

(No Model.)

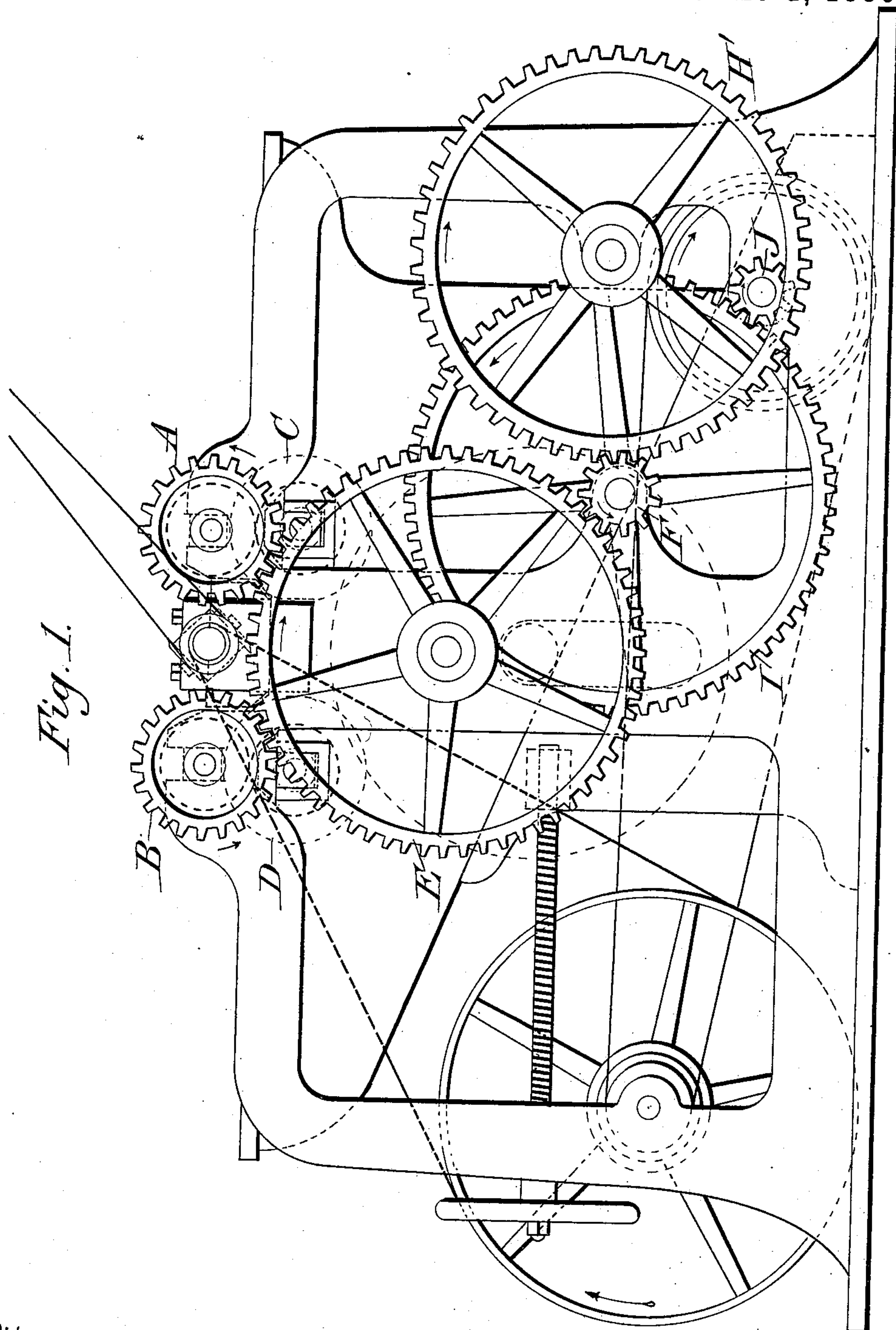
B. D. WHITNEY.

3 Sheets—Sheet 1.

GEARING.

No. 343,094.

Patented June 1, 1886.



Witnesses

*H. H. Schott*

*Fred E. Tasker*

Inventor

*Baxter D. Whitney*

By his Attorney

*John E. Tasker*

(No Model.)

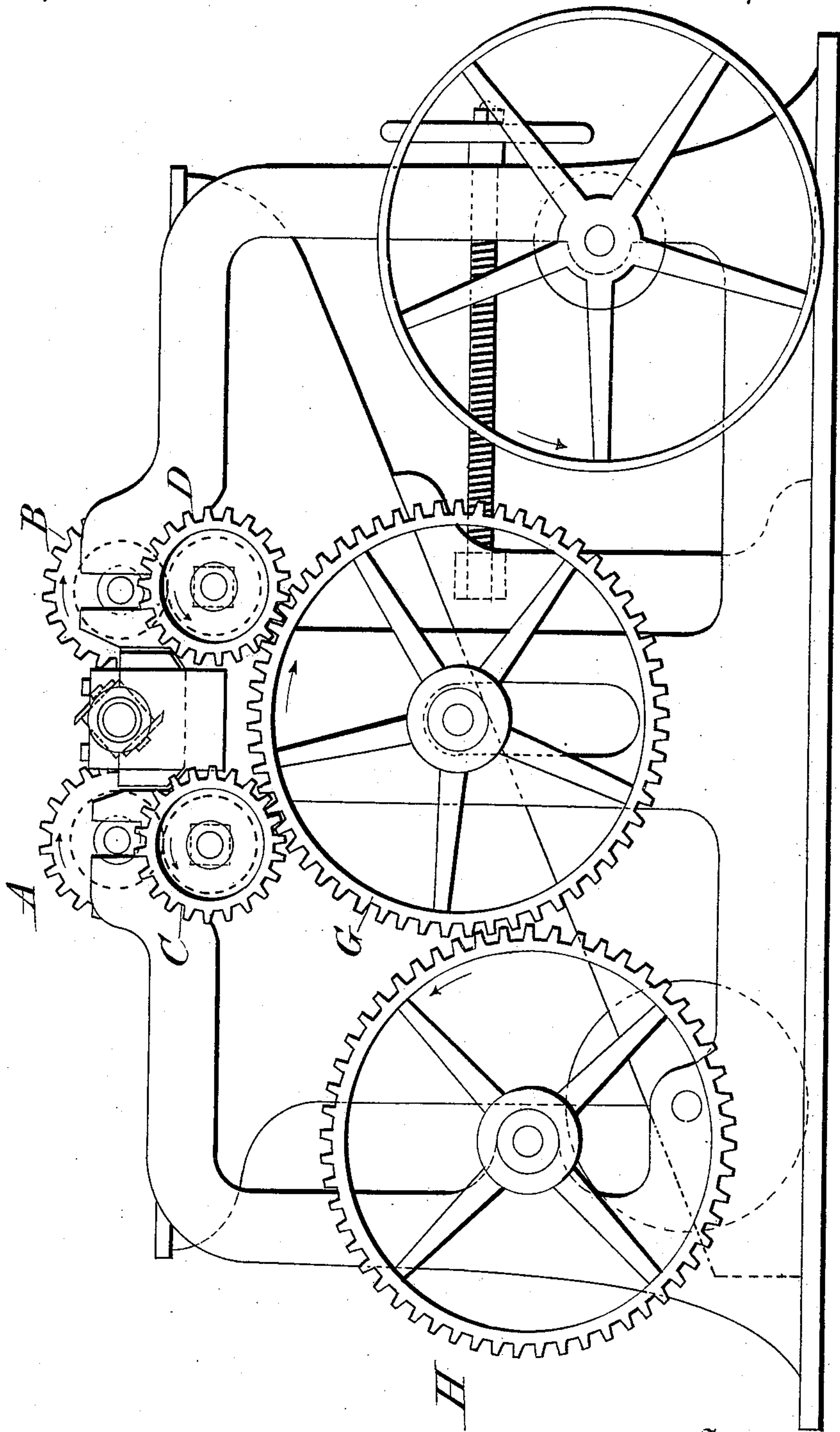
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Fig. 2.



Witnesses

J. H. Schott  
Fred E. Tasker.

Inventor

Barth D. Whitney  
By his Attorney John C. Tasker.

(No Model.)

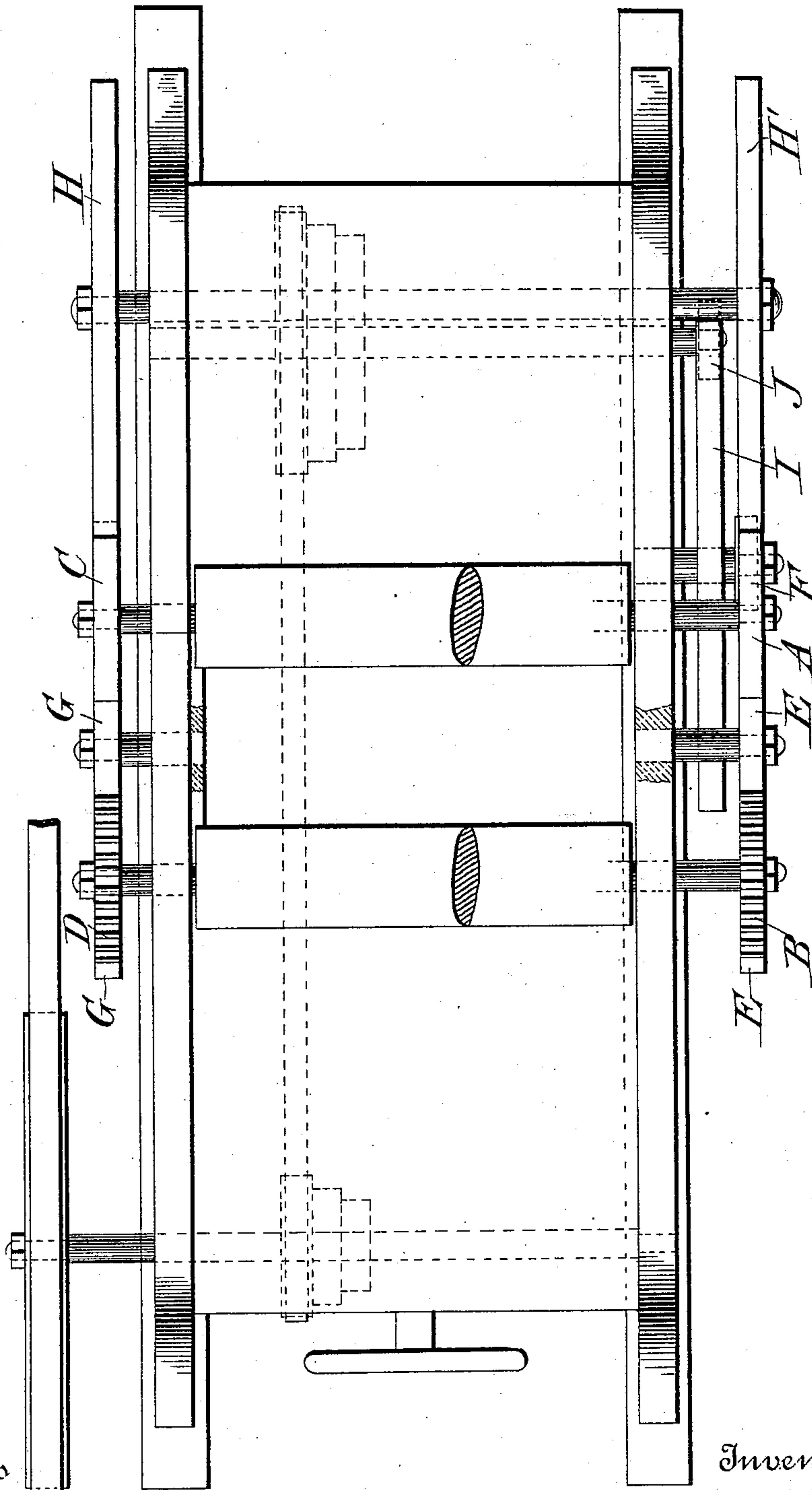
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Fig. 3.



Witnesses

*H. H. Schott*  
*Fred E. Tasker*

Inventor

*Baxter D. Whitney*  
By *his Attorney* *John C. Tasker*



# UNITED STATES PATENT OFFICE.

BAXTER D. WHITNEY, OF WINCHENDON, MASSACHUSETTS.

## GEARING.

SPECIFICATION forming part of Letters Patent No. 343,094, dated June 1, 1886.

Application filed January 30, 1886. Serial No. 190,295. (No model.)

*To all whom it may concern:*

Be it known that I, BAXTER D. WHITNEY, a citizen of the United States, residing at Winchendon, in the county of Worcester and State of Massachusetts, have invented certain new and useful Improvements in Gearing; and I do declare the following to be a full, clear, 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, reference being had to the accompanying drawings, and to the letters and figures of reference marked thereon, which form a part of this specification.

This invention relates to mechanism for transmitting motion and power from a single revolving shaft or gear-wheel to a series of shafts or rollers, as used for feeding lumber or other material in machines for planing, jointing, matching, polishing, and sawing, or other analogous purposes.

It consists of a system or combination and arrangement of gearing designed to operate a series of four rollers set in two pairs, with one roll of each pair over the other, so that two rollers will contract with and act upon the upper side and two engage with the under side of a board or other article to give the same a rectilinear movement, and to be susceptible of adjustment for the transmission of articles of different thicknesses.

In the accompanying drawings, making a part of this specification, the system of gearing is shown as applied to a cylinder planing-machine, in which the lower rollers are mounted in a table or bed-piece which is vertically adjustable to suit the thickness of lumber to be planed, for which use it is especially designed and applicable, although it is useful for other purposes.

Figure 1 of the drawings is an elevation of one side of the machine, showing the gears connected with the upper rollers. Fig. 2 is a similar view of the opposite side and gears connected with the lower rollers. Fig. 3 is a top view of the machine, showing the position of gearing upon each side of same.

Similar letters refer to like parts.

A and B represent two spur-gears, affixed to the shaft of the upper feed-rolls. C and D are two similar gears on the shaft of the lower rollers, which, to give a coincident motion to

the surfaces of the rolls as they engage with the board, must revolve in a reverse direction to the gears A B. Directly beneath the gears A B is a comparatively large spur-wheel, E, mounted upon a stud or post permanently attached to the frame of the machine, so that it engages with them and with a driving-pinion, F, (which is the prime mover of the system,) from which it communicates motion to gears A B, to actuate the rolls to which they are attached.

G is another wheel, similar to E, located just below C and D, connecting them with another large gear, H, which is connected to another similar wheel, H', engaging with the pinion F, from which it receives motion which is transmitted to C and D, to operate the lower rollers.

By the interposition of wheels H between F and G the moving force is not only transferred from one line of gears to the other, but the course of their revolution is reversed, so that the acting surfaces of the rollers travel in the same direction.

The wheel G is mounted on a stud or post set in a bed-piece (or adjustable part of the machine) which carries the lower rollers, so that it rises and falls with them as they are set for stuff of different thicknesses. The wheel H is located so that its axis will be in a horizontal plane with that of G when the latter is in a central position of vertical adjustment, so that the maximum range of movement may be had within the limits of their engagement on lines of vertical tangents to their pitch-circles, for which purpose wheels of a large diameter and moderate curvature of rim are manifestly superior to those of less diameter and more rapid departure of their pitch-circles from a right line; and it is for this reason that I have planned to have the wheels H and G of comparatively large diameters, so that I can make the machines to which they are applied of greater or more varied capacity in their work than by other systems which I have heretofore designed and employed, and which for certain purposes may be useful and have their incident advantages of form and arrangement.

The pinion F, which, as shown, is set to run loosely on a pin or stud attached to the frame, is the actuating-gear of the system, be-



ing placed to engage with E, on the one hand, and through its train to drive the upper rollers, and with H', on the other hand, and transmit motion through that train to the lower rolls.

5 I is a gear-wheel affixed to pinion F, to receive motion from a pinion, J, which may be driven by band-wheels and belts from the main shaft of machine, or by any other suitable means, which it is unnecessary to describe particularly, as such means are not material to my invention, and the gears I and J are not included in the system which forms the base of my claim for a patentable invention.

15 The principal advantages of this system of gearing are simplicity, directness of transmission, and correctness of application of the motive force to the roll-gears in a horizontal direction, thus avoiding the variableness of pressure from side-thrusts incident to applications with a vertical bearing. Although  
20 not so compact in form as some other systems, it is especially advantageous for the facilities

afforded by the application and arrangement of the large wheels G and H for the greater range of vertical adjustment and consequent applicability to a more varied line of work of different thicknesses, which is for some purposes an important consideration.

Having thus fully described the construction and operation of this improved system of gearing, I claim and desire to secure by Letters Patent—

The combination of the four roller-gears A B C D, intermediate wheels, E and G, transferring and reversing wheels H and H', and pinion F, constructed, arranged, and operating substantially as set forth, and for the purpose specified.

In testimony whereof I affix my signature in presence of two witnesses.

BAXTER D. WHITNEY.

Witnesses:

FRED E. TASKER,  
E. L. WHITE.