

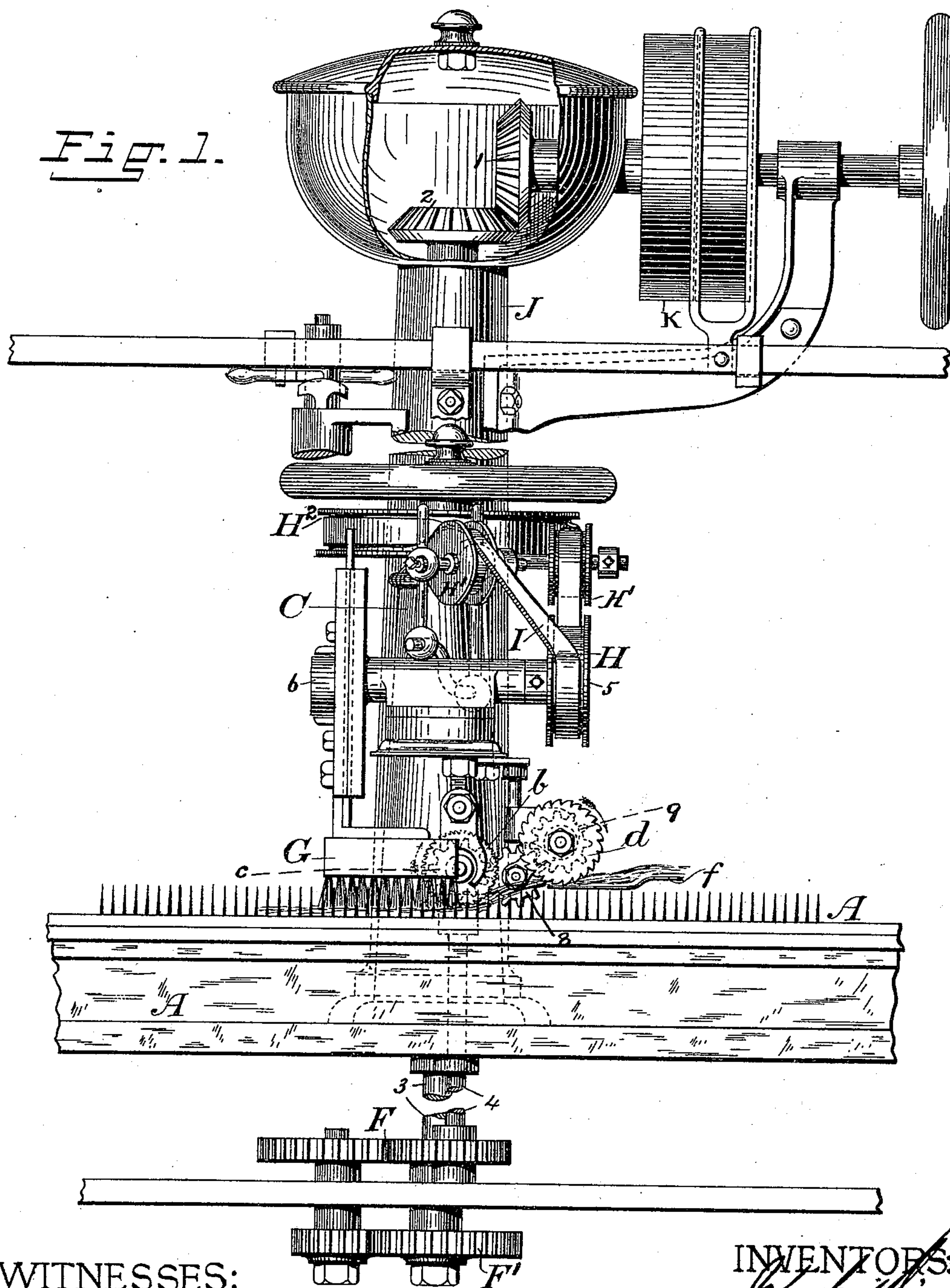
(No Model.)

3 Sheets—Sheet 1.

J. SMITH & J. STAKE.
WOOL COMBING MACHINE.

No. 438,755.

Patented Oct. 21, 1890.



WITNESSES:
H. B. Crossley
Reilly, S. Ogden

INVENTORS:
John Smith
John Stake

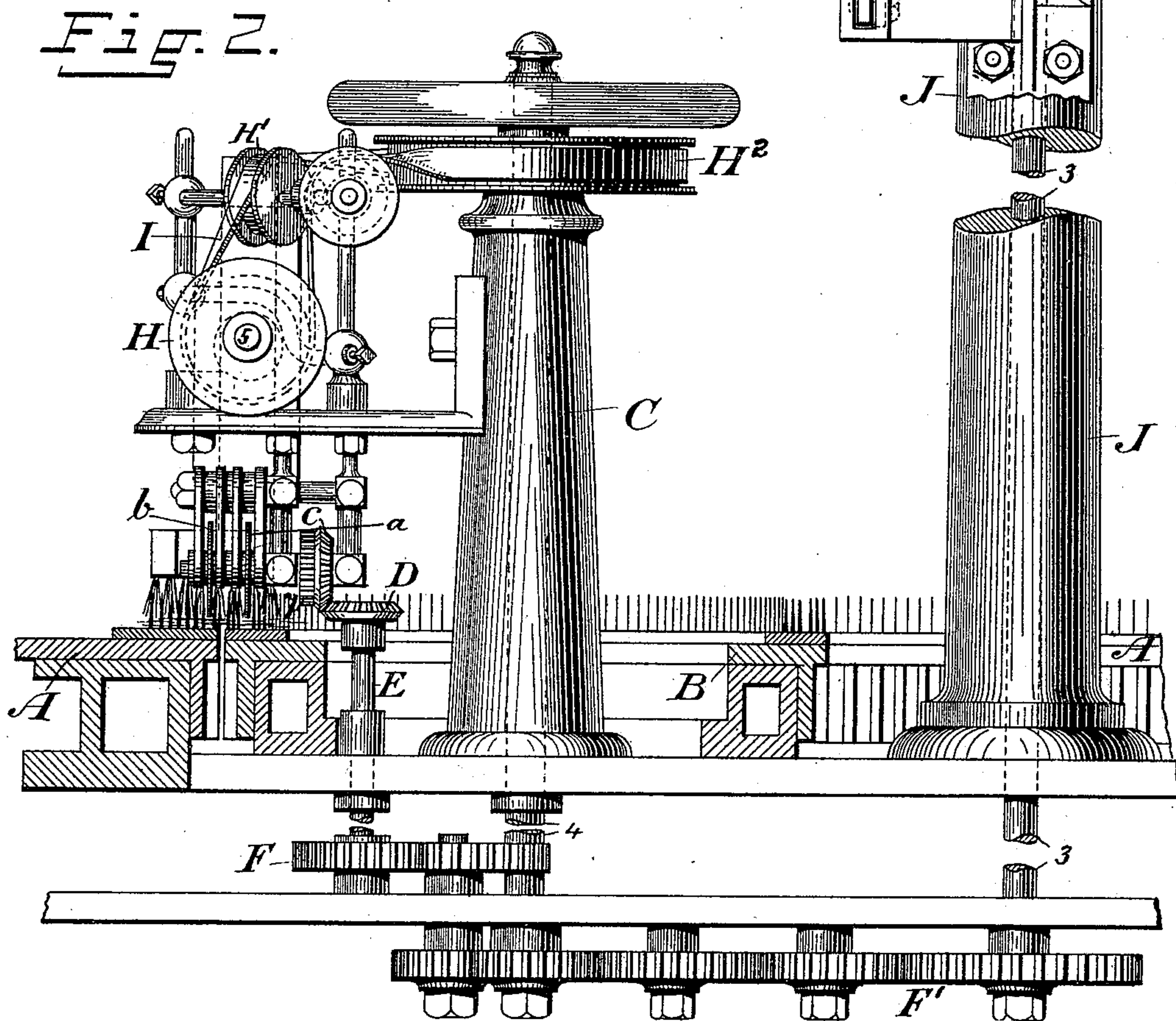
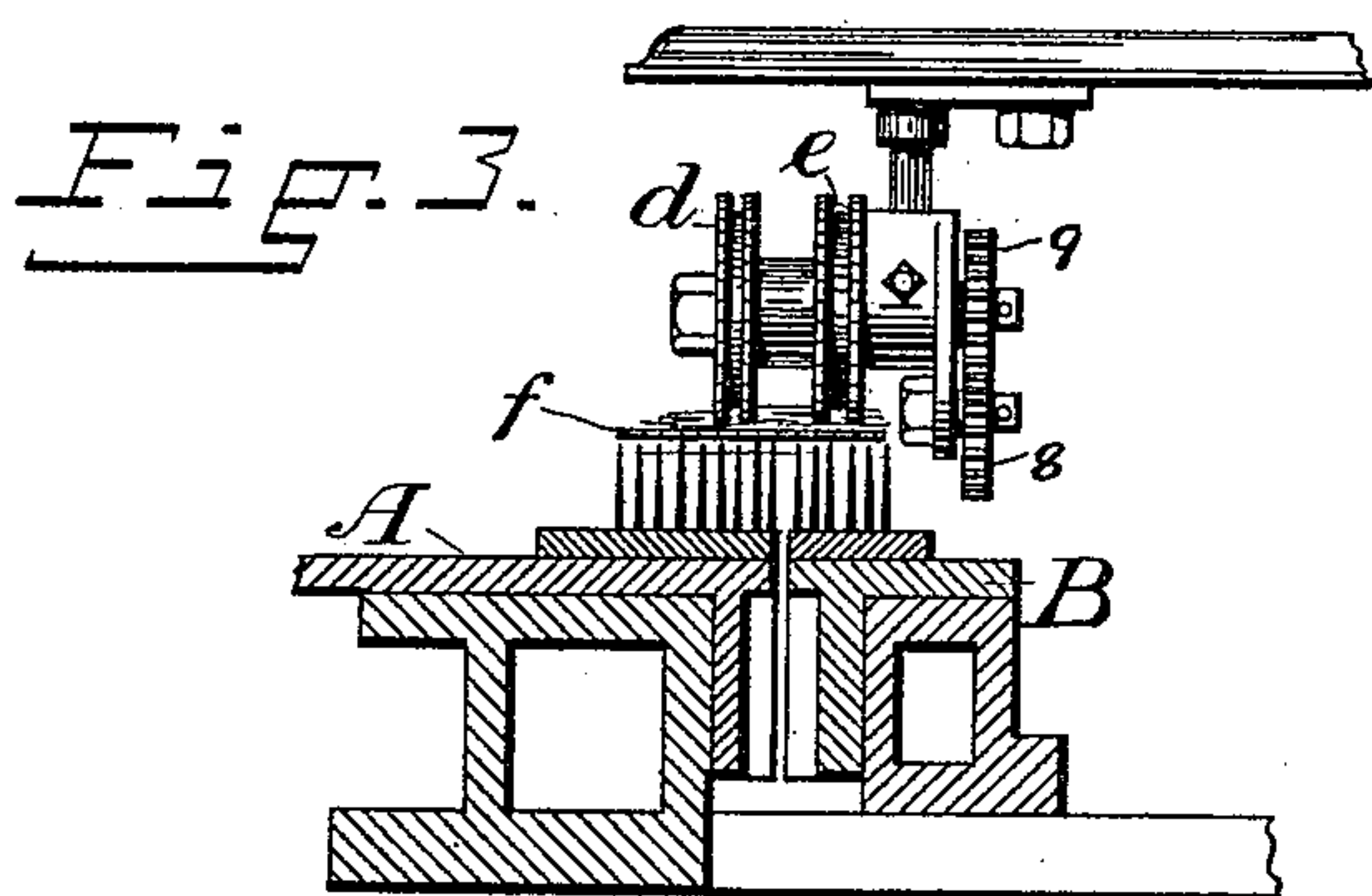
(No Model.)

3 Sheets—Sheet 2.

J. SMITH & J. STAKE.
WOOL COMBING MACHINE.

No. 438,755.

Patented Oct. 21, 1890.



WITNESSES:

Arthur B. Crossley
Wesley S. Cyden

INVENTORS:

John Smith
John Stake

(No Model.)

3 Sheets—Sheet 3

J. SMITH & J. STAKE.
WOOL COMBING MACHINE.

No. 438,755.

Patented Oct. 21, 1890.

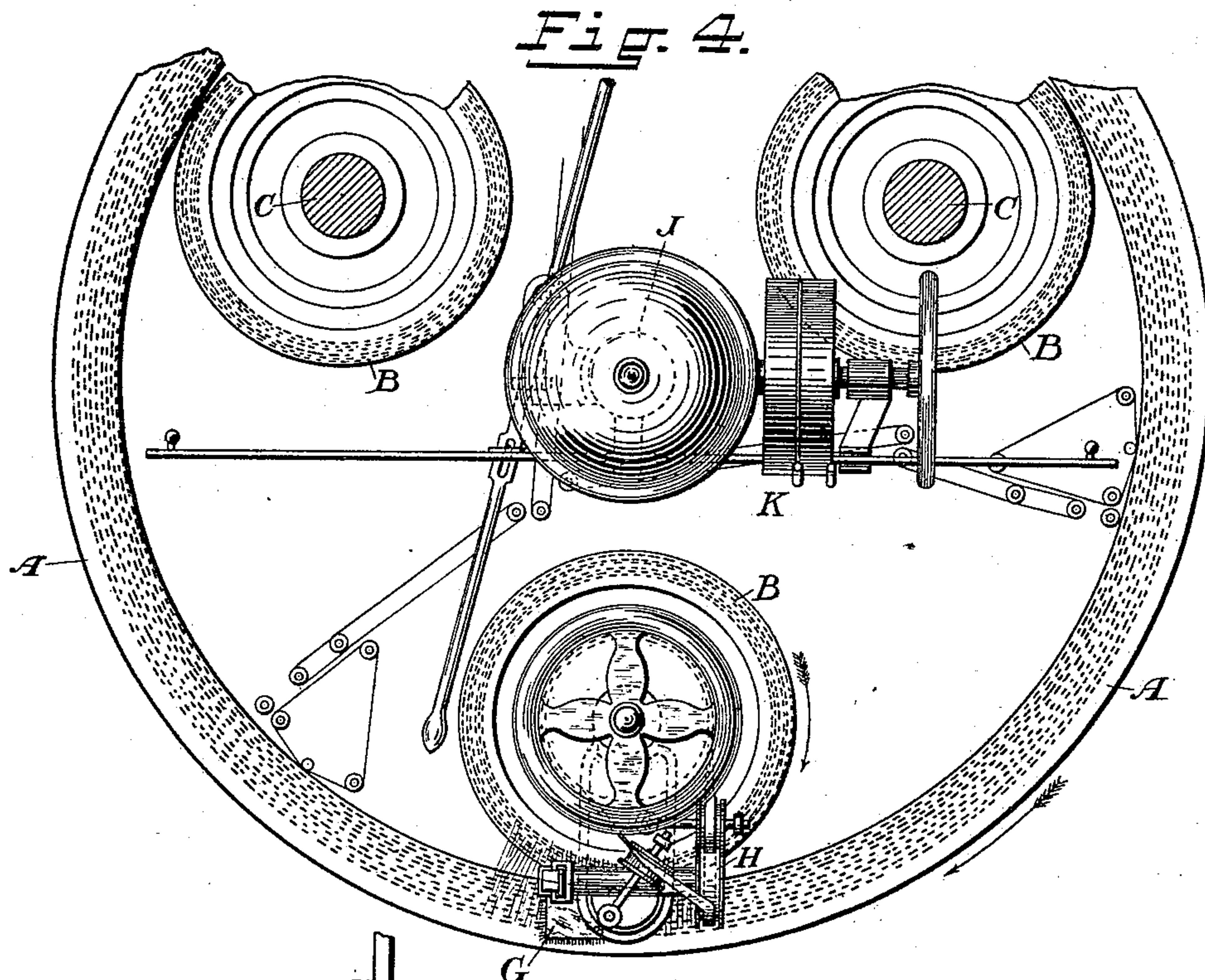


Fig. 5.

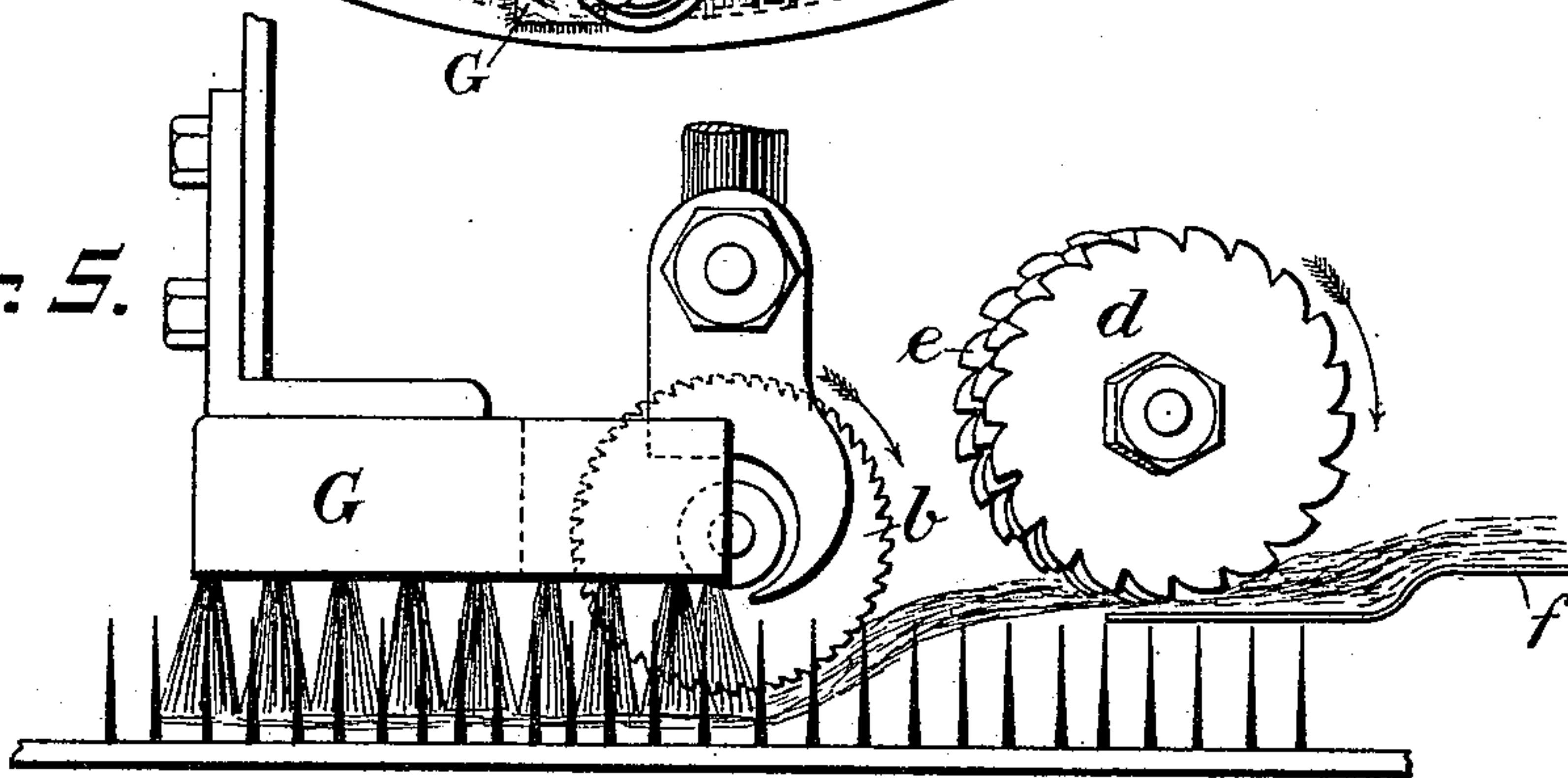
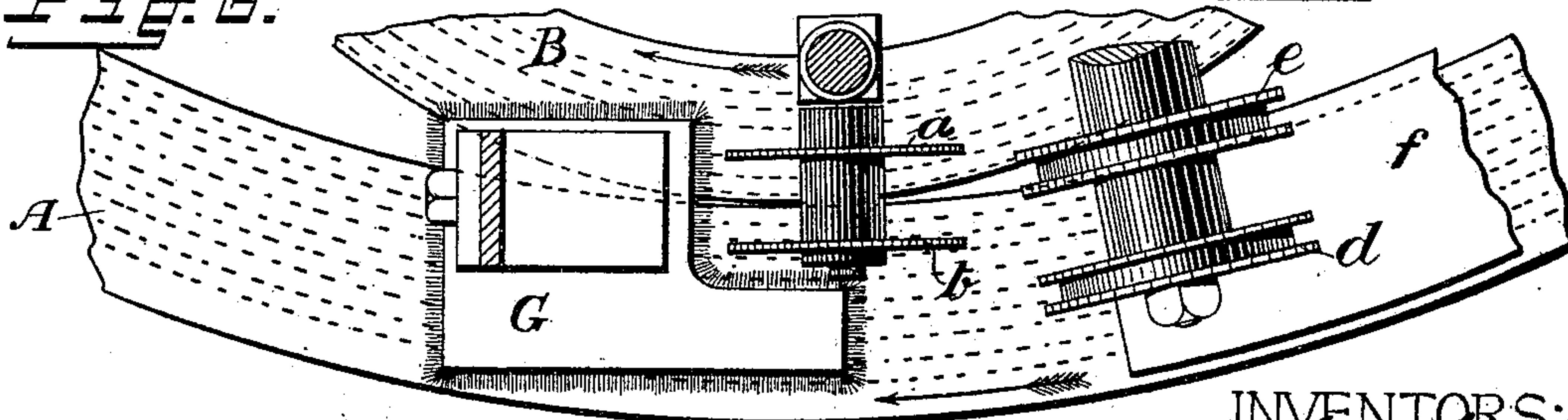


Fig. 6.



WITNESSES:
Arthur B. Brown
Healey S. Ogden

INVENTORS:

John Smith
John Stake

UNITED STATES PATENT OFFICE.

JOHN SMITH AND JOB STAKE, OF HALIFAX, ENGLAND.

WOOL-COMBING MACHINE.

SPECIFICATION forming part of Letters Patent No. 438,755, dated October 21, 1890.

Application filed May 13, 1890. Serial No. 351,624. (No model.) Patented in England October 23, 1889, No. 16,713.

To all whom it may concern:

Be it known that we, JOHN SMITH and JOB STAKE, citizens of Great Britain, residing at Halifax, in the county of York, England, have
5 invented certain new and useful Improvements in Wool-Combing Machines, (for which we have obtained a patent in Great Britain No. 16,713, dated October 23, 1889;) and we do hereby declare the following to be a full, clear,
10 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.

This invention relates to wool-combing machines; and it consists in the novel construction and combination of the parts hereinafter fully described and claimed.

In order that our invention may be understood, we will make reference to the accompanying drawings illustrative thereof, wherein—
20 in—

Figure 1 is a front view of such parts of a Noble's combing-machine as are necessary to show the application of our improvements, and Fig. 2 is a side view of Fig. 1. Fig. 3 is
25 a detail side view of the rollers *d* and *e*, showing parts of the comb-circles and frame in section. Fig. 4 is a plan of the machine from above, a part being broken away. Figs. 5 and 6 are detail front and plan views of portions
30 of the comb-circles and the pressing devices drawn to a larger scale.

A represents the large or outer combing-circle, and B B B represent the small or inner combing-circles, from the centers of each of which small circles a pillar or standard C
35 projects for supporting the various brackets carrying our improved parts. These combing-circles are provided with gills or pins in the ordinary manner, and for the purpose of
40 pressing the fiber between the teeth of the combs we mount on a short shaft two disks *a* and *b*, one of which is made to revolve within the intervening spaces of the pins of the large circle and the other within the spaces of the
45 small circle, as shown in Figs 1, 2, 5, and 6, the latter of which are enlarged views of our improved parts. The edges or peripheries of these disks are milled or slightly serrated, and they are made to revolve by the beveled
50 spur-wheel *c*, (shown in dotted lines in Fig. 1 and in full lines in Fig. 2,) which spur-wheel

receives its rotary motion through the bevel-wheel D and upright shaft E and by the train of gearing F. In combination with these driven disks *a* and *b* we employ a small dab-
55 bing-brush G for the purpose of preventing the fiber (after it has been pressed into the teeth of the circles by the disks *a* and *b*) from rising out of the said teeth. Therefore, as the circles leave each other at the tangent
60 with the fiber well in the teeth the combing and lashing out of the said fiber are effectually and properly performed. The dabbing-brush is made to reciprocate up and down by an eccentric driven by pulleys H, H', H², and
65 strap I.

In combination with the dabbing-brush G and serrated revolving disks *a* and *b* we employ two pairs of disks or rollers *d* and *e*, the edges of which are provided with teeth, and
70 they are employed for the purpose of guiding and pressing the fiber onto the steel plate *f*, just before the said fiber reaches the disks *a* and *b*. It will be observed in the drawings that the lower parts of those disks revolve part
75 way down between the teeth of the large circle for pressing the fiber down among the said teeth.

By dispensing with the ordinary form of dabbing-brush and employing disks with
80 milled edges—such as *a* and *b*—in combination with dabbing-brush G and rollers *d* and *e*, the fiber is pressed well into the teeth of the combs, ready for the combing operation, which is effected by the separation of the
85 combs, in addition to which advantage the said combs can be run at a greater speed than hitherto, as the pressing-disks are always acting on the fiber and never leave the circles, as is the case with the dabbing-brush. 90
Consequently a greater quantity of fiber can be combed in a given time than by the old method of forcing the fiber into the combs by a brush.

We impart rotary motion to our devices by
95 means of the belt-pulleys K and miter-wheels 1 and 2, which drive the shaft 3 inside the central pillar J. The motion of shaft 3 is communicated to the vertical shafts inside the pillars C by similar trains of spur-wheels F', as
100 shown in Fig. 2. Belt-pulleys H² are secured upon the shafts 4, and belt-pulleys H are se-

cured upon the horizontal shafts 5, upon which are secured the eccentrics 6 for reciprocating the brushes G. The belt I communicates the motion of the said pulleys, and is supported by the guide-pulleys H', as shown in Fig. 1. The disks *a* and *b* are driven from the shafts 4 through trains of gearing F, shafts E, and beveled wheels D and *c*, as hereinbefore described. The disks *d* and *e* are driven from spur-pinions 7, secured to the wheels *c*, which pinions gear into the idle-wheels 8, which in turn transmit their motion to the spur-pinions 9, secured on the same shaft with the disks *d* and *e*, as shown in Figs. 2 and 3.

What we claim is—

1. In a combing-machine, the combination, with a large comb-circle and a small internal comb-circle, of the positively-driven disks *a* and *b* and the reciprocating dabbing-brush G, substantially as and for the purpose set forth.

2. In a combing-machine, the combination,

with a large comb-circle and a small internal comb-circle, of the positively-driven disks *a* and *b*, the reciprocating dabbing-brush G, and the revoluble disks *d* and *e*, substantially as and for the purpose set forth.

3. In a combing-machine, the combination, with a large comb-circle and a small internal comb-circle, of the plate *f*, the disks *d* and *e*, the disks *a* and *b*, the intermediate spur-wheels coupling the said pairs of disks together, a revoluble shaft, and intermediate spur-wheels operatively connecting the said shaft with the disks *a* and *b*, substantially as and for the purpose set forth.

In testimony whereof we affix our signatures in presence of two witnesses.

JOHN SMITH.
JOB STAKE.

Witnesses:

ERNEST P. NEWTON,
Moorfield Villa, Halifax.

HEDLEY S. OGDEN,
132 Gibbet Street, Halifax.