

(No Model.)

C. STRAUMANN.

# OPERATING MECHANISM FOR THE CLOTH BEAMS OF LOOMS.

No. 400,879.

Patented Apr. 2, 1889.

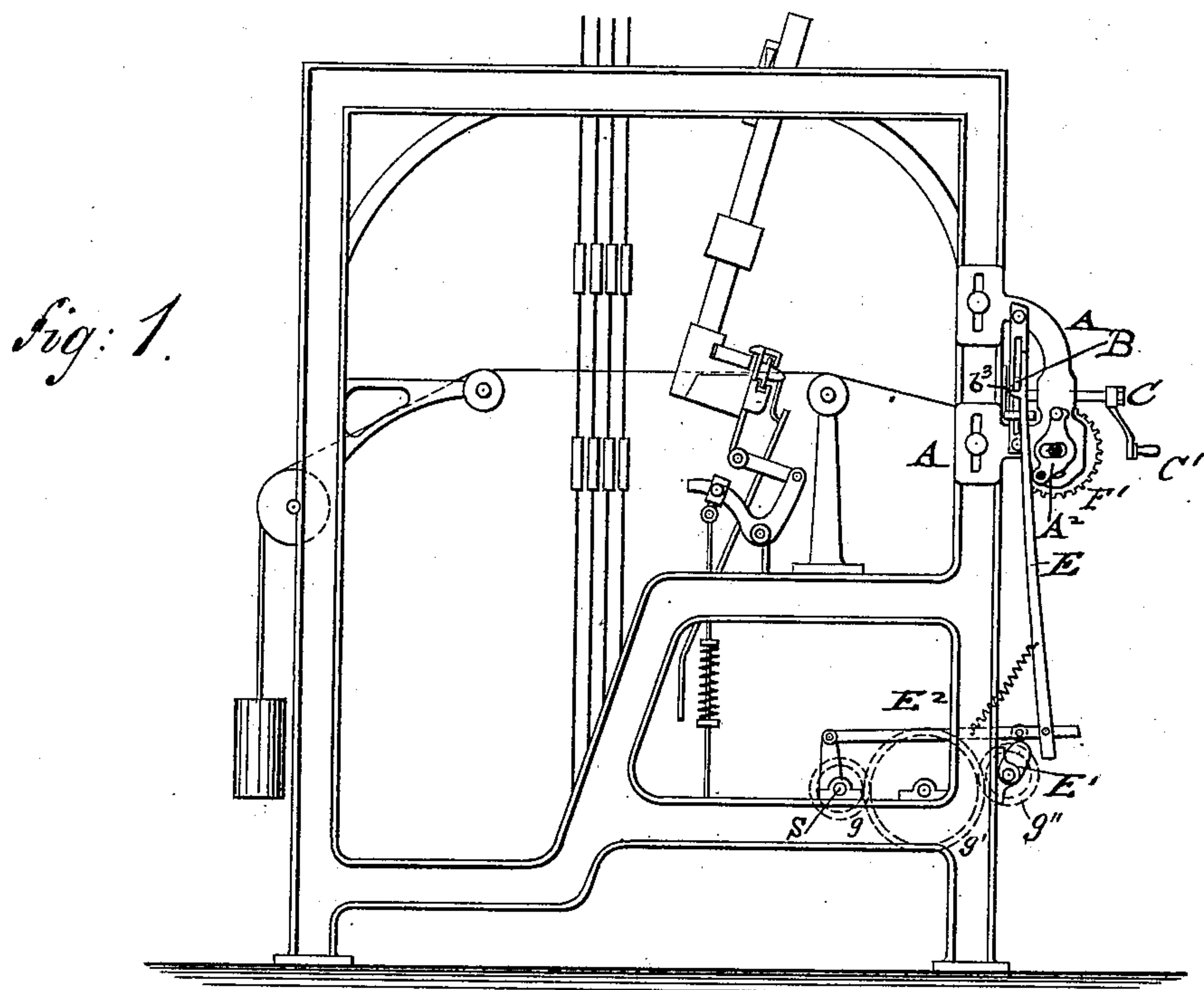
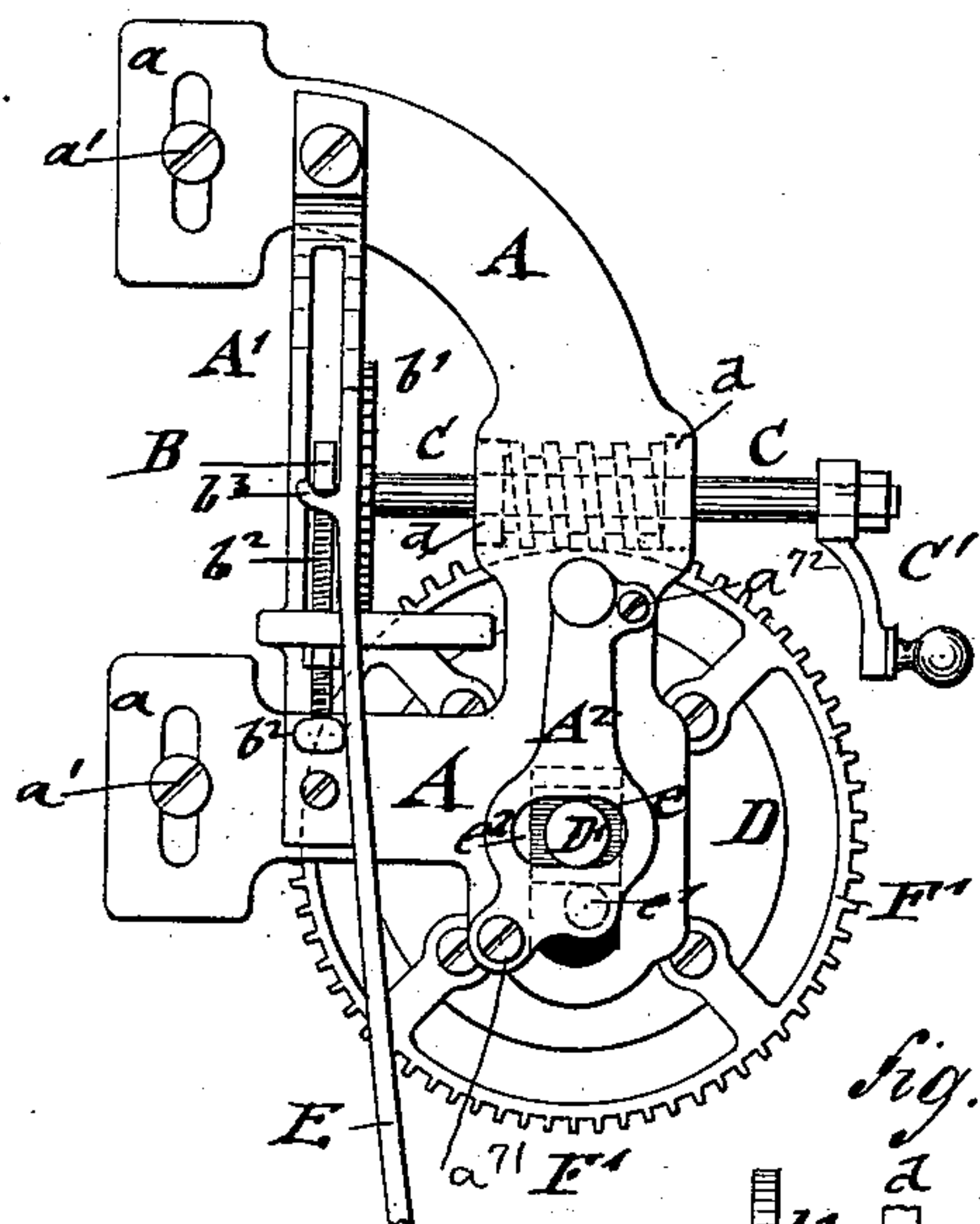


Fig. 2.



*Fig: 3.*

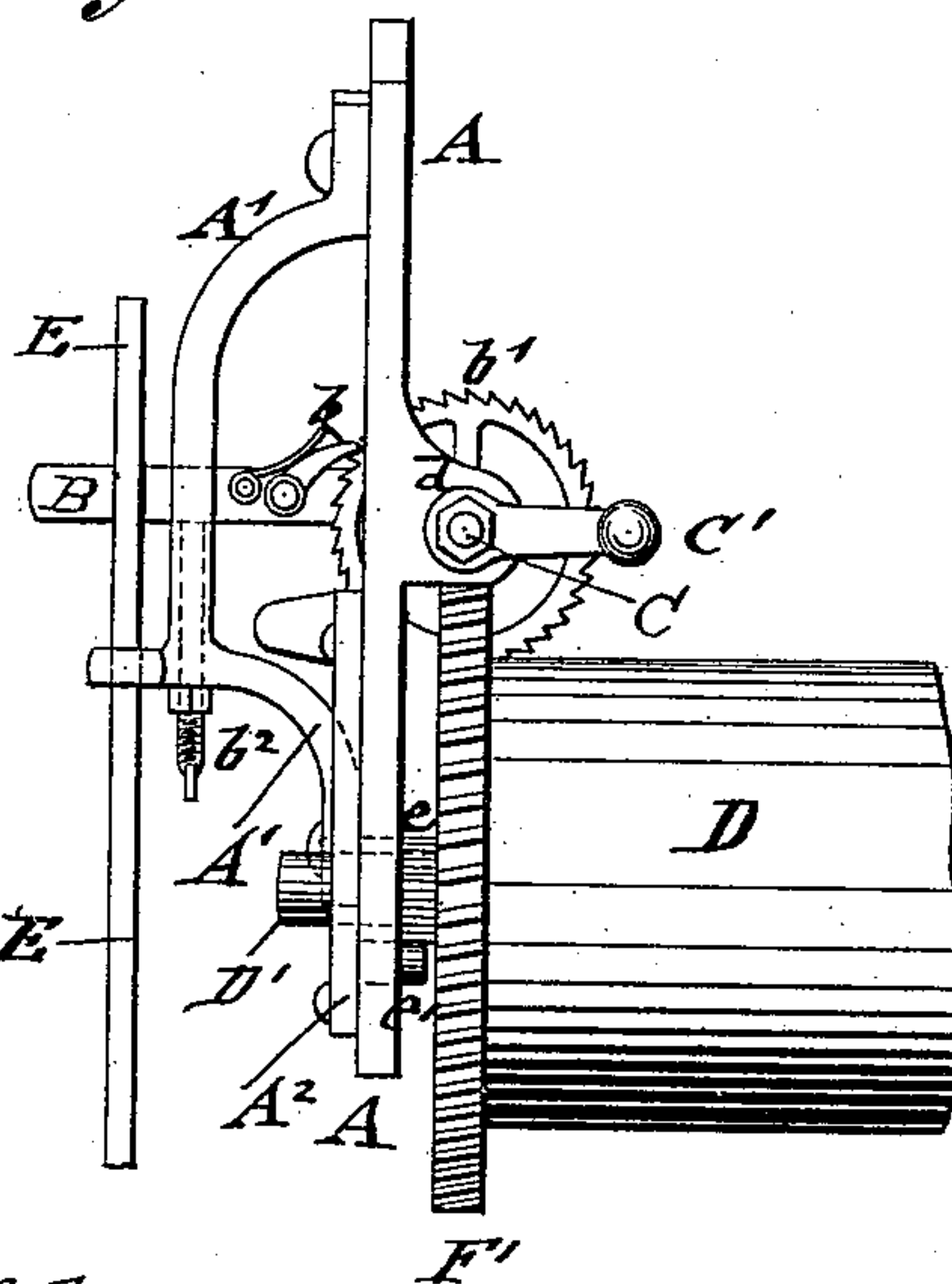
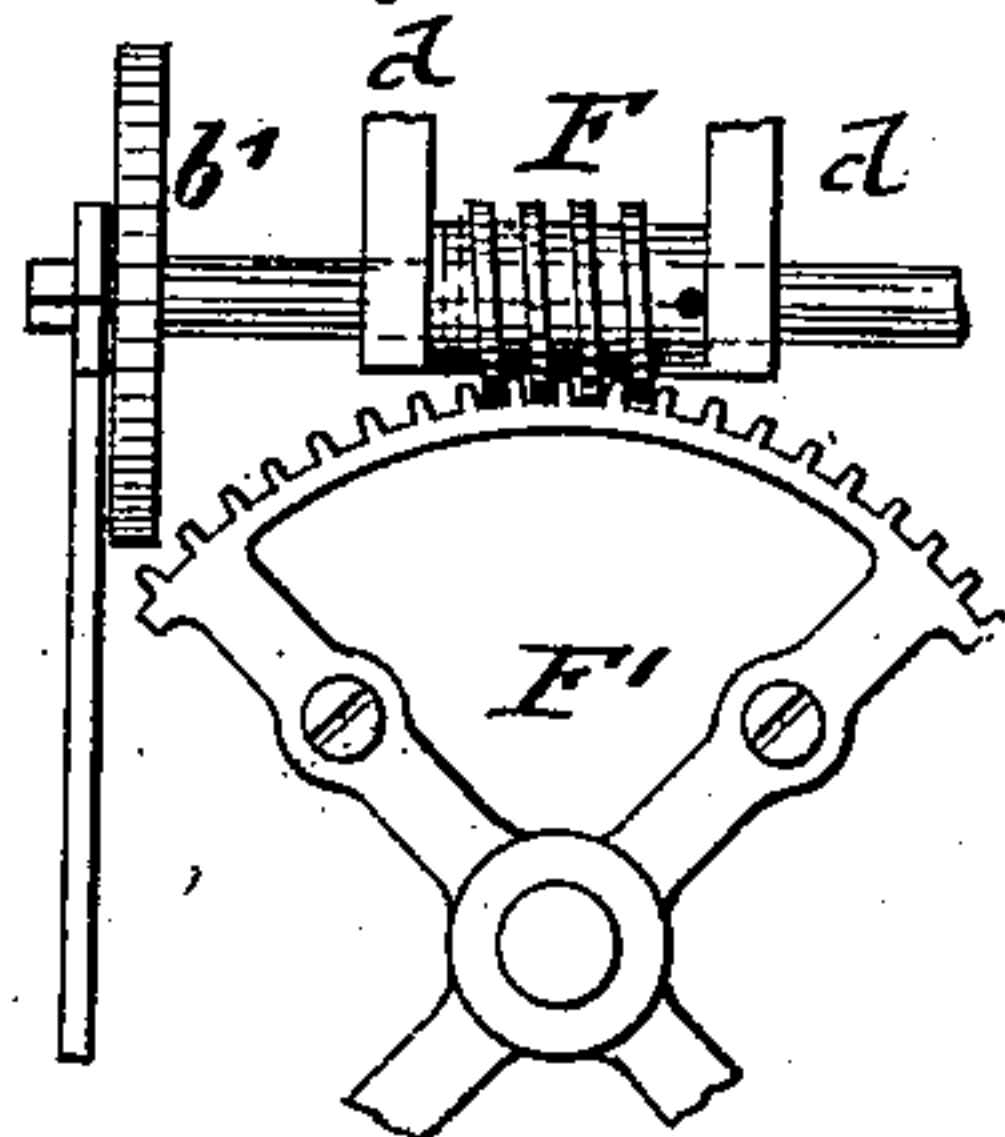


Fig. 4.



WITNESSES:

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# UNITED STATES PATENT OFFICE.

CHARLES STRAUMANN, OF JERSEY CITY, NEW JERSEY.

## OPERATING MECHANISM FOR THE CLOTH-BEAMS OF LOOMS.

SPECIFICATION forming part of Letters Patent No. 400,879, dated April 2, 1889.

Application filed June 19, 1884. Renewed January 8, 1889. Serial No. 295,805. (No model.)

*To all whom it may concern:*

Be it known that I, CHARLES STRAUMANN, of Jersey City, Hudson county, State of New Jersey, have invented certain new and useful Improvements in Operating Mechanism for the Cloth-Beams of Looms, of which the following is a specification.

The object of this invention is to furnish an improved operating mechanism for the cloth-beams of power-loom, which performs its work with absolute regularity, and whereby the skipping of the pawls and its consequences shall be entirely prevented; and the invention consists of operating mechanism for the cloth-beam, in which the pawl and ratchet-wheel are operated by a cam-oscillated lever and rod, and in which the ratchet-wheel transmits its motion through a worm on its shaft to a worm-wheel attached to the cloth-beam, the shaft of which is supported in bearings of brackets attached to the frame of the loom.

In the accompanying drawings, Figure 1 represents a side elevation of a power-loom with my improved operating mechanism for the cloth-beam. Fig. 2 is a side elevation, and Fig. 3 a front elevation, of the operating mechanism on a larger scale; and Fig. 4 is a detail view.

Similar letters of reference indicate corresponding parts.

A in the drawings represents a supporting-bracket, the slotted ends  $a$  of which are attached by clamp-screws  $a'$  to the front upright of the loom-frame. A slotted guide-piece,  $A'$ , is attached to the supporting-bracket A and projects laterally therefrom. The guide-piece  $A'$  serves to guide an oscillating lever, B, to which a spring-actuated pawl,  $b$ , is pivoted. The inner end of the oscillating lever B swings loosely on the horizontal shaft C, turning in bearings in laterally-projecting ears  $d$  of the bracket A. A hand-crank,  $C'$ , at the outer end of the shaft C serves to turn the same so as to wind the cloth on the beam D or unwind it therefrom. The shaft of the beam D is supported at one end in bearings at the lower part of the bracket A, and at the other end in bracket-bearings of the loom-frame.

To the shaft C is keyed, adjoining the lever B, a ratchet-wheel,  $b'$ , which is engaged by

the pawl  $b$ . The oscillating lever B can be adjusted higher or lower by means of a set-screw,  $b^2$ , which set-screw serves to regulate the stroke of the lever B. A rod, E, engages the oscillating lever B by a projecting shoulder,  $b^3$ , and is moved to lift the same by the action of a rotating cam,  $E'$ , which is operated by transmitting gear-wheels  $g g'$  from the driving-shaft S of the loom, as shown in Fig. 1, said cam operating an oscillating lever,  $E^2$ , to which is pivoted the rod E.

A worm, F, is keyed to the shaft C, between the ears  $d d$ . It meshes with a worm-wheel,  $F'$ , secured to the end of the cloth-beam. At each upward motion of the rod E the oscillating lever B is moved and the ratchet-wheel  $b'$  turned for the distance of one or more teeth by the pawl  $b$ , according to the oscillation of the lever B. This imparts an intermittent axial motion to the shaft C and causes the turning of the worm F and worm-wheel  $F'$ , and thereby the turning of the cloth-beam D. The strain of the warp-threads on the cloth-beam D is transmitted by the worm-wheel  $F'$  to the worm F, which latter acts always as a stop for the cloth-beam, so that any accidental skipping of the teeth of the ratchet-wheel  $b'$  by the pawl  $b$  would not exert any injurious influence upon the transmitting worm-gear. The exact degree of axial motion to be imparted to the cloth-beam is regulated by the adjusting-screw  $b^2$ , which defines the extent of motion of the oscillating lever B, while the stroke of the rod E defines the upward motion of the lever B.

The shaft  $D'$  of the cloth-beam D at one end is supported in the bearing-block  $e$ , which is guided in an opening of the bracket-plate A and supported by a pin or lug,  $e'$ , of an auxiliary face-plate,  $A^2$ , that is attached to the bracket-plate A, as shown in Figs. 2 and 3. The shaft  $D'$  extends through a transverse slot,  $e^2$ , of the auxiliary plate  $A^2$ , which slot, together with the pin  $e'$  of the plate  $A^2$  and the journal-bearing  $e$ , holds the shaft  $D'$  reliably in position. The face-plate  $A^2$  is pivoted at its lower end, at  $a^{71}$ , to the bracket-plate A, and can be swung on said pivot to either side after the fastening-screw  $a^{72}$  at the upper end is loosened, so that the bearing  $e$  and the shaft  $D'$  of the cloth-beam are adjusted higher



or lower by pin  $e'$  and the slot  $e^2$ , and thereby the proper meshing of the worm-wheel  $F'$  with the worm  $F$  produced.

The advantages of my improved operating mechanism are that it is simpler than the attachments heretofore in use; that it is reliable in operation, as by the worm-gear no pressure is exerted on the ratchet-wheel; that a steady and uniform turning motion is exerted on the cloth-beam, and that the pawl can be thrown out of engagement at any moment—even while the loom is running—without the least danger of injury to the fabric on the loom or the attendant weaver.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. The combination of the driving-shaft  $S$ , a cam,  $E'$ , intermediate gear-wheels, an oscillating lever-rod,  $E^2$ , a vertically-reciprocating rod,  $E$ , operated by said cam and having a heel or shoulder,  $b^3$ , an oscillating lever,  $B$ , a supporting-bracket,  $A$ , having a slotted guide-

piece,  $A'$ , and set-screw  $b^2$ , for the lever  $B$ , a pawl,  $b$ , on the oscillating lever  $B$ , a shaft,  $C$ , having a ratchet-wheel,  $b'$ , and worm  $F$ , and a cloth-beam,  $D$ , having a worm-wheel,  $F'$ , substantially as set forth. 25

2. The combination of a supporting bracket-plate,  $A$ , having a guide-opening, an auxiliary face-plate,  $A^2$ , pivoted to the bracket-plate  $A$ , said face-plate having a transverse slot,  $e^2$ , and a projecting lug,  $e'$ , a cloth-beam,  $D$ , having a shaft,  $D'$ , a journal-bearing,  $e$ , for said shaft guided in said opening and supported by the lug  $e'$ , and a fastening-screw,  $a^{72}$ , for removably retaining said auxiliary plate in position, substantially as set forth. 30

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

CHARLES STRAUMANN.

Witnesses:

PAUL GOEPEL,  
SIDNEY MANN.