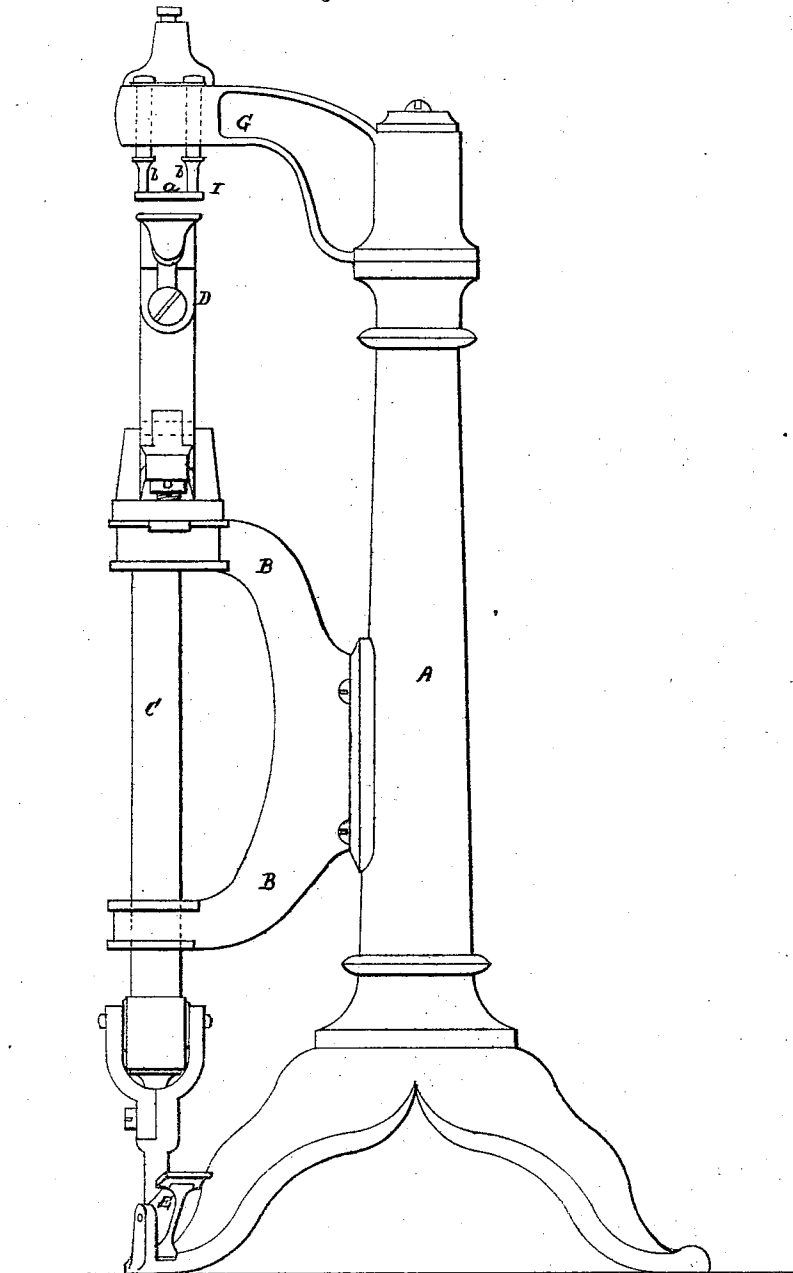


V. K. SPEAR.
Heel-Breasting Machinery.

No. 141,735.

Patented August 12, 1873.

Fig. 1.



Witnesses.
W. C. Fay
H. C. Boardman
V. K. Spear.
J. Curtis, Atty.

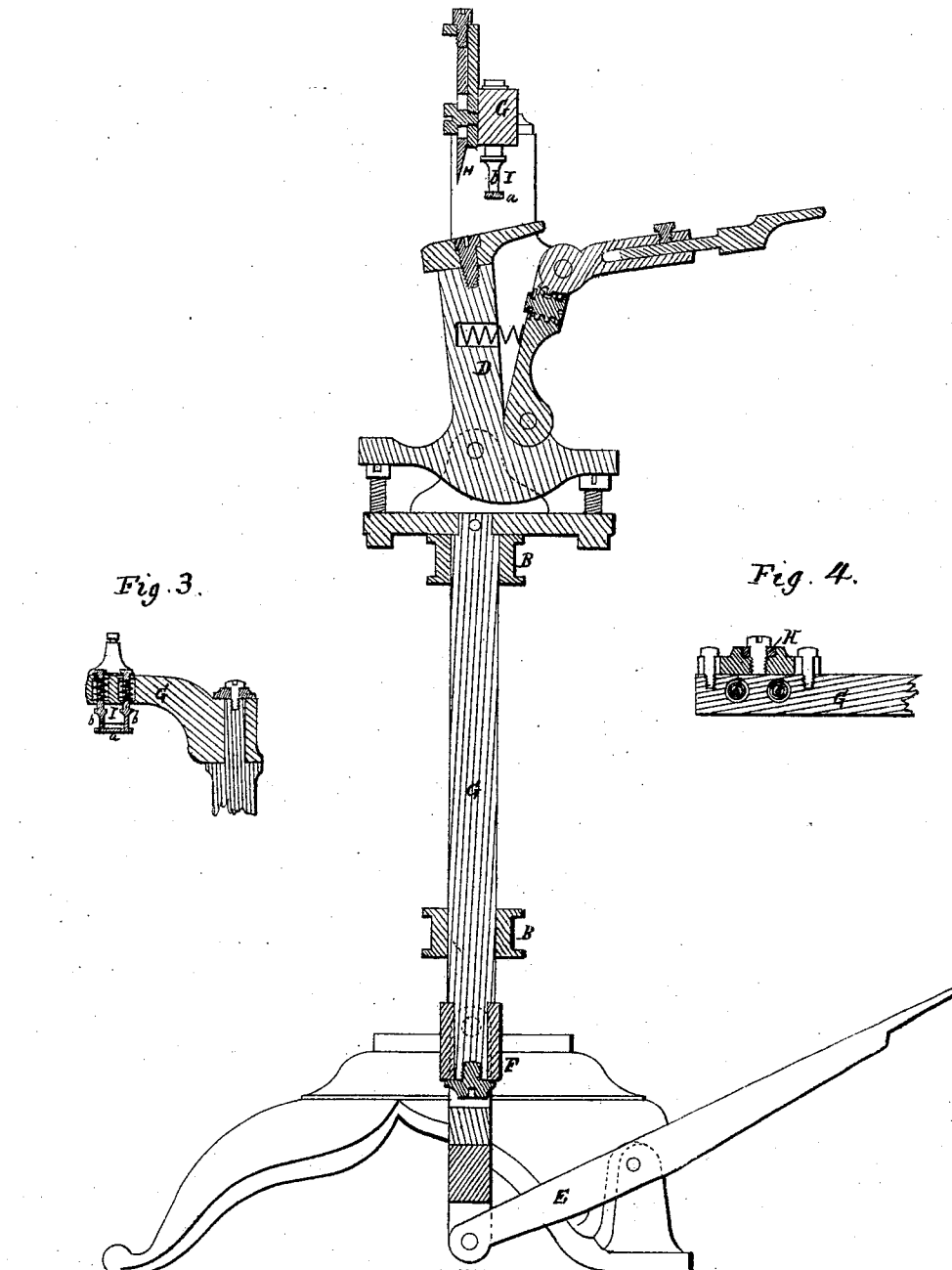
V. K. SPEAR.

Heel-Breasting Machinery.

No. 141,735.

Patented August 12, 1873.

Fig. 2.



Witnesses.
W. B. Boardman
W. L. Lundy

V. K. Spear.
H. Curtis, Atty.

UNITED STATES PATENT OFFICE.

VIVIAN K. SPEAR, OF LYNN, MASSACHUSETTS.

IMPROVEMENT IN HEEL-BREASTING MACHINERY.

Specification forming part of Letters Patent No. **141,735**, dated August 12, 1873; application filed June 24, 1873.

To all whom it may concern:

Be it known that I, VIVIAN KIMBALL SPEAR, of Lynn, Essex county, Massachusetts, have invented certain Improvements in Heel-Breasting Machines, of which the following is a specification:

These improvements consist, first, in mounting the boot-supporting jack upon the pedestal or main support of the machine in such manner that it is susceptible of vertical play and of horizontal swiveling or rotary movement, while the knife stock or carrier is swiveled to the top of such pedestal in a manner to permit of a free rotation or adjustment in a horizontal path of movement, the purpose of such arrangement being to provide a machine more accessible and convenient for use than has heretofore been manufactured, and to enable the length of a heel or the lateral angle of its "breast" to be varied at pleasure; and, secondly, these improvements consist in the arrangement of the breasting-knife and of the depth-gage, which protects the sole from injury by such knife, the same consisting in mounting such gage within the knife-stock in an adjustable manner, by means of springs or their equivalents, and disposing such gage considerably below the knife, in order that the exact position of the latter may at all times be seen, and its cut upon the heel effected at the exact point desired.

Heretofore in machines of this class the knife and gage or guide have been substantially on the same plane, and the knife has been so obscured by the gage and by other parts of the machine that it could not be plainly seen, or its cutting-edge presented to the heel at the exact point desired, without much inconvenience and trouble.

My present machine obviates this objection, and enables the operation of breasting heels to be accomplished readily and rapidly.

The drawings accompanying this specification represent, in—

Figure 1, a front elevation; in Fig. 2, a side elevation; and in Fig. 3, a vertical and transverse section taken through the knife-carrier and depth-gage of the machine.

In this machine I employ an upright pedestal, A, supported upon a firm base, and within bearings B B, affixed to or making part of one

side of this pedestal, I dispose an upright bar or rod, C, upon the top of which I mount an adjustable jack, D, while the lower end of the said bar is pivoted to the rear end of a pedal or lever, E, fulcrumed to the base of the pedestal A, the said pedal effecting the elevation of the jack, while its descent is effected by its own gravity. In order that the jack may possess free motion in a circular horizontal path, I divide the bar C at its lower part, and unite the two portions by a universal joint, F.

As I propose to employ a jack substantially as shown in a machine upon which Letters Patent No. 139,273 were issued to me on the 27th day of May, 1873, I give no explanation of the detailed construction of such jack.

The knife stock or carrier of this machine is shown in the accompanying drawings, at G, as a curved arm or crane, swiveled by an upright joint or stud to the top of the pedestal A, in such manner that the knife, shown at H, and the gage or sole-protector, shown at I, are disposed over the heel portion of the last, and so as to coincide with or intercept the latter when it or the heel carried by it is elevated into contact with such gage and knife. The gage I is composed, as shown in my machine before mentioned, of a horizontal plate, *a*, and two vertical rods, *b b*; but in lieu of holding the gage rigidly to the knife-carrier while the heel is being breasted, as has formerly been done, I apply it in an adjustable manner, by allowing the rods *b b* to slide freely within the arm G, and providing them with springs, whereby they are depressed to their lowest extent. The knife H is shown as mounted within the carrier or arm G and in rear of the gage I, the lower or cutting edge of the said knife being elevated considerably above the gage, in order, as before stated, that it may be plainly seen at all times and its application to the heel instantly adjusted.

As the workman, by the aid of the treadle E, elevates the jack, and with it the boot, the gage or stop I is brought in contact with the shank of the sole, and the knife-edge in contact with the tread of the heel at about the same time, the boot continuing to rise and the gage to retreat until the knife has pared or breasted the heel and reached the said sole-

shank, at which time the gage or stop I brings up to a rigid bearing, and prevents the knife from cutting into or injuring the sole.

As I have in this machine lowered the gage below the knife-edge in order to permit of a comparatively unobstructed view of the latter, I must provide a means of enabling the said gage and knife-edge to simultaneously, or practically so, bring up against the sole; and the mode herein shown of applying the gage to the knife-stock is one method by which this result may be reached.

The horizontal play of the jack or of the knife-carrier enables me to breast the heel at any desired transverse angle, and to cut a heel to any desired length without the use of a stop or gage to determine such length.

I claim—

1. In a heel-breasting machine, the combination with the vertical breasting-knife, placed over the jack in the plane of the heel to be operated on, of a jack arranged to support the shoe with its sole uppermost, and in substantially a horizontal plane, and an upright jack bar or support adapted to rise and fall, to carry

the jack to and from the knife, and to move in a horizontal plane to vary the position of the work with respect to the knife, substantially as shown and set forth.

2. In heel-breasting machinery, the combination of a jack capable of vertical and horizontal play and a knife-carrier capable of horizontal swiveling movements, substantially as and for the purposes stated.

3. The combination, with the knife-stock and its swinging or pivoted carrier or crane, of the vertically-yielding knife gage or guard, carried by said crane, and arranged and operating in connection with the knife, substantially as shown and set forth.

4. In combination, a jack susceptible of vertical and horizontal play, a knife stock or carrier susceptible of horizontal swiveling movements, and a gage or guard applied adjustably to said carrier and with respect to the knife, substantially as and for the purposes stated.

VIVIAN K. SPEAR.

Witnesses:

F. CURTIS,

W. E. BOARDMAN.