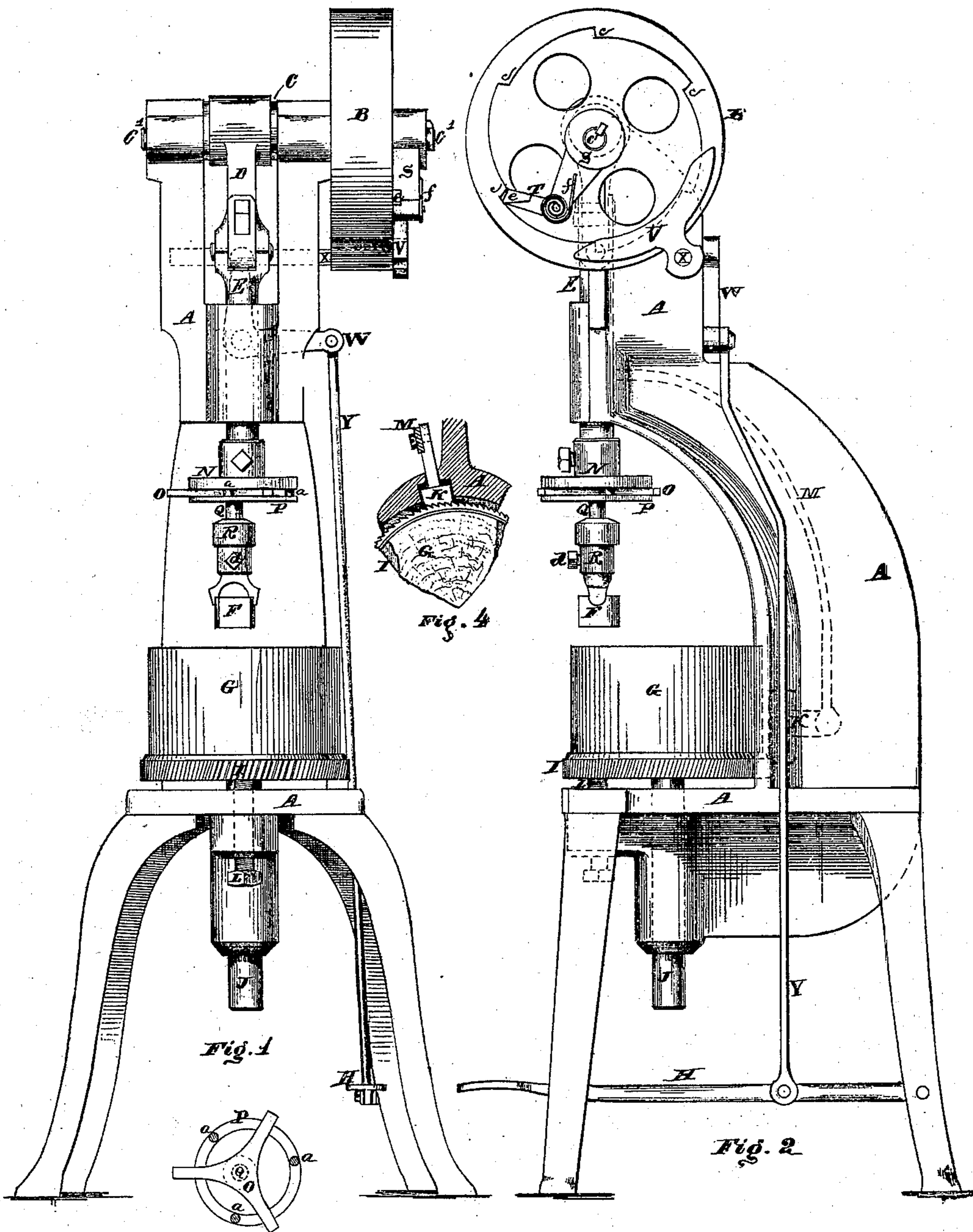


H. H. Bigelow,

Leather Cutter.

No. 113618

Patented Apr. 11. 1871.



Witnesses

Charles Burleigh

Inventor

Horace H. Bigelow

A. E. Pierce

United States Patent Office.

HORACE H. BIGELOW, OF WORCESTER, MASSACHUSETTS.

Letters Patent No. 113,618, dated April 11, 1871.

IMPROVEMENT IN MACHINES FOR CUTTING LEATHER.

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, HORACE H. BIGELOW, of the city and county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Machines for Cutting Leather; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing which forms a part of this specification, in which—

Figure 1 represents a front view of my improved leather-cutting machine;

Figure 2 represents a side view of the same;

Figure 3 represents a plan of the die-supporting spider; and

Figure 4 represents a horizontal section of a portion of the machine, showing the feeding-dog and ratchet.

To enable those skilled in the art to which my invention belongs to make and use the same, I will proceed to describe it more in detail.

The nature of my invention consists—

First, in the combination, with the cutting-die, of a rotary bed or block and mechanism for rotating the same, as and for the purpose hereafter set forth.

Second, in the combination, with the vertical operating bar and cutting-die, of the peculiar connecting devices, as hereinafter described.

Third, in the combination, with the operating shaft and driving-pulley, of peculiar clutch and stop devices, as hereafter described.

In the drawing—

A indicates the supporting-frame.

B, the driving-pulley which operates the eccentric C.

D, the eccentric arm which is pivoted to the upper end of the vertical operating bar E.

F is the cutting-die;

G, the rotating cutting-block or bed; and

H, the starting treadle.

The rotating cutting-block or bed G is supported upon a circular plate, I, fixed to the upper end of a pintle-bar, J, which latter forms a center upon which the block G turns.

The plate I is provided with diagonal ratchet-teeth or notches around its edge to receive the corresponding teeth upon the actuating dog K, by means of which the plate I and block G are rotated.

The plate I rests upon a screw-bolt, L, set in the front part of the frame, and, by raising or depressing the screw-bolt, the block G can be adjusted to the proper height.

The dog K, which rotates the block-supporting plate I, is connected by a curved rod, M, to the vertical bar E, which operates the die F, and, as the bar E descends, the flexibility of the rod M permits the dog K to spring past the teeth of the ratchet without actuating the plate I; but during the upward move-

ment of the bar E the teeth on dog K and plate I engage and the block G is moved forward the extent of one tooth of the ratchet.

The vertical operating bar E is supported on the upper part of the frame A, as indicated, and is operated up and down by the eccentric C and arm D in a manner similar to the ordinary power punch.

To the lower end of the operating bar is attached a circular platen, N, having at its under side a ring, P, of the same diameter as the platen N, and secured thereto in this instance at three points by studs *a*.

Between the ring P and platen N is arranged an armed spider, O, which is secured to and supports the die-spindle Q. The spider O is of the form shown in fig. 3, and works loosely between the ring P and platen N. Its arms are of such length that the die-spindle Q can be moved to any position within the ring without the end of either arm being drawn inside the circle.

A swivel head, R, is arranged upon the lower end of the die-spindle Q, in which the handle of the cutting-die F is secured by a set-screw, *d*. The swivel-head R permits of the die being turned in any direction, as desired.

The driving-pulley B is hung loosely upon the eccentric shaft C', and upon the end of the shaft outside the pulley B is a crank, S, rigidly keyed to the shaft, and furnished at its end with a pawl, T, which engages with ratchet-teeth *c* formed upon the inside of the pulley-rim, as indicated. The pawl is pressed outward by means of a spring, *f*, so that it will catch the teeth *c* when not otherwise prevented.

A curved guard, V, is arranged at the side of the pulley B, and the pawl T is provided with a projecting lug, *e*, which runs up onto the guard V, and thereby throws the pawl out of clutch with the teeth *c* on the pulley-rim.

The guard V is fixed to the end of a transverse bar, *x*, and it can be moved outward, to disengage the lug *e*, by means of a bell-crank lever, W, fulcrumed at its heel to the rear part of the frame A, and having its horizontal arm connected to the treadle H by a rod, Y, all of which is fully illustrated in the drawing. A suitable spring is arranged on the bar *x* to draw the guard V up to the side of the pulley B.

The operation of my improved leather-cutting machine is as follows:

The operator arranges the leather upon the block or cutting-bed G, places the die F in the proper position above the leather, and presses down the starting-treadle H with his foot. The guard V is thereby moved outward to free the pawl T, which is thrown outward by the spring *f* and caught by the teeth *c* on the pulley-rim. The pulley B being in motion revolves the crank S and shaft C', and the eccentric C

pressing down the die F in the manner heretofore explained, forces it through the leather, while the dog K is carried below the ratchet of the plate I. Then, as the operating-bar and parts connected therewith rise, the dog K engages the ratchet and moves forward the plate I and block G, so that the next cut of the die F will fall upon the block G in a different position.

As the crank S completes its revolution the lug e runs up onto the guard V, which throws out the pawl T, and the motion of the eccentric ceases until the treadle H is again depressed.

It will be observed that the rotation of the block or bed G prevents the die from wearing hollows in its upper surface by being used too long in one place, as is often the case with a stationary block or bed when the position of the die upon the block is governed by the operator. The relative positions of the block and die in my improved machine being governed wholly by mechanism, and independent of the operator, the block is subjected to a uniform wear upon its whole surface, and, as a consequence, requires to be seldom trimmed off or leveled.

The cutting-die F may be attached to the swivel-head R by means of sliding arms, adjusted by screw devices, so as to receive and hold different sizes of dies, which can thereby be readily attached and detached

to or from the die-spindle, and I have used for this purpose a right-and-left screw, which I find to work admirably for the purpose.

The spider O may be made with a more or less number of arms than that shown in the drawing when desired.

Having described my improved machine for cutting leather,

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

1. The combination of the cutting-die, rotating bed or block G, ratchet-plate I, dog K, and arm M, substantially as and for the purpose set forth.

2. The combination, with the vertical operating bar E and die-spindle, of the platen N, supporting spider O, and ring P, substantially as and for the purpose set forth.

3. The combination, with the eccentric shaft C and driving-pulley B provided with ratchet-teeth c, of the crank S, pawl T, guard V, rods x and Y, bell-crank lever W, and treadle H, substantially as and for the purposes set forth.

HORACE H. BIGELOW.

Witnesses:

CHAS. H. BURLEIGH,
A. E. PEIRCE.