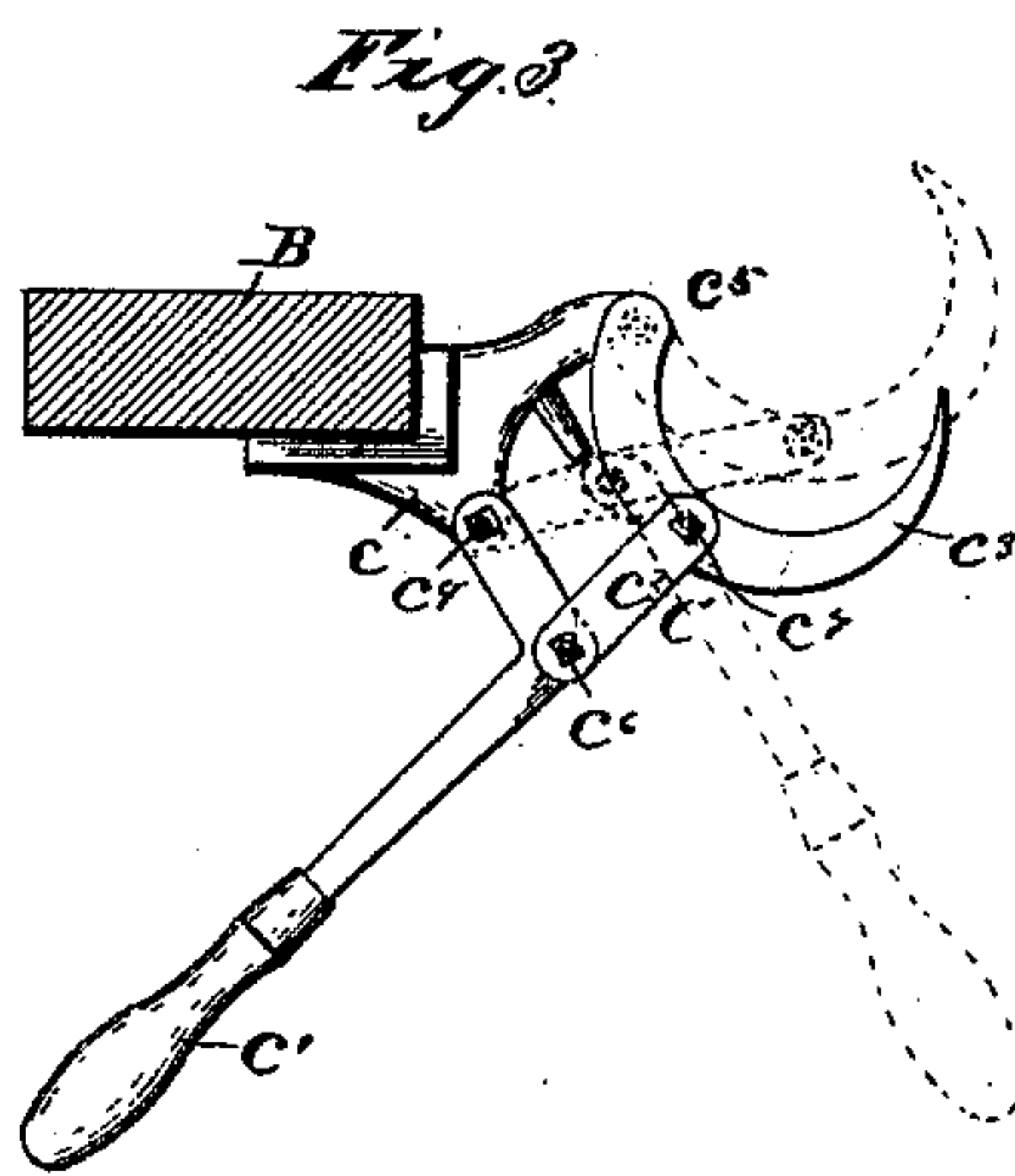
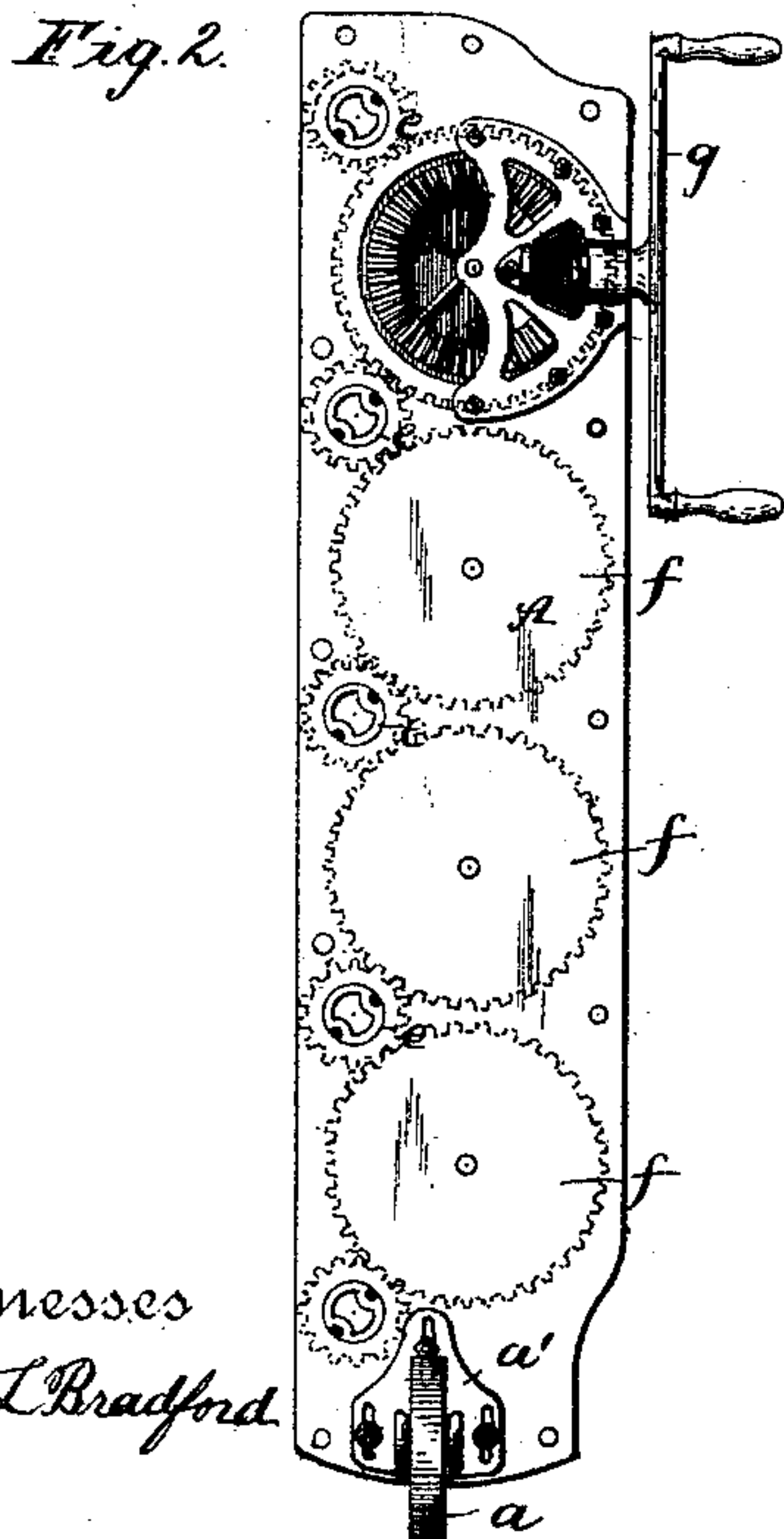
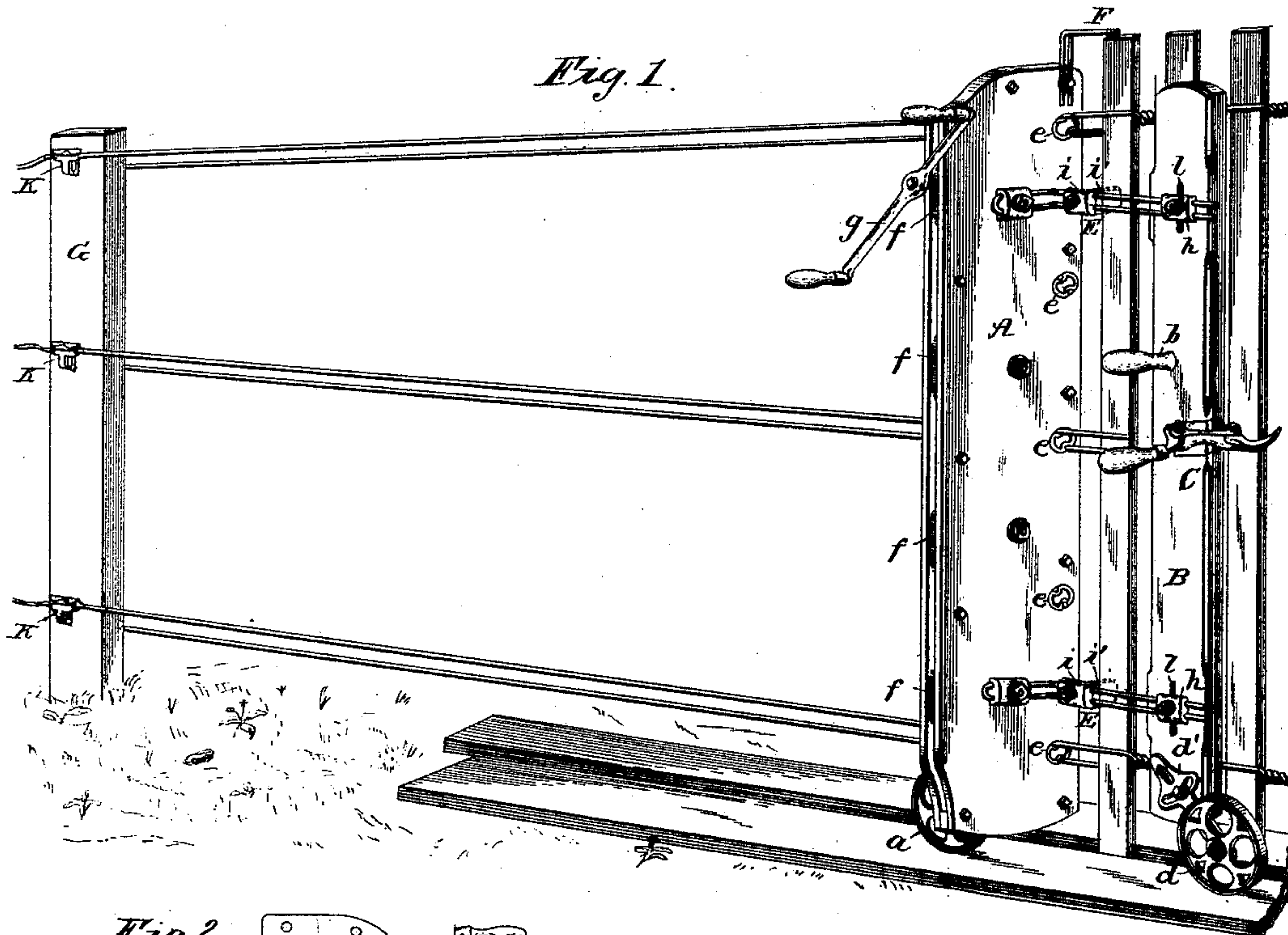


(No Model.)

H. STAPLES.
SLAT AND WIRE FENCE MACHINE.

No. 415,177.

Patented Nov. 12, 1889.



Witnesses
Edwin L. Bradford

E. A. Marsh

Inventor
Hiram Staples.
By his Attorneys
V. D. Stockbridge & Son.

UNITED STATES PATENT OFFICE.

HIRAM STAPLES, OF BATTLE CREEK, MICHIGAN, ASSIGNOR OF TWO-THIRDS
TO MADISON BARR, OF SAME PLACE.

SLAT-AND-WIRE-FENCE MACHINE.

SPECIFICATION forming part of Letters Patent No. 415,177, dated November 12, 1889.

Application filed January 18, 1889. Serial No. 296,693. (No model.)

To all whom it may concern:

Be it known that I, HIRAM STAPLES, a citizen of the United States, residing at Battle Creek, in the county of Calhoun and State of Michigan, have invented certain new and useful Improvements in Slat-and-Wire-Fence Machines; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates to improvements in slat-and-wire-fence machines of the kind described in Patent No. 395,853, granted to Henry Snyder and Matt Barr jointly with myself, on January 8, 1889.

The object of the invention is to further simplify the construction of machines of this class, so that the same may be more cheaply made and more conveniently operated.

The invention consists in an improved means for raising and lowering the twister-frame and the upright bar, improved means for adjusting the twister-frame and upright relatively to each other, and an improved clutch or gripping device and handle, all as fully described hereinafter.

In the drawings, Figure 1 is a perspective view of a machine embodying my improvements, with a picket inserted ready to be twisted into the fence. Fig. 2 is an elevation of the twister-frame, showing the means for adjusting the same vertically; and Fig. 3 is a detail of my improved clutch or gripping device.

A is the twister-frame, mounted upon rollers *a*, and it is of the same general construction as that described in the former patent referred to, *e e e* being a series of gear-wheels having two perforations to receive the strands of wire to be twisted, *f f f* a second series of gears intermeshing with the former, and *g* the double-handled lever for imparting motion through a pair of bevel-gears to the wheels *e e e*. The adjustable roller or caster, however, is of a somewhat different construction from that described in the former patent, it consisting of the plate *a'*, which fits against and is bolted to the lower end of the twister-frame, and to which is connected the roller

proper *a*. The plate is slotted as shown, thereby permitting of vertical adjustment.

B is an upright bar carrying handle *b*, clutch or gripping device C, and mounted upon roller or caster *d*. The handle is simply a bar projecting from the upright for permitting a convenient hold to be obtained upon said upright. The clutch or gripping device is of peculiar construction, and is shown in detail in Fig. 3. It is preferably bolted or otherwise attached to the edge of the upright B, and consists of the supports *c*, handle or operating-lever *c'*, connecting-rod *c²*, and the claw or grip proper *c³*, and it is pivoted at *c⁴*, *c⁵*, *c⁶*, and *c⁷*. Its operation will be described later. The roller attachment consists of a frame *d'*, bolted to the lower end of upright B and carrying the roller proper *d*. It is slotted as shown, by means of which and the bolt the upright is capable of being adjusted up and down at will, the object of the adjustment being to compensate for the unevenness of the ground over which the machine may be operated.

L-irons E E are bolted to the twister-frame, as shown, and pass through recesses in the vertically-adjustable clamps *h h*, where they are secured, thereby firmly uniting the twister-frame and upright. These L-irons may be themselves slotted; but I prefer to have them made of a bent iron rod, as herein illustrated.

Upon the L-irons are gages *i i*, capable of fine adjustment by means of the nut shown, for regulating the exact distance between the pickets. They also have the projections *i'*, which bear against the pickets.

F is a gage for regulating the height of the pickets.

G is a post temporarily braced in any suitable manner, to which are fastened the tension devices K K, of any suitable construction, one being necessary for every wire employed in making the fence.

In working over hilly or uneven ground it is necessary to adjust the machine to compensate for the unevenness. For this purpose I have devised the roller attachments *a* and *d*, for permitting vertical adjustment of the twister-frame and upright, and the means

for permitting horizontal as well as vertical adjustment of the same by means of the clamps *h h* and the slots *l l* in the upright. The vertical adjustment by means of the clamps *h h* and the slots *l l* is only made use of when there has been a vertical adjustment by means of the roller attachments. The object of all the vertical adjustments is to keep the machine perpendicular. If, for instance, in the course of constructing a fence, a hill is met with, the twister-frame would necessarily be higher than the upright B, and without some means of adjustment the machine would be at an angle. In the present case this is obviated either by raising the upright B by means of the adjustable roller *d* or by lowering the twister-frame A by the adjustable roller *a*, or by bringing into operation both these instrumentalities. Now, it is obvious that this cannot be done without changing the position of the points of attachment of the L-irons E to the upright. This is done by means of the clamps *h-h* moving in the slots *l l*.

The machine embodying my herein-described improvements is operated as follows: Starting with the line-wires made fast to a starting-post, passed through the twister-wheels, and made taut in the tension-clamps on the post G, with the twister-frame and upright fastened together by means of the L-irons and clamps at such a distance apart that the general space between the pickets is fixed, and with the gage *i* suitably adjusted for regulating the exact distance between the pickets, a picket is inserted between the wires, its height being regulated by gage F, and the projections *i' i'* bearing against the edge of the same. The clutch C is now brought into operation. By a movement to the right of the operating-lever *c'* the claw *c³* passes around the starting-post or a previously-woven picket and the machine is forced to the right, the projections *i'* forcing the picket the desired distance to the right. When the lever has passed far enough over, so that the point *c⁶* passes within the line between the points *c⁴* and *c⁷*, the clutch becomes automatically locked, and remains so until the lever is withdrawn. The twister is now operated and the picket becomes woven into the fence. The clutch is then loosened, the machine moved to the left by the handle *b*, another picket inserted, and the operation continued as before. Between each two pickets in the fence the lever *g* is moved in the opposite direction, by reason of which

coiling and twisting of the strands in front of the machine is avoided.

Having now described my invention, what I claim is—

1. In a slat-and-wire-fence machine, the combination of a twister-frame and an upright firmly but adjustably connected together, and each provided with adjustable rollers for effecting independent vertical adjustment of the twister-frame and upright, substantially as described.

2. In a slat-and-wire-fence machine, the combination of a twister-frame and an upright adjustable relatively to each other by means of the L-irons and clamps described.

3. In a slat-and-wire-fence machine, the combination of a twister-frame and an upright provided with adjustable rollers, the upright being vertically slotted for permitting the bolts of the clamps to work therein, L-irons connecting the twister-frame and upright, and clamps for gripping the L-irons, all combined for permitting horizontal as well as vertical adjustment of the twister-frame and upright relatively to one another, substantially as described.

4. In a slat-and-wire-fence machine, the combination of a twister-frame, an upright and slotted L-irons firmly but adjustably connecting the twister-frame and upright, the L-irons being provided with adjustable gages for regulating the distance between pickets, substantially as described.

5. The combination of a twister-frame and an upright rigidly connected together and a self-locking clutch, substantially as described.

6. The combination of a twister-frame and an upright rigidly connected together, a handle for operating the same, and a self-locking clutch, substantially as described.

7. A self-locking clutch or gripping device of the form described, consisting of the brace *c*, handle *c'*, connecting-rods *c²*, and claw *c³*.

8. In a slat-and-wire-fence machine, the combination of a twister-frame and an upright connected together, the upright being provided with a self-locking clutch or gripping device consisting of the brace *c*, handle *c'*, connecting-rods *c²*, and claw *c³*, substantially as described.

In testimony whereof I affix my signature in the presence of two witnesses.

HIRAM STAPLES.

Witnesses:

NELSON E. HUBBARD,
HENRY H. HUBBARD.