J. C. BUTTERFIELD & J. HAY.

TRIP HAMMER.

No. 108,326. Patented Oct. 18, 1870.

Fig. 2.

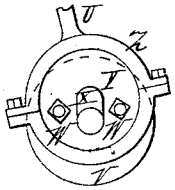


Fig. 3.

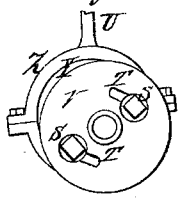
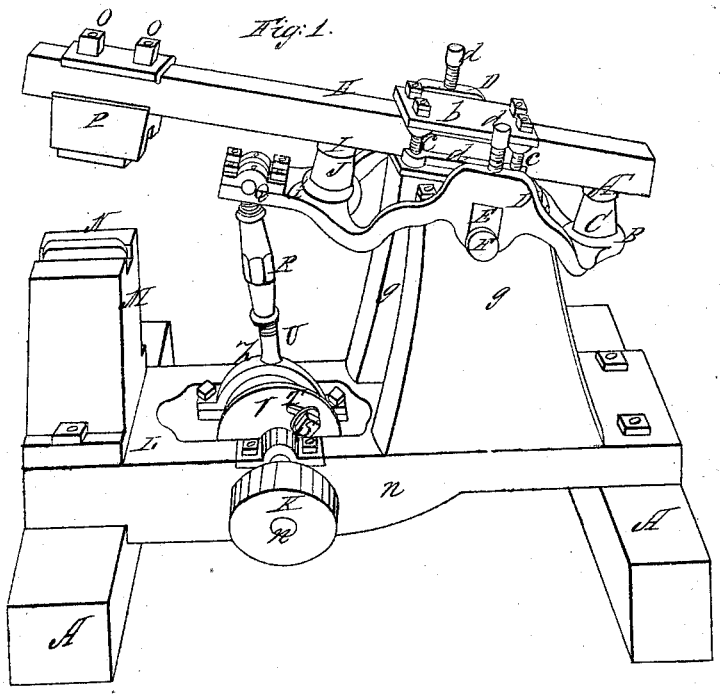


Fig. 1.



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Letters Patent No. 108,326, dated October 18, 1870.

IMPROVEMENT IN TRIP-HAMMERS.

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

To all whom it may concern:

Be it known that we, JOHN C. BUTTERFIELD and JAMES HAY, of Chicago, in the county of Cook and State of Illinois, have invented an improved Trip-Hammer; and we do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawing and letters marked thereon, making a part of this specification, in which—

Figure 1 is a perspective representation of our improved trip-hammer.

Figures 2 and 3 detached views of the adjustable eccentric.

The nature of the present invention consists in the novel construction of an oscillating carriage, in combination with the hammer, beam, and springs, whereby the vibrations of the hammer-beam are prevented from communicating with the frame, so as to produce breaking, trembling, or jarring of the parts; and in the combination of an adjustable sleeve and eccentric, whereby any length of stroke is obtained, as the whole is hereinafter fully described.

L, fig. 1, represents a substantial iron frame, supported by any suitable foundation, A A, and which supports two upright standards, *g*, and an anvil, M N.

An oscillating iron frame, D, is provided with a shaft, F, which rotates in standards *g*; with sockets for the bottom ends of rubber springs J C to rest in; with a clamp, *b d*, for holding the hammer-beam H; and with a pivot, Q, for attaching the upper end of the crank R U, the under side of the aforesaid beam being provided with sockets, I A′, which support the top ends of the springs J C, so that the latter are held firmly between the frame D and hammer-beam H, said springs being adjusted by means of set-screws, *a a*.

A shaft, *n*, fig. 1, is made to rotate in bearings formed in the frame L by means of a pulley, K, and it is provided with an adjustable eccentric, V Y, shown more clearly at figs. 2, 3, by means of which any length of hammer-stroke may be obtained.

The height of the hammer, to suit the thickness of metal placed on anvil N, is gauged by means of a sleeve-nut, R, on the inner periphery of which are cut right and left-hand threads, so that, when the nut R is turned, the distance between the shaft *n* and pivot Q is increased or diminished. Hence, different thicknesses of metal can be readily wrought.

To adjust the eccentric, all that is required is to simply loosen the nuts S S, at fig. 3, and then move the eccentric on shaft *n*, at the same time the plate V is swung around so as to change position of the bolts in the slots T T.

Having thus described our invention,

What we claim, and desire to secure by Letters Patent of the United States, is—

1. The oscillating frame D, provided with sockets G B, in combination with rubber spring J C, clamp *b d*, beam H provided with sockets I A, and hammer P, as and for the purpose set forth.

2. Combination of frame L, standard *g*, eccentrics V Y, sleeve-crank R U, and frame D, as and for the purpose set forth.

3. Combination, with subject-matter of first claim, of the sleeve-crank R U, eccentrics V Y, shaft *n*, frame L, standard *g*, and anvil M N, as and for the purpose set forth.

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