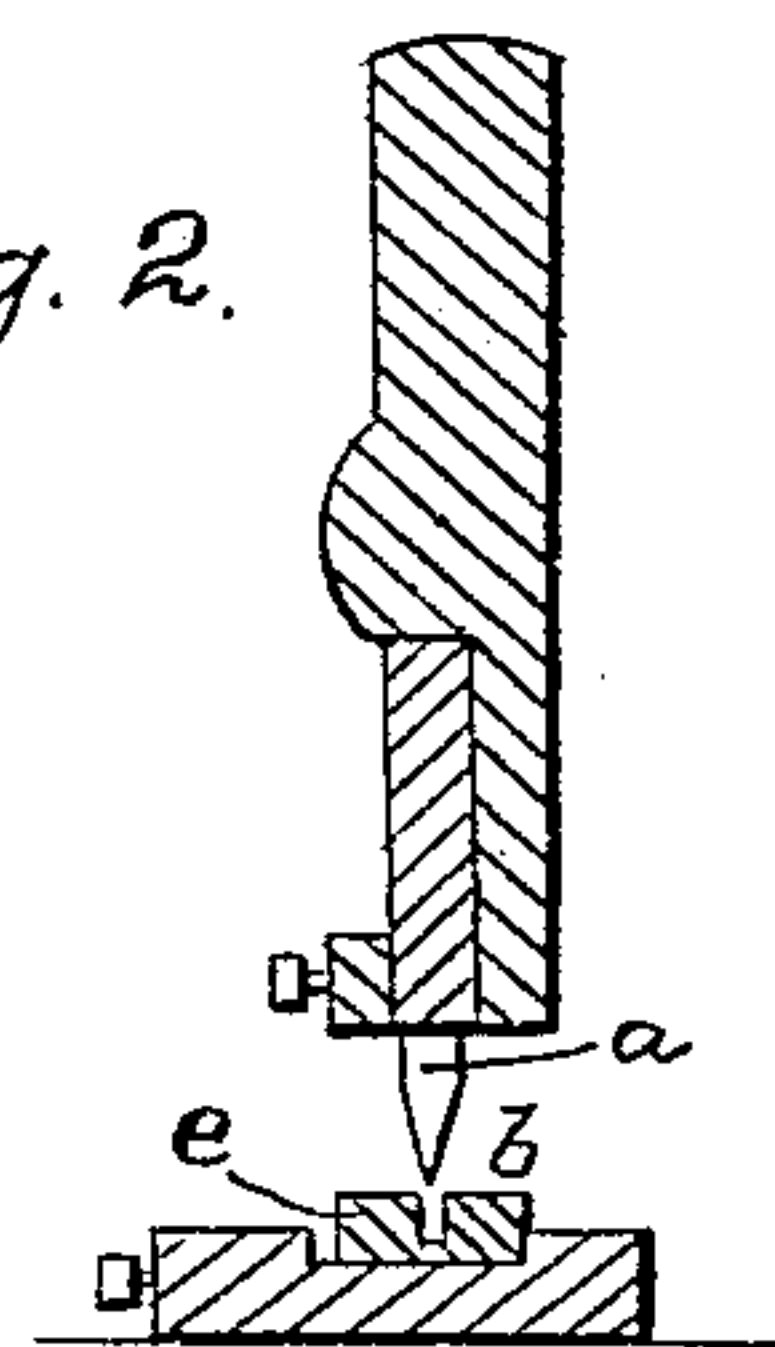


Fig. 2.



Witnesses:

John D. Thurston
Thomas Hedrick.

Inventor:

Charles H. Perkins

UNITED STATES PATENT OFFICE.

CHARLES H. PERKINS, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO
THE UNION HORSESHOE COMPANY, OF SAME PLACE.

MACHINE FOR MAKING HORSESHOES.

Specification forming part of Letters Patent No. 44,838, dated October 25, 1864.

To all whom it may concern:

Be it known that I, CHARLES H. PERKINS, of the city and county of Providence, in the State of Rhode Island, have invented a new and useful Improvement in Machines for Punching Horseshoes; and I do hereby declare that the following specification, taken in connection with the drawings making a part of the same, is a full, clear, and exact description thereof.

Figure 1 is a perspective view of the whole machine. Figs. 2 and 3 are respectively a front view and cross-section of the die and punches.

The machine which is described in this patent is designed to be used in connection with another machine for dressing blanks for horseshoes, for improvements in which other Letters Patent have been granted to me, bearing even date herewith.

The two machines are intended to be used together for the purpose of making a complete set of nail-holes in a shoe-blank; but each may be used for the purpose for which it is adapted independently of the other.

The practical difficulty which has been experienced in the use of all machines for punching the nail-holes in horseshoes is the frequency with which the punches are broken. This tendency to break arises from the fact that the punches in all other machines are required to pass entirely through the metal of the shoe, and, being necessarily slender, if bent or sprung to one side, as they are liable to be, their points will strike as they prick through the blank against the die upon the under side. In order to overcome this difficulty, I employ two separate machines for accomplishing the punching of the holes, one of which makes the holes nearly but not quite through the metal, leaving upon the under side protuberances in the form of blisters, caused by the end of each punch forcing the metal outwardly, and the other cuts off these blisters, leaving the hole exposed.

The machine represented in the accompanying drawings is the first of the two. It consists of a substantial frame or bed piece, A, upon the top of which is placed a guide, B. C is a cross-head, fitted to rise and fall upon this guide. To this cross-head are attached the series of punches *a a a a*, arranged in a row, at the distances apart at which it is designed the holes shall be in the shoe, and secured in appropriate sockets by clamp-screws.

The cross-head is made to rise and fall by means of the shackle-bars D D, worked by eccentrics D' upon the end of the shaft D'', to which the power is applied. Upon the top of the bed-piece is placed a die, E, which has a longitudinal channel, *b*, cut in it, as shown in cross-section in Fig. 2. This channel should be greater in length than the combined width of the series of punches, and should be wide enough to admit the entrance of the punches to the depth required.

The blank of which the shoe is to be made, as is now practiced in machine-made shoes, is creased and punched before it is bent and hammered. The punches are therefore, in this instance, arranged in a straight line, and the blank is placed beneath them and over the channel in the die E and held by the keepers *c c*. As the punches come down, they force the particles of metal opposite their points into the channel *b*, which should be considerably deeper than the punches descend, but do not break through them. This can be readily effected by regulating the extent of motion to be given to the cross-head for any given thickness of blank. When the blank is withdrawn, the under surface will present the appearance of a series of blisters, as before mentioned, although the holes are punched to a depth equal to the thickness of the blank.

The advantage which results from a die of this character, in combination with a series of punches, over one which is divided by partitions, or, what would be the equivalent, a series of holes corresponding to the punches, as heretofore used, is obvious, from the fact that the resistance which the punches will encounter will be greatly increased by the presence of such partitions forming so many unyielding supports for the metal. Another advantage is, that as the punches are not intended to pass through the blank they do not require to be nearly so slender as would otherwise become necessary.

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

The combination of a series of punches with a die, constructed as herein described, operating substantially as and for the purposes specified.

CHARLES H. PERKINS.

Witnesses:

J. D. THURSTON,
THOMAS ALDRICH.