

(No Model.)

2 Sheets—Sheet 1.

J. K. PROCTOR.
CARDING MACHINE.

No. 407,743.

Patented July 23, 1889.

FIG. 1.

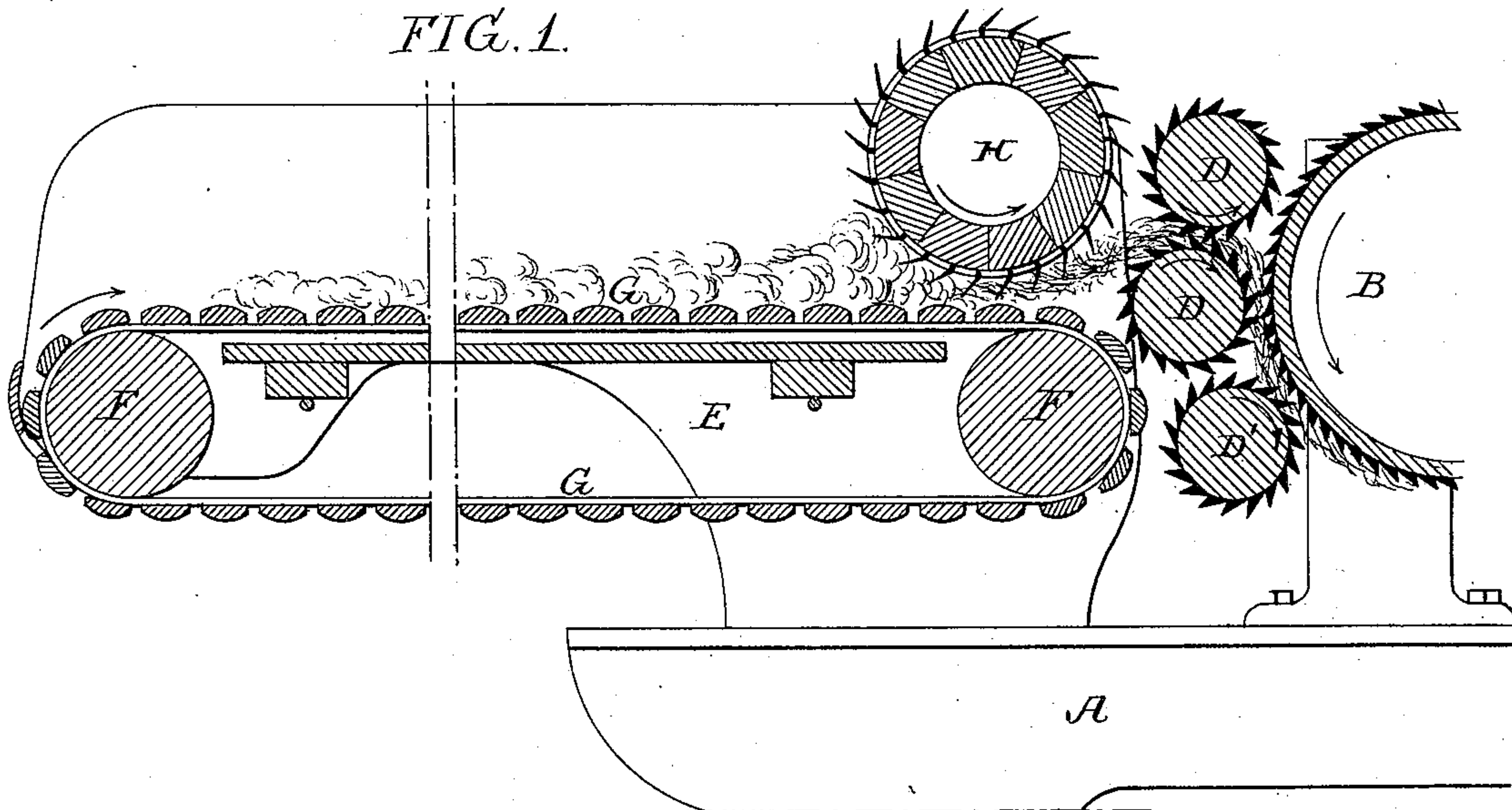
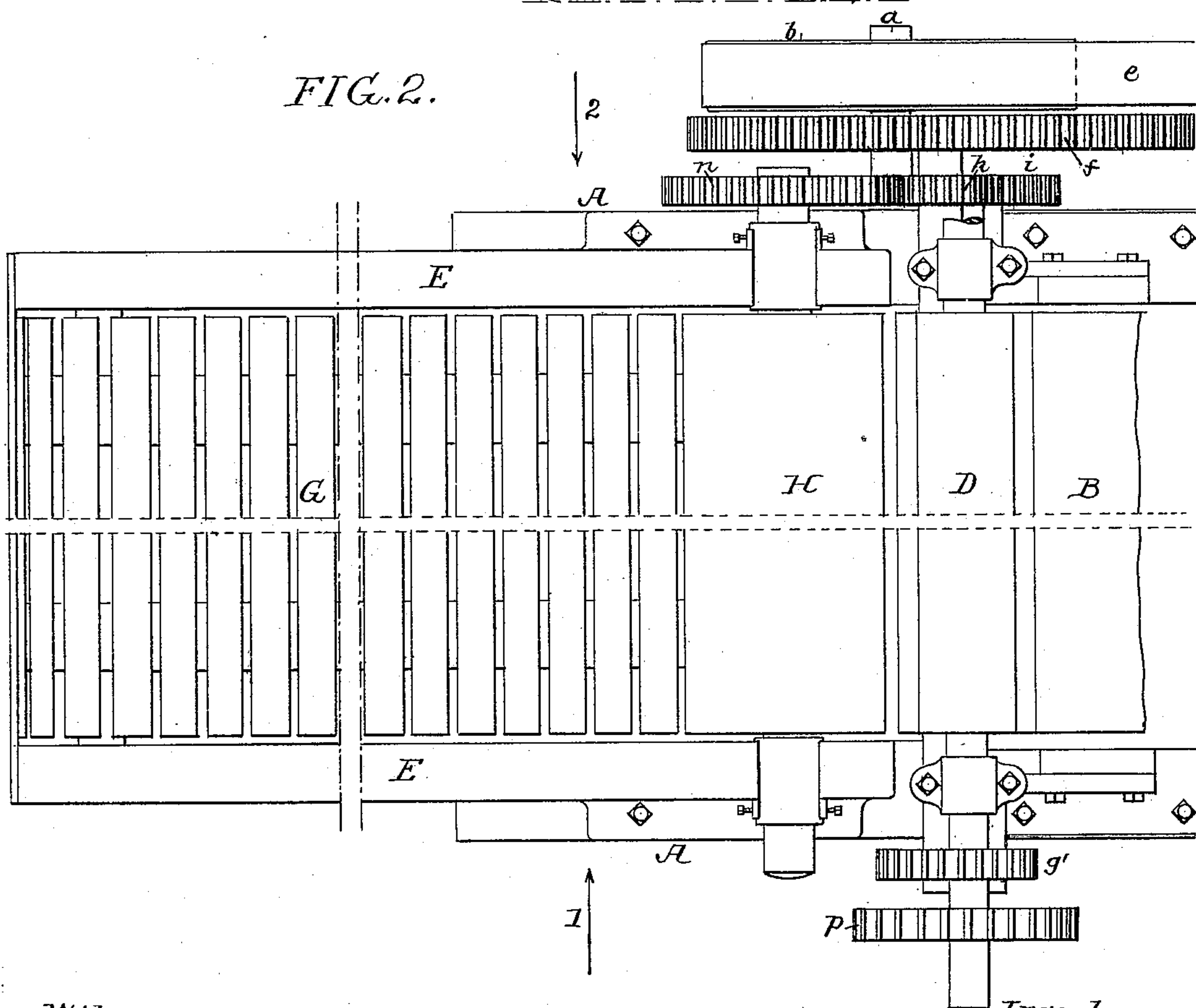


FIG. 2.



Witnesses:
Alex. Barkoff
John T. Lewis

Inventor
Josiah K. Proctor
by his Attorneys
Howson & Son's

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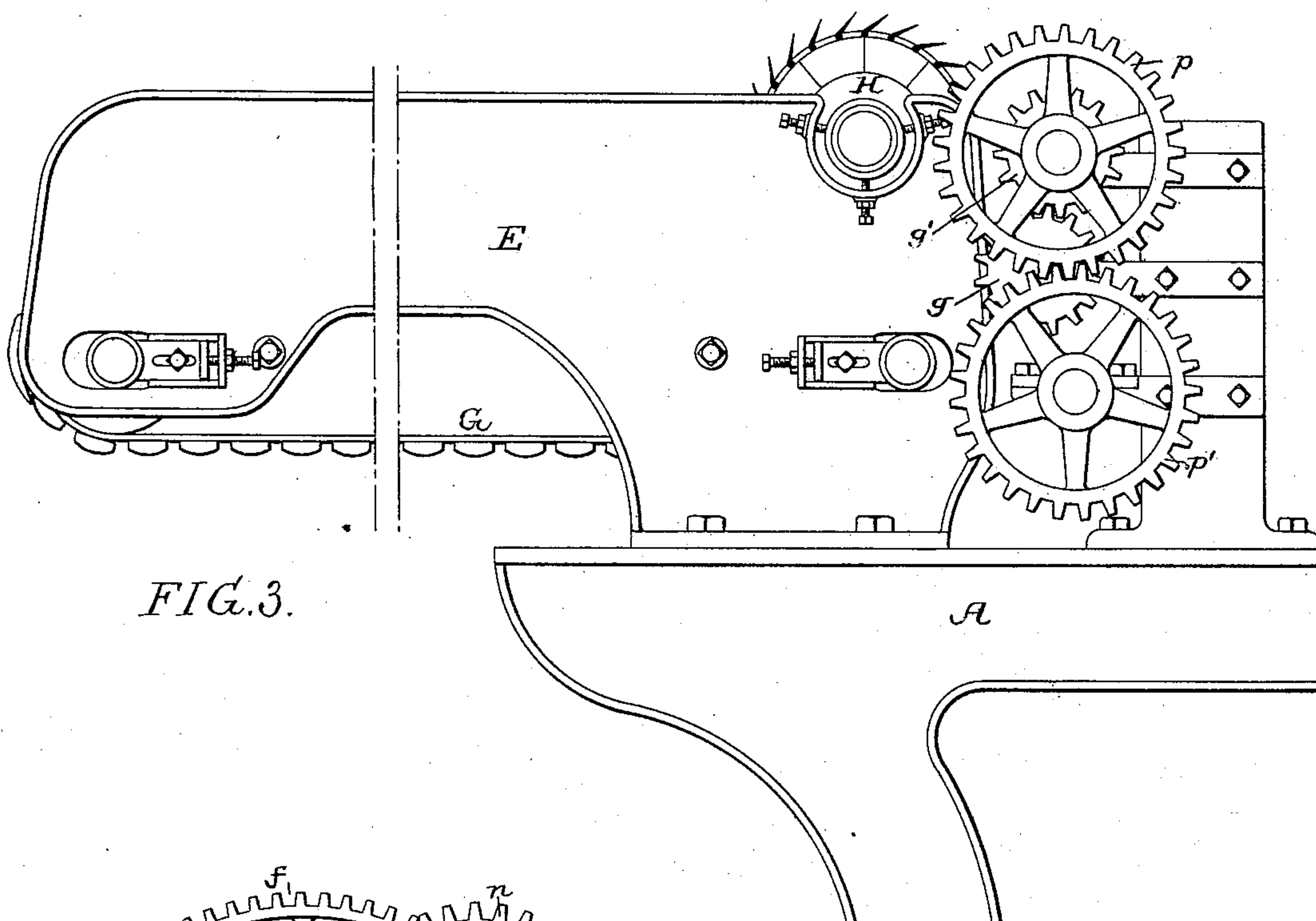


FIG. 3.

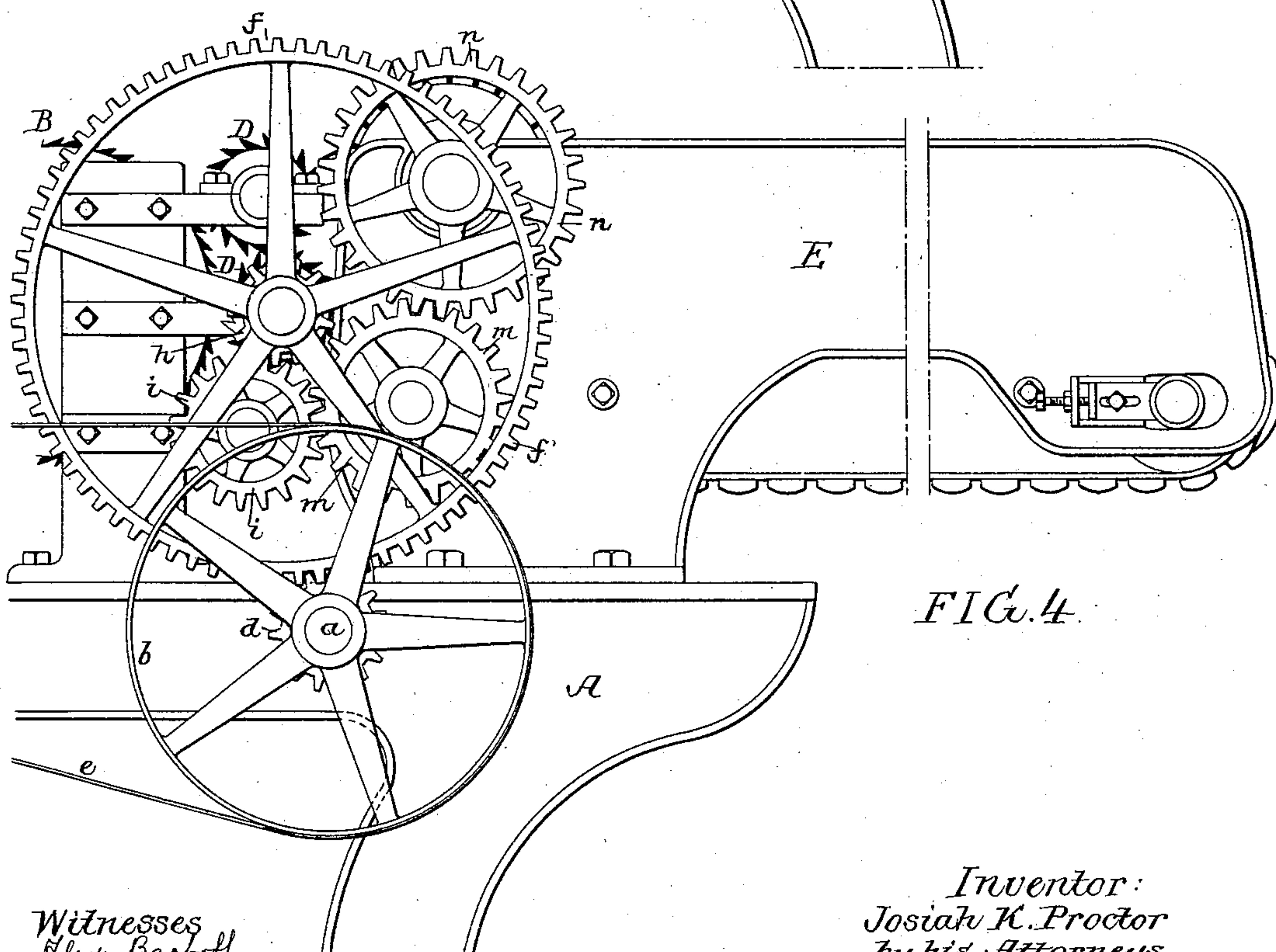


FIG. 4.

Witnesses
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Howson & Sons.

UNITED STATES PATENT OFFICE.

JOSIAH K. PROCTOR, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNOR TO THE
PHILADELPHIA TEXTILE MACHINERY COMPANY, OF SAME PLACE.

CARDING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 407,743, dated July 23, 1889.

Application filed August 1, 1887. Serial No. 245,781. (No model.)

To all whom it may concern:

Be it known that I, JOSIAH K. PROCTOR, a citizen of the United States, and a resident of Philadelphia, Pennsylvania, have invented certain Improvements in Carding-Machines, of which the following is a specification.

The object of my invention is to so construct a carding or like machine as to prevent the feeding into the machine of bunches, snarls, clots, lumps, &c., or the formation of such bunches, &c., in the rear of the feed-rolls. This object I attain in the manner which I will now proceed to describe, reference being had to the accompanying drawings, in which—

Figure 1 is a longitudinal section of sufficient of a carding or like machine to illustrate my invention. Fig. 2 is a plan view of the same, the retainer and other rolls being, however, for convenience, shown without teeth. Fig. 3 is a side view looking in the direction of the arrow 1, Fig. 2; and Fig. 4 is a side view looking in the direction of the arrow 2, Fig. 2.

As is well known to those skilled in the art of carding, the office of the rolls whereby the fiber is fed to the licker-in or first taker of the carding-machine is to hold the material and slowly and evenly deliver it to said licker-in or equivalent roll of the machine, and the perfection of the carding operation is largely due to the proper performance of this duty by the feed-rolls. In practice, however, it is found that with many kinds of material the feed-rolls do not properly perform the work for which they are intended. For instance, when the material contains small and compact masses of fiber—such as are variously called “bunches,” “snarls,” “clots,” “lumps,” &c.—such masses pass through the feed-rolls and are drawn into the machine without being properly combed, while in other classes of material naturally free from such masses, but having long fibers clinging together in disordered condition, as is usual in uncarded material, such fibres, on passing the feed-rolls and being caught by the licker-in or carding-cylinder are drawn rapidly forward between the feed-rolls, with the result that neighboring fibers which had not yet reached the feed-rolls, but which ad-

here to or touch the rapidly-moving fibers, are drawn prematurely up to the feed-rolls, often in quantities sufficient to form clots of considerable size, which pass into the machine, as previously described, and produce the same bad result. In order to overcome these objections, I provide what I term a “retainer-roll,” which acts upon the fibers before the latter reach the feed-rolls, this retainer-roll being toothed and so operated that it serves to comb out or straighten the clots, bunches, snarls, or other masses of fiber, and to prevent the drawing of loose fibres up to the feed-rolls by contact with long strands drawn rapidly between said rolls, as before described.

In the drawings, A represents part of the frame of a carding or like machine; B, part of the licker-in or first taker of the machine; D D, the usual feed-rolls, and D' a clearer-roll, all of these parts being located and supported in the manner common in this class of machinery.

On the frame A is supported the frame E, which has bearings for the rolls F F of the feed-apron G, the latter consisting in the present instance of belts or bands carrying transverse slats, although any desired construction of feed apron or table may be used in carrying out my invention.

Immediately behind the feed-rolls and above the feed-apron I place what I term the “retainer-roll” H, which is provided with hooked teeth, preferably so arranged that they project rearwardly when acting upon the fiber upon the feed-apron, as shown in Fig. 1, the roll being constructed and the teeth applied thereto in any desired manner. As shown in the present instance, the roll is made of segments and covered with clothing, which may be similar to that of an ordinary carding-machine. This retainer-roll has a surface speed preferably somewhat less than that of the feed-rolls, so that it serves to catch any compact masses of fiber that may be carried forward on the feed-apron and prevents such masses from passing directly to the feed-rolls, the effect of the toothed retainer-roll being to loosen, comb, or straighten these fibers to a certain extent before they reach the feed-rolls, and to catch and retain any loose fibers

that may be adhering to long strands drawn rapidly through the feed-rolls by the action of the rapidly-moving lick-in or cylinder of the machine.

5 The gearing for driving the various parts may be modified in many ways without departing from the essential feature of my invention; but in Figs. 2, 3, and 4 I have shown one form of gearing which may be used. In
10 this case a stud *a*, projecting from the frame of the machine, carries a sleeve, on which are a pulley *b* and a spur-pinion *d*, the pulley receiving a belt *e*, which may lead to any convenient driving-pulley on the machine. The
15 pinion *d* engages with a spur-wheel *f* on one end of the shaft of the lower feed-roll, the opposite end of which has a spur-wheel *g* gearing into a like wheel *g'* on the upper feed-roll, so that said rolls rotate at a uniform speed.

20 Attached to the shaft of the upper feed-roll, adjacent to the wheel *g'*, is a spur-wheel *p*, which gears with a spur-wheel *p'*, attached to the end of the clearer-roll shaft.

On the shaft of the lower feed-roll is also a
25 spur-pinion *h*, which gears into a spur-wheel *i*, running loosely on the shaft of the clearer-roll *D'*, and said spur-wheel gears into a spur-wheel *m*, attached to and driving the shaft of one of the apron-rolls *F*, said wheel *m* gearing into a spur-wheel *n* on the shaft of the re-
30 tainer-roll *H*.

The wheels *m n* are not intended so much as a means of positively driving the retainer-roll as to prevent the rapid rotation of the same under the influence of the fiber drawn
35 forward by the feed-rolls and first taker of the machine, the sizes of the wheels *h, i, m,* and *n* being preferably such that the surface speed of the retainer-roll is somewhat less than that of the feed-rolls. 40

The teeth of the retainer-roll may, if desired, be straight, although the rearwardly-hooked teeth are preferred on account of the better action of the same upon the fiber.

I claim as my invention— 45

The combination of the feed-rolls with the feed-apron or equivalent device, and a retainer-roll located above the apron and having teeth, whereby as the fiber is fed between the retainer-roll and apron to the feed-rolls
50 snarls or bunches will be caught and held by the teeth of the roll without preventing the passage of the clear fibers, all substantially as specified.

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

J. K. PROCTOR.

Witnesses:

JOHN T. LEWIS,
HARRY SMITH.