

(No Model.)

2 Sheets—Sheet 1.

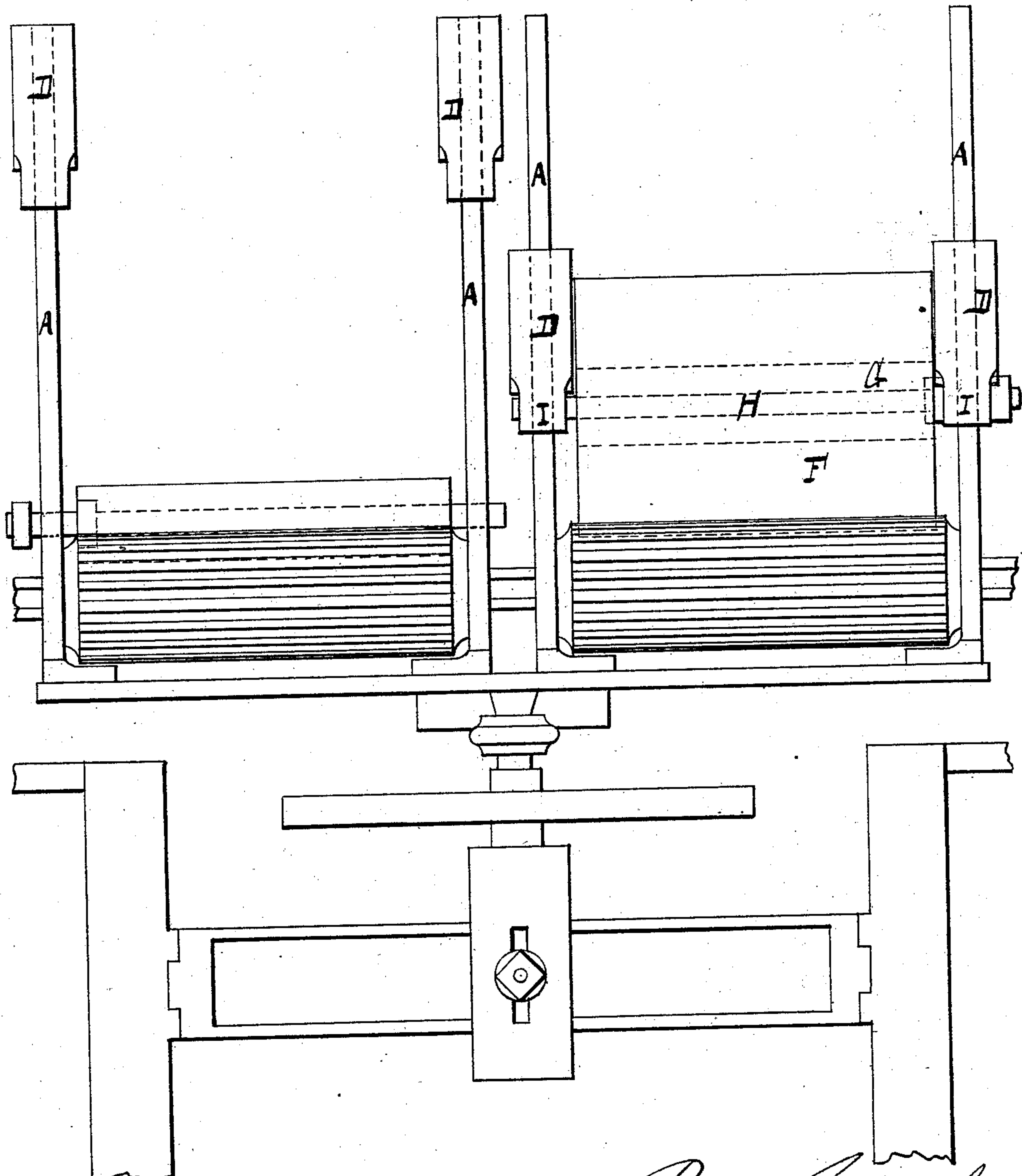
P. SMITH, Jr., S. AMBLER & J. LUND.

BALLING HEAD OF GILL BOXES OF COMBING MACHINES, &c.

No. 308,857.

Patented Dec. 2, 1884.

FIG 1



WITNESSES

Walter J. Turner

Samuel A. Dracup

INVENTORS

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Smith Ambler
Joseph Lund

(No Model.)

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FIG. 2

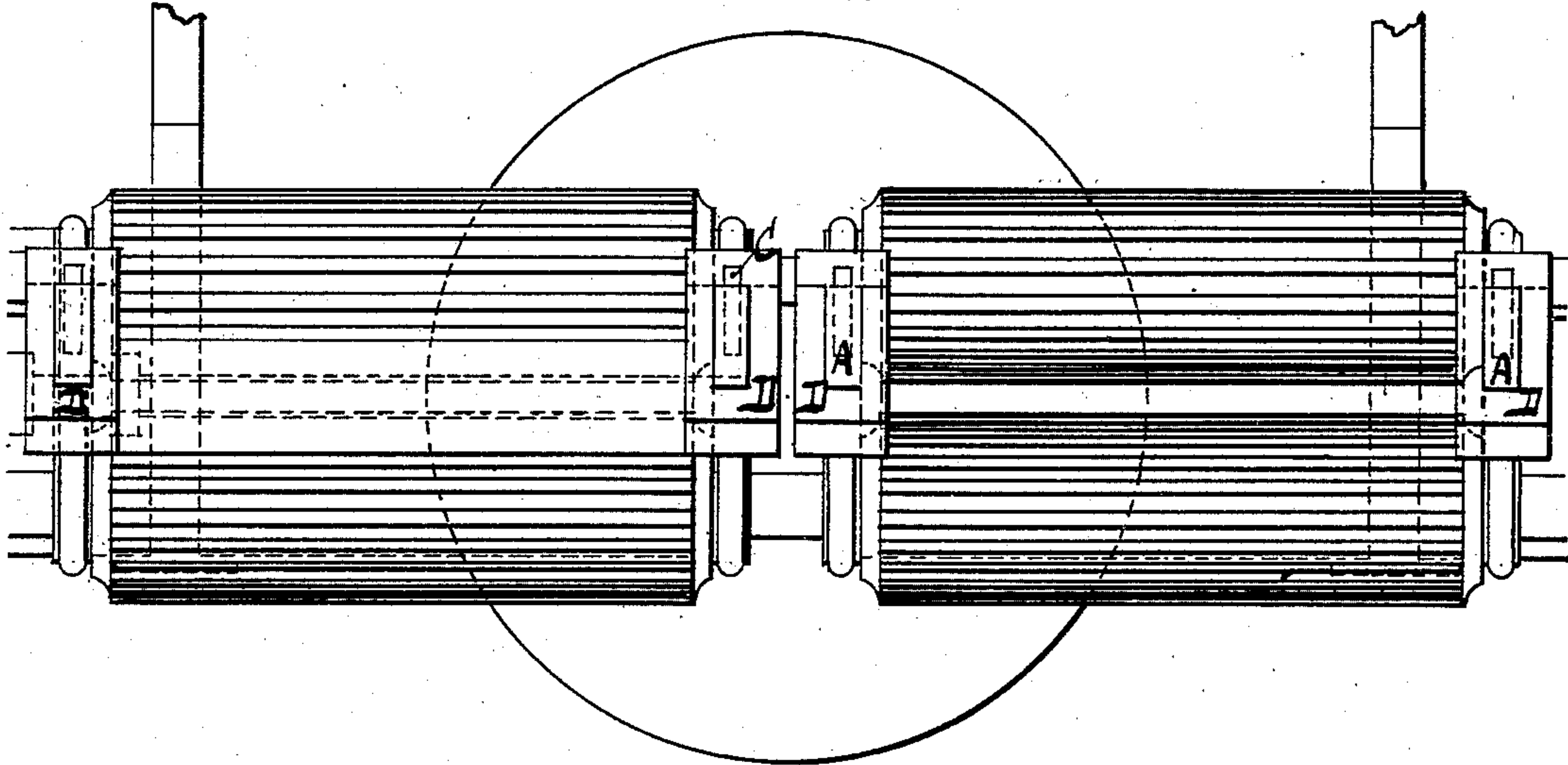
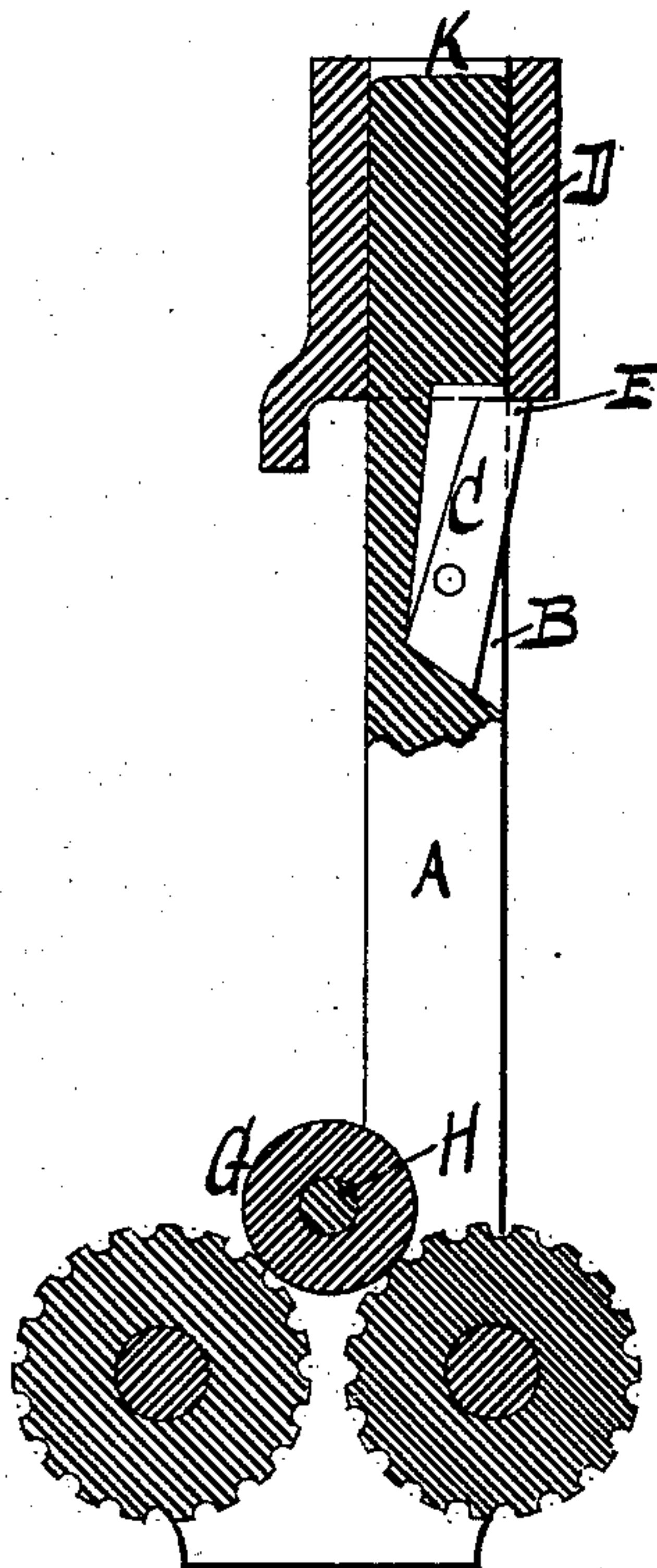


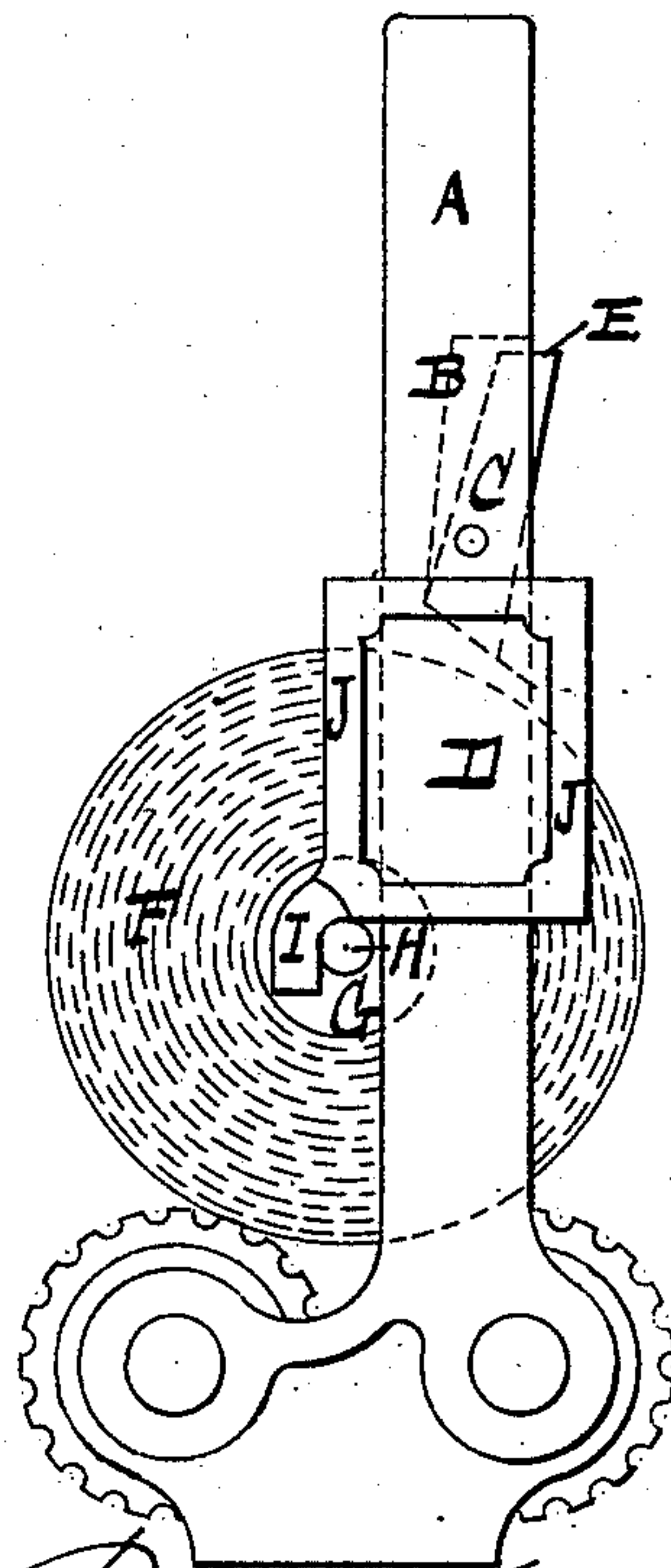
FIG. 4



WITNESSES

Walter Jas. Turner
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FIG. 3



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UNITED STATES PATENT OFFICE.

PRINCE SMITH, JR., SMITH AMBLER, AND JOSEPH LUND, OF BURLINGTON
SHED, KEIGHLEY, COUNTY OF YORK, ENGLAND.

BALLING-HEAD OF GILL-BOXES OF COMBING-MACHINES, &c.

SPECIFICATION forming part of Letters Patent No. 308,857, dated December 2, 1884.

Application filed June 28, 1883. (No model.) Patented in England May 22, 1883, No. 2,564.

To all whom it may concern:

Be it known that we, PRINCE SMITH, Jr., SMITH AMBLER, and JOSEPH LUND, subjects of the Queen of Great Britain, residing at Burlington Shed, Keighley, in the county of York, England, have invented new and useful Improvements in Balling-Heads of Gill-Boxes of Combing-Machines, &c., of which the following is a specification.

10 Our invention consists in improvements in the balling-heads of gill-boxes employed in the combing, carding, and drawing of wool and other fibrous substances, more fully hereinafter described, and specifically pointed out in the subjoined claim.

15 Hitherto the balling-heads of gill-boxes have been made with two stands working on horizontal bars, and having a pair of rollers between the stands. The ball is formed on the rollers, and to keep the ball sufficiently firm or hard in balling two weights are employed, which slide up and down between the stands and rest on the spindle or barrel of the roller. The weights gradually rise as the ball increases
25 in diameter, and have to be removed by the attendant when the ball is built, and replaced when a ball is to be formed; besides which, to remove a ball when formed, the attendant has to lift out of a groove or slot the spindle of the roller carrying the ball. This lifting up of the ball, which is heavy, and the removal of the weights and the replacing the same, are drawbacks in the working of the machines. By our improved plan the weights are adapted
35 to be moved up and down on standards, and when lifted up to be retained there while changing, and the formed ball can be removed without having to lift up the ball, it being simply necessary to bring the ball forward. For this purpose we secure in that part of the machine in which the ball is wound or formed on the rollers two standards or uprights, having recesses in the back parts, in which are fitted and work tongues so arranged that the
45 tops thereof fall a certain way out of the standards or uprights by their weight, and are so free in action that when the attendant lifts up the weights they force in the tongues, and when the weights are lifted past the tongues the tongues fall out and the weights rest upon

them, and are there retained until the built ball is removed and a balling barrel and spindle placed in position to form another ball. The attendant then simply presses in the tongues, and the weights come down in position. It is obvious that springs may be employed instead of tongues. The weights are by preference of a parallelogram shape, with ornamental projecting frames on the sides, which allow hold to the fingers of the attendant when lifting or lowering the weights, and the weights are made with lugs projecting downward, which rest on the collar of the spindle or on the spindle of the balling-barrel. The weights are made with openings to fit and work easily on the standards or uprights. To form a ball, the attendant lifts up the weights and places them on the tops of the tongues and keeps them there until a balling barrel and spindle are placed in position to form a ball. The tongues are then pressed into the recesses of the standards or uprights, and the weights lowered, bringing the lugs on the top of the spindle, giving pressure and holding down the ball during the operation of building up the ball. The weights rise gradually with the forming or building of the ball, and directly the ball is formed the weights are lifted over the tongues and brought on the top thereof, and there retained until the ball is removed by simply bringing it forward without having to lift it up.

In order to enable our improvements to be fully understood, we will proceed to describe the same by reference to the accompanying drawings, in which—

Figure 1, Sheet 1, represents a front view of the balling-head of a gill-box with our improved mode of pressing and holding down the balls during the operation of building or forming the balls. Fig. 2, Sheet 2, is a plan, and Fig. 3, Sheet 2, an end view, of the same. Fig. 4, Sheet 2, represents a section of the standard with recess and tongue, also section of weight, balling barrel and spindle, and section of fluted rollers.

Similar letters of reference are used to represent similar parts.

A are the standards or uprights, having recesses B, in which are fitted and work the

tongues C, so arranged that the upper ends thereof fall out of the recesses of the standards A by their weight, (see Fig. 4), and said tongues are so free in action that when the attendant lifts up the weights D they force the said upper ends of the tongues C into the recesses B, and when the weights D are lifted past the tongues the upper ends thereof fall out and the weights rest on the tops E, and are there retained until the built ball F is removed and a balling-barrel, G, having a spindle, H, is placed in position to form another ball.

To lower the weights D, the attendant simply presses in the tongues C, and the weights come in position, the lugs I, then resting on the top of the spindle H of the barrel, exerting pressure thereon and holding down the ball during the operation of building or forming the same. The weights D are made with projecting frames J, which allow hold to the fingers of the attendant when lifting or lowering the weights, and the weights are

made with openings K, to fit and easily work on the standards or uprights A.

Having thus particularly described and ascertained the nature of our said invention, and in what manner the same is to be performed or carried out in practice, what we claim is—

The combination, with the standards or uprights A, provided with recesses B, and with tongues C, pivoted in such recesses and arranged to drop forward at their tops when left free, of the sliding weights D, adapted to slide on such standards and over the tongues, and when lifted above the tops of the tongues to be retained in that position by such tongues, substantially as and for the purposes set forth.

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SMITH AMBLER.
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Witnesses:

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