(No Model.) 2 Sheets—Sheet 1.

J. H. LEE.

CARDING ENGINE.

No. 305,316. Patented Sept. 16, 1884.

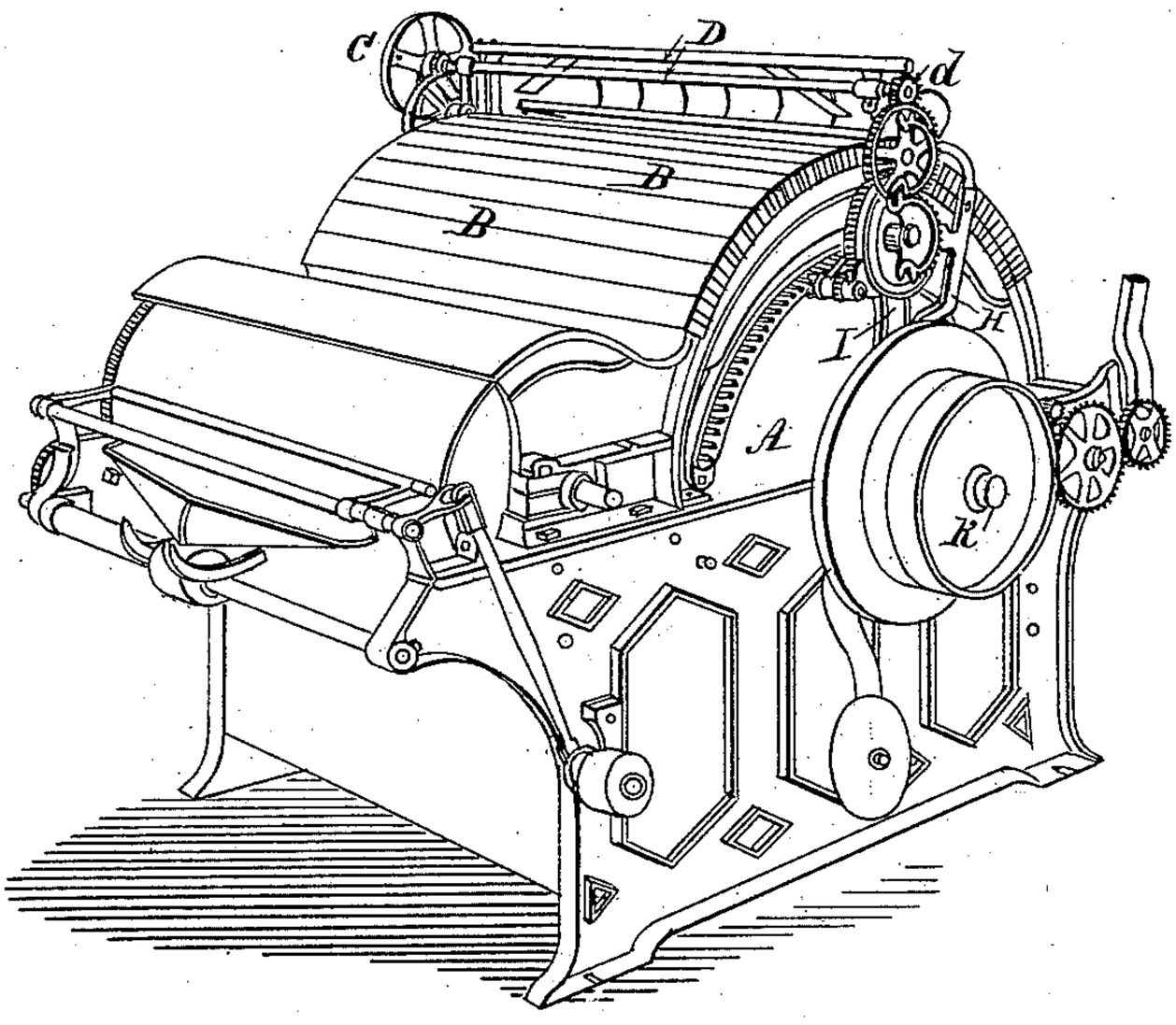

Fig. 1.

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(No Model.)

2 Sheets—Sheet 2.

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Fig. 2.

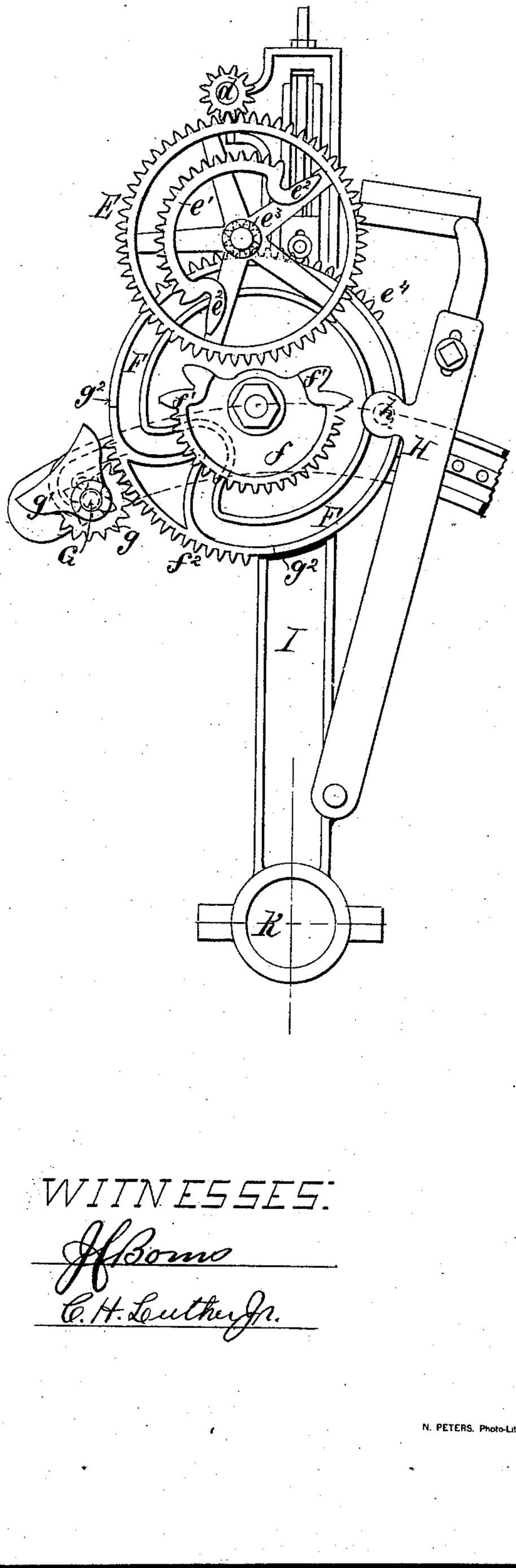
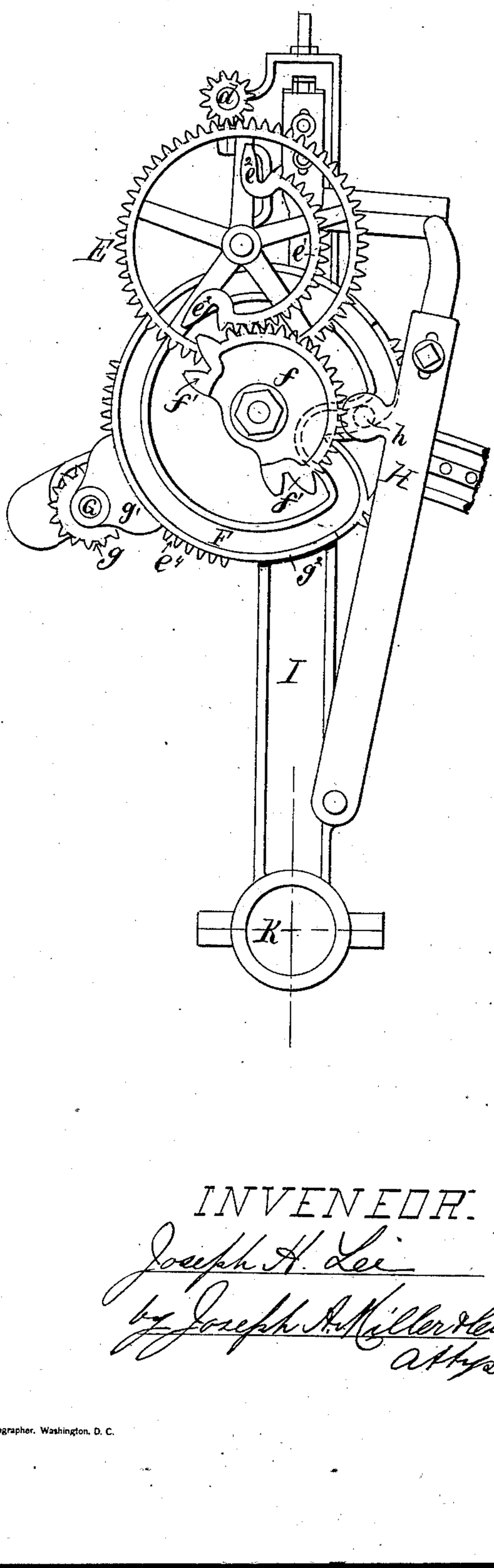


Fig. 3.



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UNITED STATES PATENT OFFICE.

JOSEPH H. LEE, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO THE FRANKLIN FOUNDRY AND MACHINE COMPANY, OF SAME PLACE.

CARDING-ENGINE.

SPECIFICATION forming part of Letters Patent No. 305,316, dated September 16, 1884.

Application filed April 7, 1883. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH H. LEE, of the city and county of Providence, and State of Rhode Island, have invented a new and useful Improvement in Carding-Engines; and I hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawings, forming part of this specification.

This invention has reference to carding-engines in which the flats are cleaned by an automatic stripper; and it consists in the peculiar and novel construction of the cam and gears by which the stripper is operated, as will be more fully set forth hereinafter.

In a carding-engine in which the fiber is operated upon between stationary flats covered with card-cloth and the main cylinder it becomes necessary to clear the flats of the accumulated fiber from time to time. This in the modern carding-engine is accomplished by raising one flat at a time and passing a stripper under the same to remove the fiber. While the flat is raised the working-surface of the carding-engine is diminished by the flat so raised.

The object of this invention is to facilitate the operation of stripping and reduce the time the flat is raised off from the cylinder by giving a quicker motion to the lifter and also to the stripper device.

Figure 1 is a perspective view of a carding-engine provided with a self-stripper operated by my improved mechanism. Fig. 2 is an enlarged view of the mechanism for operating the lifter and stripper, showing the same in the position when the flat is at its lowermost position. Fig. 3 is an enlarged view of the mechanism, showing the pinion by which the lifter is raised, locked, and the stripper passing from under the flat after stripping the same.

My improved mechanism is designed for application to machines such as are described and shown in Letters Patent No. 14,481, granted March 18, 1856, to George Wellman.

In the drawings, A is the carding-engine, of the usual construction.

B B are the flats forming the working-surface, on which the main cylinder operates to straighten and clean the fiber.

C is a pulley secured to the transverse shaft D, on the opposite end of which the pinion *d* is secured, and by which motion is imparted to the mechanism for operating the lifting and stripping devices. The pinion *d* communicates motion to the gear E. On this gear E, and moving with the same, is the segmental gear e', on each end of which the large teeth e^2 e^2 are formed.

e^3 is a pinion secured to the shaft on which the gear E is mounted, and turning with the same. This pinion engages with the teeth e^4, formed on a portion of the periphery of the cam F, the rest of the periphery of the cam not being provided with teeth which can engage with the pinion e^3, so that the cam F is rotated only a part of its revolution by the pinion e^3. Secured to the cam F is the segmental gear *f*, provided at its ends with the large teeth f' f'. This segmental gear *f* corresponds with the segmental gear e', which, when they engage, revolve the cam F during that part of its revolution when the pinion e^3 is passing over the smooth periphery of the cam F, and at a higher speed, so that the arm H, connected with the cam F by the stud *h*, will vibrate quickly at the point shown in Fig. 3 when said arm is moving the stripper under the raised flat. The flats are raised through suitable mechanism, such as is now used for this purpose on this class of carding-engines, operated by the shaft G, and this shaft is intermittently rotated by the teeth f^2, placed on the periphery of the cam F. These teeth or segmental gears f^2 are placed on one edge of the periphery of the cam F, while the teeth forming the segmental gears e^4 are placed on the other edge of the periphery of the cam, so that the teeth e^4 only can engage with the pinion e^3, and the teeth f^2 only with the pinion *g*, secured to the shaft G, to rotate the same and impart motion to the flat-lifting device.

g' is a stop secured to the shaft G and turning with the same. The concaved face of the stop g' turns against the projecting rim extending from g^2 to g^2 on the edge of the cam F around the periphery, excepting the space

where the teeth or segmental gears f^2 are placed, so that the stop in turning with the pinion g and shaft G may pass over the segmental gears f^2 until it encounters the projecting rim at g^2, and is now locked until the cam F has turned around and the segmental gear f^2 again enters the pinion g, revolves the same, and with it the shaft G and stop g'.

The whole mechanism is mounted on the arm I, pivotally connected to the shaft K of the main cylinder, and is made to pass over the flats by the means used on self-stripping carding-engines, which are well known in the art.

To more fully describe my invention, I will now describe the operations of the gears. When all parts are in the position shown in Fig. 2, the pinion d turns the gear-wheel E, and with it the pinion e^3, secured to the shaft of the gear-wheel E. This pinion is engaged with the teeth e^4, forming a segmental gear on the periphery of the cam F, and turns the cam F at a slow speed. The teeth f^2, also forming a segmental gear on the cam F, turn the pinion g, and with it the shaft G, by which the mechanism for raising the flats is operated. The stop g', turning with the pinion g, now encounters the raised rim at g^2 and holds the shaft G until, after passing around the cam F, the stop reaches the other end, g^2, of the raised rim, and the teeth f^2 again engage with the pinion g. When the pinion e^3 has reached the end of the teeth e^4, the large tooth e^2 on one end of the segmental gear e' comes in contact with the large end tooth, f', of the segmental gear f, and turns the segmental gear f and the cam F. The next large tooth of the segmental gear f enters the tooth e^2 of the segmental gear e', thus engaging the two segmental gears and turning the cam at a quicker speed, and thereby vibrating the stripper-arm more quickly, the large teeth f' and the fork e^2 at the opposite ends of the segmental gears insuring the prompt engagement of the pinion e^3 with the teeth e^4.

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

The shafts D and K, the arm I, mounted on the shaft K, the arm H, mounted on the arm I and provided with the stud h, the pinions d and g, and the stop g', in combination with the gear E, having the segment-gear e', formed with the large teeth e^2, the pinion e^3, the cam F, having the teeth e^4 f^2, and the segment-gear f, having the large teeth f', all constructed and arranged to operate as set forth.

JOSEPH H. LEE.

Witnesses:
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