N. C. STILES.

Foot Press.

No. 53,499. Patented March 27, 1866.

Fig. 1

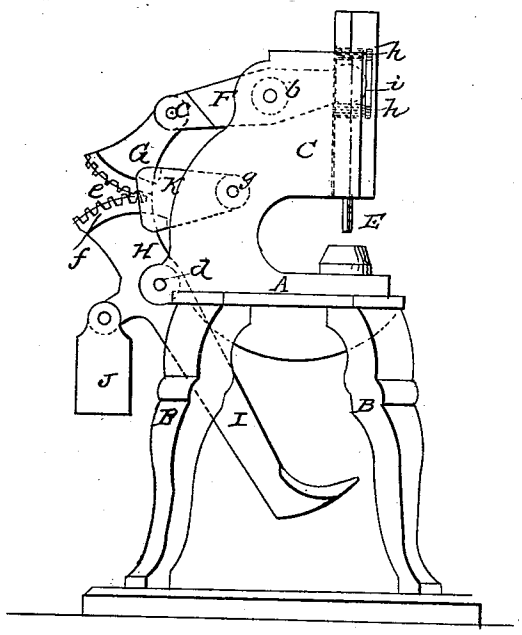
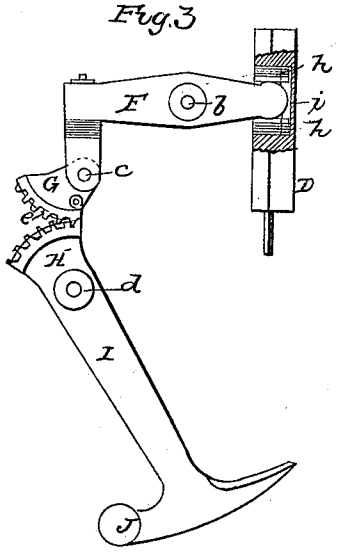
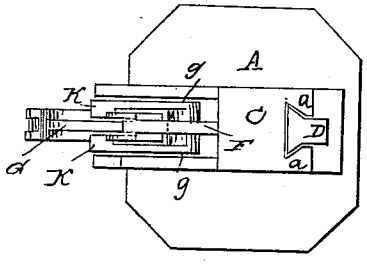


Fig. 3





WITNESSES

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UNITED STATES PATENT OFFICE.

N. C. STILES, OF WEST MERIDEN, CONNECTICUT.

IMPROVED FOOT-PRESS.

Specification forming part of Letters Patent No. **53,499**, dated March 27, 1866.

To all whom it may concern:

Be it known that I, N. C. STILES, of West Meriden, in the county of New Haven and State of Connecticut, have invented a new and Improved Foot-Press; and I 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 drawings, forming part of this specification, in which—

Figure 1 represents a side elevation of this invention. Fig. 2 is a plan or top view of the same. Fig. 3 is a detached elevation of a modification of the same.

Similar letters of reference indicate corresponding parts.

This invention consists in the arrangement of two segmental cams, one rolling on the other, in combination with a suitable foot-piece or treadle and with the working-lever, which imparts motion to the slide or head carrying the punch in such a manner that, by the combined action of the segmental cams and foot-lever, a powerful motion can be imparted to the punch, and by changing the cams any desired motion can be given to the punch, quick at the beginning and slow at the end, according to the nature of the work or material to be punched.

The invention consists, also, in providing the segmental cams with cogs, so as to compel them to travel together and to impart to the punch a positive motion. In combination with the segmental cams a clutch or other equivalent device is applied, constructed according to the shape of the cams, for the purpose of keeping the cogs of said cams in gear.

A represents a table or platform, which is supported by legs B, and from which rises a standard, C, of any suitable form or shape to suit the dies and punches to be used in the press. The front edge of this standard is provided with suitable dovetailed ways *a*, to receive the slide D, in which the punch E is fastened by a set-screw or any other suitable means. A reciprocating motion is imparted to the slide D by the action of a working-lever, F, which has its fulcrum on a pivot, *b*, and to which an oscillating motion is imparted by the action of two segmental cams, G H, one of which is suspended from a pivot, *c*, in the rear end of the working-lever F, whereas the other swings on a pivot, *d*, secured in suitable lugs projecting from the rear edge of the standard C or table A. The working-surfaces of the cams are either both eccentric with the pivots which form their fulcra, as shown in Fig. 1, or one of the cams may be made concentric with its fulcrum, and the other eccentric, as shown in Fig. 3, so that in either case a rocking motion is imparted to the working-lever by imparting to the cams an oscillating motion. The desired motion is imparted to the cams G H by a treadle or foot-lever, I, which is formed by a continuation of the cam H beyond its fulcrum, as shown in Figs. 1 and 3, and a weight, J, is applied to a short arm or ear projecting from the rear edge of the cam H or treadle I, for the purpose of carrying the cams back to the position shown in Figs. 1 and 3 and to lift the punch from the work.

In order to cause the cams to travel together and to prevent their working-surfaces from slipping on each other, they (the cams) are provided with cams *e f*, which gear in each other, as clearly shown in the drawings, and clutches K are applied to keep the cogs in gear. These clutches may be made to catch over the rims of the toothed segments, as shown in Figs. 1 and 2 of the drawings; or, instead of these clutches, weights or springs might be applied to the upper segment, G, to keep the same in gear with the lower segment, H. In Fig. 3 simple pins armed with friction-rollers are used to perform the office of the clutches, and these roller-pins are secured in the standard C and arranged so as to bear on the inner circumference of the rim of the segment G. When clutches are used, such as shown in Figs. 1 and 2, they must be so arranged that they can accommodate themselves to the varying position of the cams, which purpose is effected by supporting them on pivots *g*.

The position of the punch in relation to the die is regulated by a series of slips, *h*, of metal, which are inserted in a recess, *i*, in the inner surface of the slide D, above and below the front end of the working-lever F. By increasing the number of slips above and decreasing their number below the punch is raised, and vice versa; or, instead of placing these slips in the recess *i*, they may be placed under an

arm, which forms the connection between the working-lever and the segment G, as shown in Fig. 3 of the drawings. The throw of the punch can be increased or decreased by changing the shape of the cams G H, and these cams may also be so arranged that they give any desired motion to the punch, quick at the beginning and slow at the end, as previously stated.

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

1. The segmental cams G H, in combination with the working-lever F, punch E, and foot-lever I, constructed and operating substantially as and for the purpose set forth.

2. Providing the segmental cams with cogs on the sides of their working-faces, substantially as and for the purpose described.

3. The arrangement of clutches K, or other equivalent devices, in combination with the cams G H, lever F, and punch E, constructed and operating substantially as and for the purpose set forth.

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Witnesses:
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