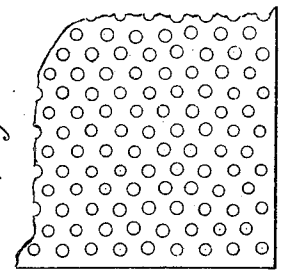
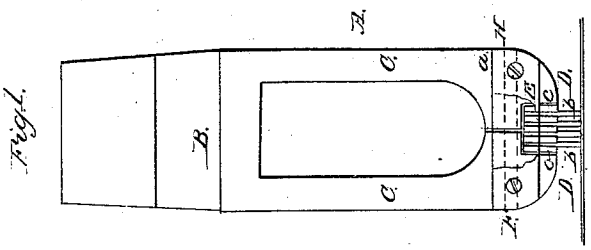
R. Hughes,
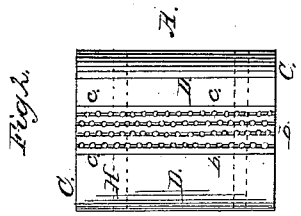
Metal Punch,

No. 61,069. Patented Jan. 8, 1867.

Fig. 2.







Witnesses.

T. A. Jackson

Jas. A. Lewis

Inventor.

R. Hughes

Per Munn & Co

Attorneys.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

United States Patent Office.

RICHARD HUGHES, OF VIRGINIA CITY, NEVADA.

Letters Patent No. 61,069, *dated January* 8, 1867.

IMPROVED PUNCH.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, RICHARD HUGHES, of Virginia City, in the county of Storey, and State of Nevada, have invented new and useful improvements in a Punch; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable others skilled in the art to make and use the same, reference being had to the accompanying drawing, forming a part of this specification.

The present invention relates to a punch for the punching of sheet-metal screens, such as are used in the separation of ores, &c., and it consists in a novel manner of securing the needles or cutting points of the punch in and to their holder, and also in a novel construction of the holder, as will be hereinafter fully described, reference being had to the accompanying plate of drawings, in which—

Figure 1 is a side view of the punch.

Figure 2, a view of one or the needle-end of the same; and

Figure 3, a view of a portion of a plate punched by the improved punch embraced in the present invention.

Similar letters of reference indicate like parts.

A, in the drawings, represents a punch made according to the present invention. This punch consists of a holder, B, made from a block of wood or other suitable material, with two parallel extension spring-arms, C, that, at their outer ends, D, meet or come in contact with each other, and are there both similarly cut across their width, forming a rectangular-shaped socket, E, across which, at each end of the said socket, plates F extend that at one end are secured to one of the spring-arms, C, but at their others are loose, fitting in a groove or recess, *a*, formed in the opposite spring-arm. In the socket E of the holder or stock of the punch, the needles or cutters *b*, employed for punching the holes in the plate, are secured and held, these needles being arranged between plates *c*, made either of steel or other suitable metal or other material, which are grooved at the proper points to receive the needles, so as to firmly hold them in place and prevent their slipping from side to side, when, by means of screws H or any other suitable fastenings, the two spring-arms are made to firmly bind and secure them in and to the holder or stock. The needles *b* severally project from the end of the holder or stock in which they are placed, and at equal distances or lengths, they being arranged in parallel rows with those of each and every row, so placed as to be opposite to the spaces of the next row, in lieu of opposite to each other, thereby producing in the metallic plate of which the screen is to be made, when the punch is brought to bear against it in the proper manner and with a sufficient degree of force, a series of apertures or perforations in parallel rows, but with those of each row opposite to the spaces of the row upon each side of the same, in lieu of the perforations thereof. By securing the several needles between spring-jaws or arms, as above explained, it enables either one or more of them, if they should be broken, or for any other reason, to be removed and new ones inserted, without necessarily disturbing the remaining ones of the punch, a quite important feature. And, furthermore, it may be here remarked, that, by arranging the needles composing the several rows of the punch in the positions with regard to each other, above explained, and thus producing a punctured or perforated plate, having its several apertures in corresponding relative positions, the strength of the plate is but very little reduced by being punched, and a more perfect and effective screen produced.

I claim as new, and desire to secure by Letters Patent—

The holder A, having spring-arms or jaws C C, socket E, to receive needles *b*, and separating-plates, *c*, substantially as and for the purpose described.

The above specification of my invention signed by me this day of , 1866.

RICHARD HUGHES.

Witnesses:

JOSEPH T. ATWELL,

C. J. LANSING.