

(No Model.)

G. T. FRANCIS.
COILER FOR CARDING ENGINES, &c.

No. 432,132.

Patented July 15, 1890.

Fig. 1

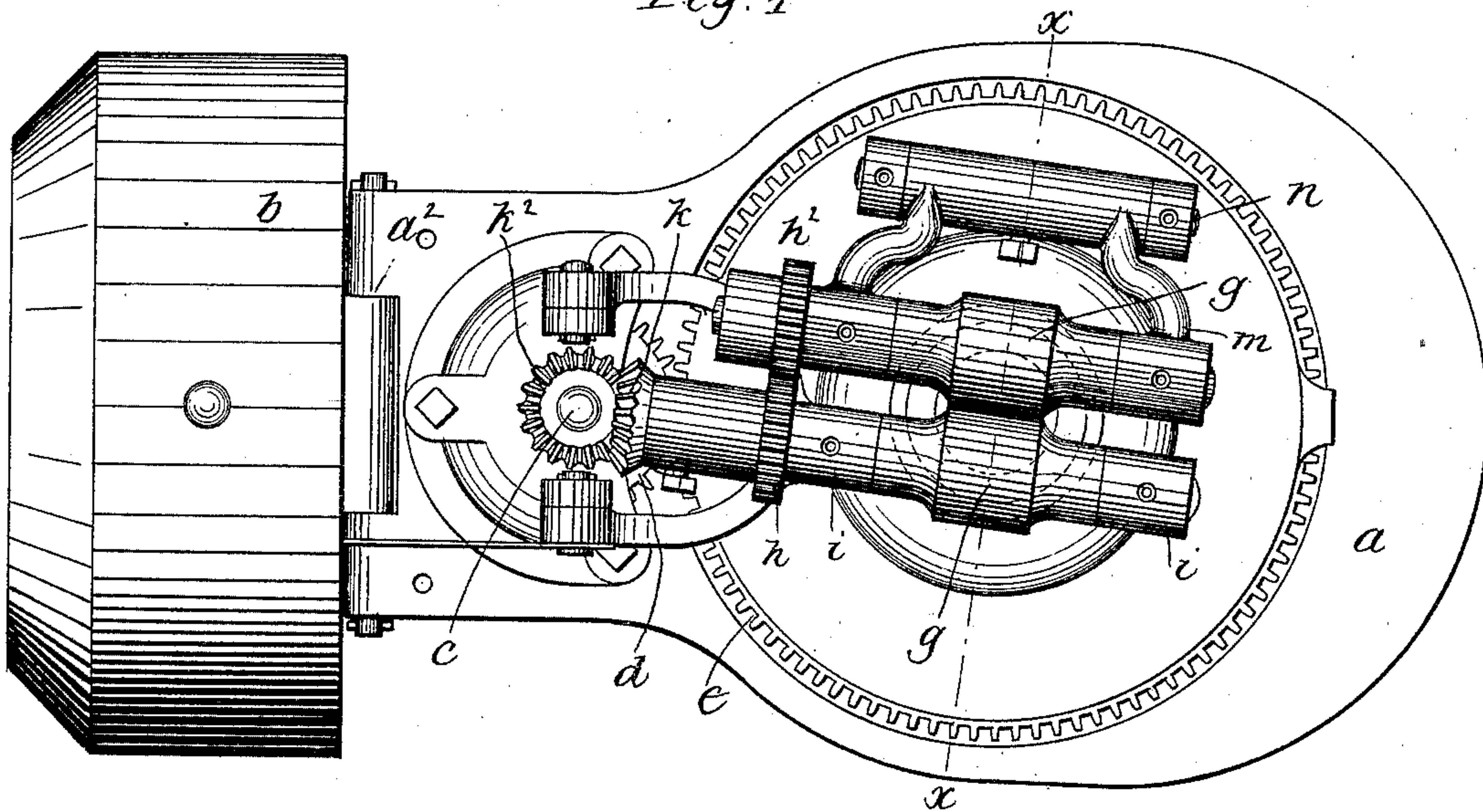


Fig. 2,

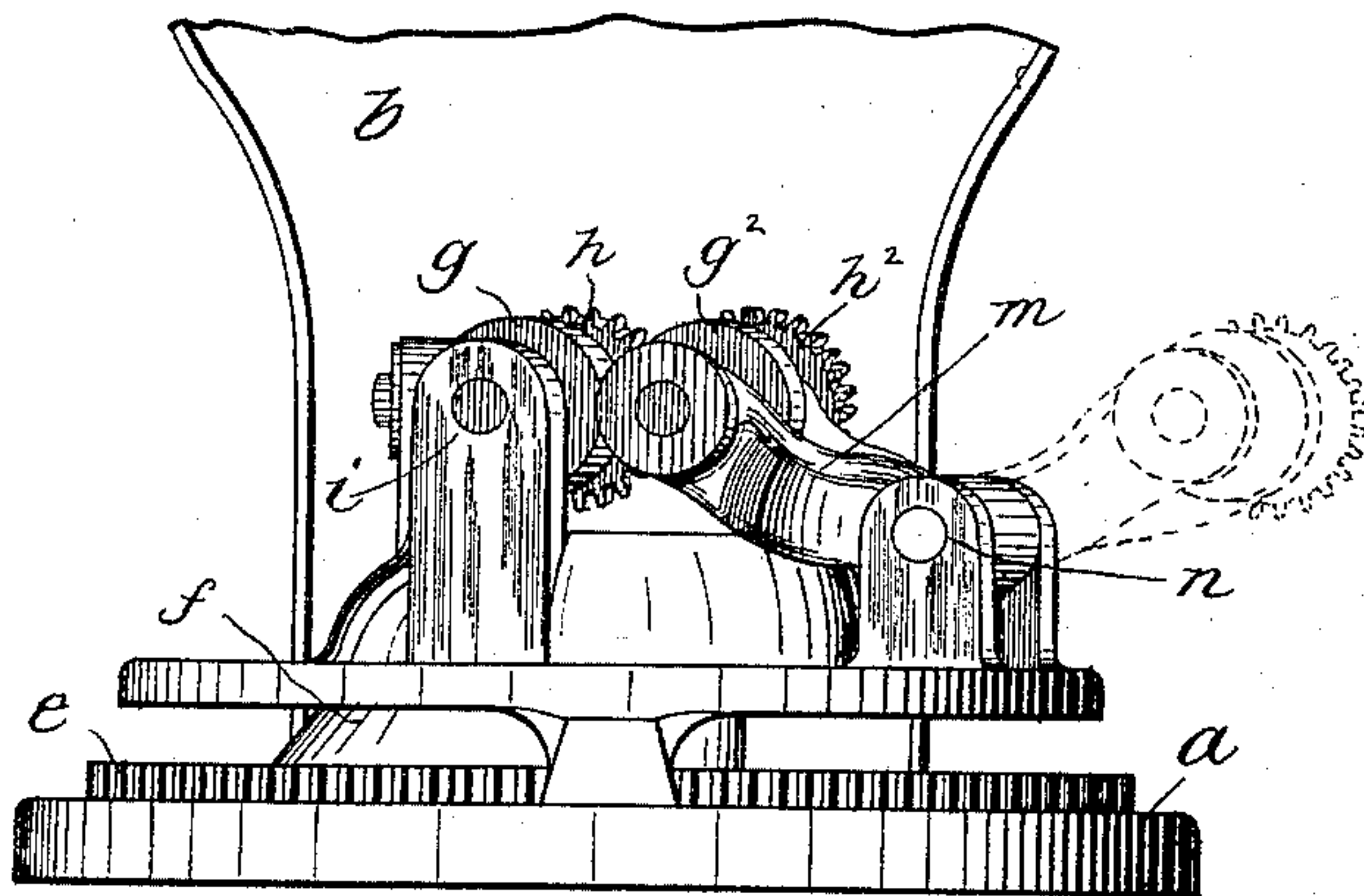
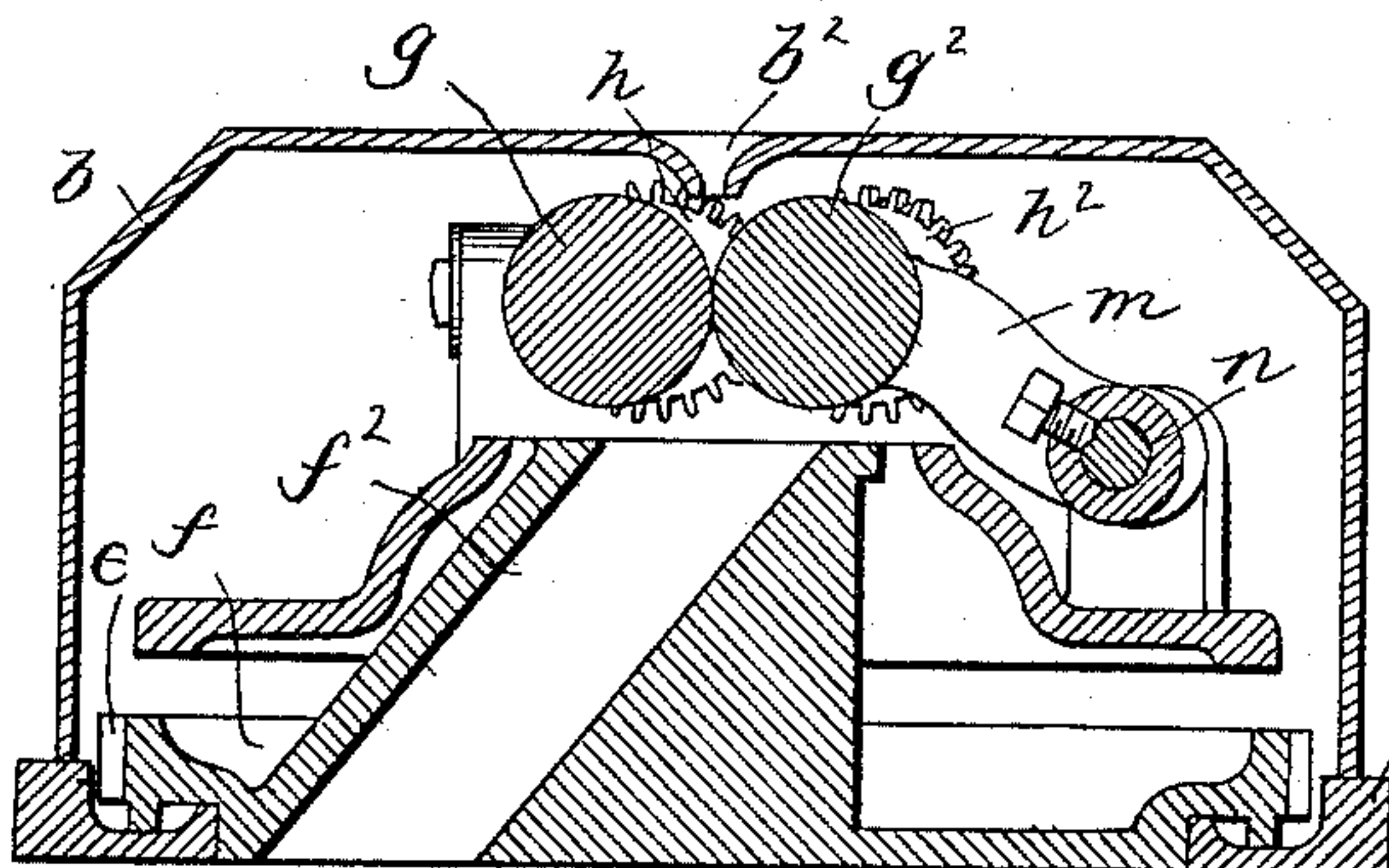


Fig. 3.



Witnesses,
Jas. J. Maloney.
M. E. Heise.

Inventor,
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Att'y.

UNITED STATES PATENT OFFICE.

GEORGE TAPPAN FRANCIS, OF NEWTON, ASSIGNOR TO THE PETTEE MACHINE WORKS, OF NEWTON UPPER FALLS, MASSACHUSETTS.

COILER FOR CARDING-ENGINES, &c.

SPECIFICATION forming part of Letters Patent No. 432,132, dated July 15, 1890.

Application filed January 17, 1890. Serial No. 337,253. (No model.)

To all whom it may concern:

Be it known that I, GEORGE TAPPAN FRANCIS, of Newton, county of Middlesex, State of Massachusetts, have invented an Improvement in Coilers for Carding-Engines, &c., of which the following description, in connection with the accompanying drawings, is a specification, like letters on the drawings representing like parts.

My invention is embodied in a coiler for carding-engines and drawing-frames or for a similar apparatus, and relates mainly to the means for supporting and guiding the feeding-in or calender rolls. Various expedients—such as spring-pressed or wedging bearings—have been employed for supporting the rolls so as to produce a yielding pressure upon the sliver passing between them, and such expedients, so far as known to me, have been objectionable and have been the cause of considerable annoyance and loss of time and breakage.

In accordance with the present invention one of the pair of rolls works in fixed or stationary bearings, while the other has its bearings on a swinging frame pivoted on an axis parallel with that of the rolls and below the same, so that the force of gravity upon the said frame and the roll having its bearing therein tends to press the roll toward its mate, so as to produce the desired pressure upon the sliver passing between them. At the same time the rolls are free to move apart in case a bunch or hard piece comes between them, and the roll supported in the swinging frame can at any time be swung wide apart from its mate, affording perfect access to both rolls, which can be easily cleared if the sliver is broken and wound up upon either of them. The shafts of the rolls are provided with gears which mesh together, and the roll turning in fixed bearings is driven positively by a gear, and the corresponding motion is imparted to the other roll through the connecting-gears, without, however, interfering with the free movement of one roll toward or from the other.

Figure 1 is a plan view of a coiler embodying this invention, with the cover raised to show the working parts within; Fig. 2, a front elevation thereof, with the cover raised; and

Fig. 3, a transverse section on line $x x$, Fig. 1, with the cover closed.

The base-piece a , that stands above the can in which the sliver is to be coiled, and the cover b , hinged thereto at a^2 and provided with an opening b^2 , (see Fig. 3,) through which the sliver is introduced, may be of substantially usual construction, and the operative parts contained within said cover are shown as driven by a shaft c , (see Fig. 1,) provided with a spur-gear d , that meshes with a gear e on the revolving sliver-delivering head f , which latter is provided with an inclined passage f^2 , (see Fig. 3,) extending from a point over the middle to a point near the periphery of the said head, as shown, so as to deliver the sliver passing down through said passage f^2 in a coil around the interior of the can, all in the usual manner. The sliver is carried from the passage b^2 into the passage f^2 by a pair of feeding or calender rolls $g g^2$, the shafts of which are provided with gears $h h^2$, which mesh together, the shaft of the roll g being supported in stationary bearings i , and being provided with a beveled gear k , meshing with a beveled gear k^2 on the driving-shaft c , which thus imparts rotary motion to both the rolls. In order that the rolls may be pressed toward one another, so as to bite upon the sliver passing between them with the desired pressure, and so that they can yield and be forced apart in case a bunch or particle of hard material should pass between them, the roller g^2 is mounted in bearings in a frame m , which is itself pivoted in bearings at n , so as to turn on an axis parallel with those of the rollers $g g^2$. The pivotal axis of the swinging frame m is at one side of and below that of the roller g^2 , supported in said frame, so that the force of gravity upon the said frame and roller tends to press the roller g^2 toward the opposite roller g , and the driving action of the gears $f f^2$ tends to slightly increase this pressure—that is, the natural action of the said gears is to draw the rolls together rather than to throw them apart. The roller g^2 is, however, free to yield, and, if required, may be thrown away from the roller g , as shown in dotted lines, Fig. 2, thus widely separating the rolls and leaving each accessible for the purpose of

clearing the same in case the sliver has become entangled thereon, and such separation and replacement of the rollers can be effected without loosening any part or removing any 5 of the working parts, a result which cannot be attained with the construction of coilers heretofore commonly adopted.

I claim—

10 The combination of the revolving sliver-delivering head of a coiler with the feeding-rolls, one supported on fixed bearings and provided with gearing by which it is rotated,

and a swinging frame containing bearings for the other roll, the said frame being pivoted on an axis at one side of and below the axes of 15 the rolls, substantially as and for the purpose described.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

GEORGE TAPPAN FRANCIS.

Witnesses:

GUY M. COBB,
A. B. BARRETT.