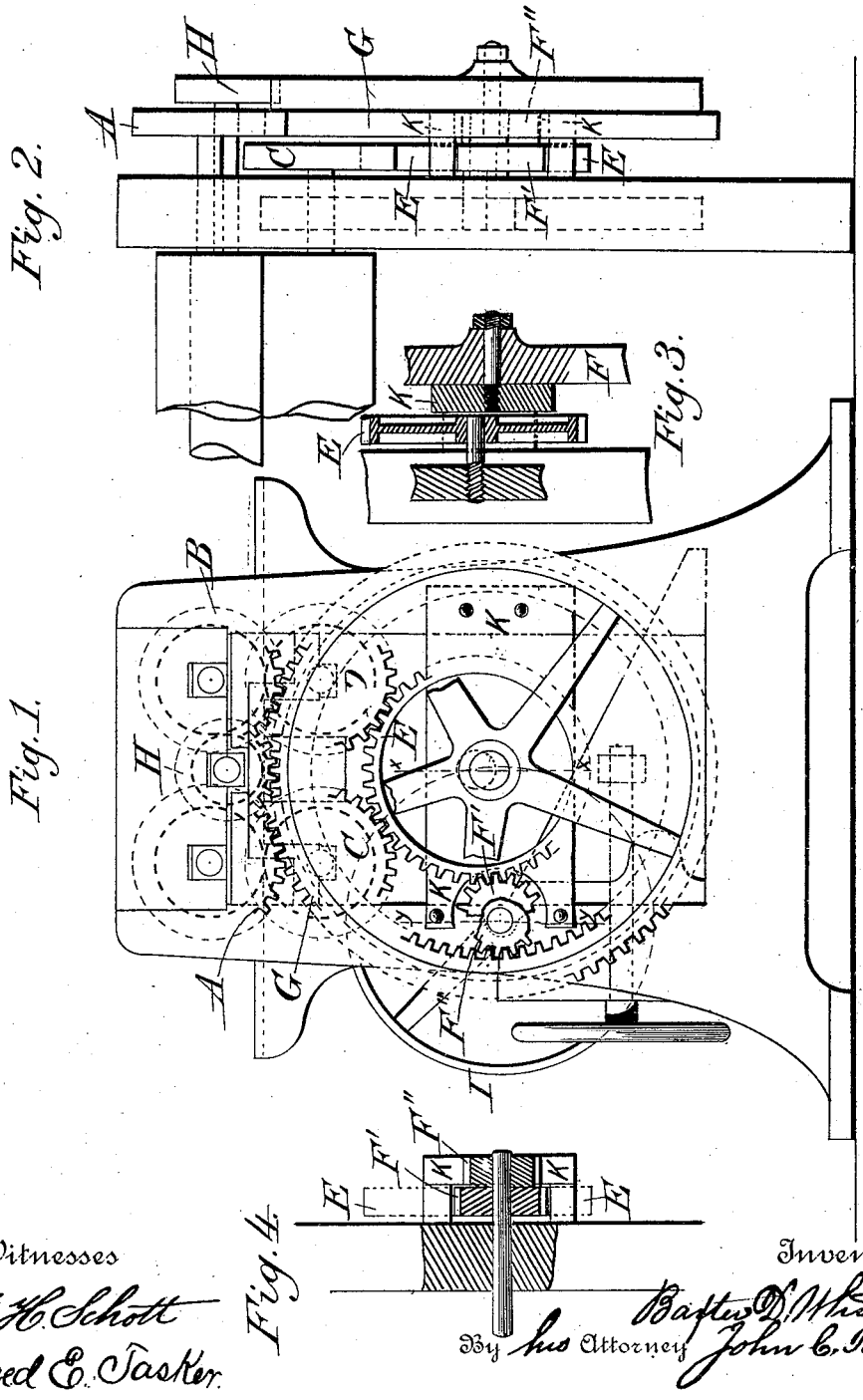
(No Model.)

B. D. WHITNEY.

GEARING.

No. 343,352. Patented June 8, 1886.



Witnesses

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GEARING.

SPECIFICATION forming part of Letters Patent No. 343,352, dated June 8, 1886.

Application filed January 30, 1886. Serial No. 190,297. (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 wheel to a series of shafts or rollers as used for feeding lumber or other material in machines for planing, sawing, or other analogous purposes. It consists of a system or combination and arrangement of gear-wheels designed to operate a set of four or five feeding-rollers as set in position to act on two sides of a board or plank or other article, to give the same a rectilinear movement, four of said rollers being set in two pairs, with one of each pair directly over the other, while the fifth occupies a central position between the upper rollers of the two pairs, so that three of the rolls make a line to act upon the upper surface of the board or other article carried by them, and the other two have contact and action with the under side, which two last mentioned are arranged to have a vertical adjustment for articles of different thickness.

In the accompanying drawings, making a part of this specification, the system is shown as applied to a machine for dressing lumber, Figure 1 being a side elevation of the machine and showing the general plan of the system. Fig. 2 is a view of the gears and part of the machine, looking from a standpoint in front of same. Fig. 3 is a transverse vertical section on line *x x* of Fig. 1. Fig. 4 is a transverse vertical section on line *y y* of Fig. 1.

A and B designate spur-wheels affixed to shafts of the upper rollers of the two pairs. C and D are similar wheels on the shafts of the lower rollers. These, in order to have the largest practicable diameter, have shunt or offset alignments, so that as the lower rolls approach closely to the upper one the wheels C and D will shut by the inner side of A and B.

E is an intermediate wheel mounted upon a shaft or spindle held by the vertically-adjustable bed or part of the machine which carries the lower rollers so as to rise and fall with them. It engages with and imparts motion to C and D of the lower rollers from a pinion, F′, which is set in a position to be in the horizontal plane of a central vertical adjustment of E, which allows the greatest range of rise and fall without disengagement of gears.

G is another intermediate wheel of peculiar construction. It is mounted upon a pin or stud affixed to a plate, K, which is attached to the frame and extends across outside of wheel E. Upon the external face of G is a set of cogs, which engage with gears A and B, to operate the rolls to which they attach. Another section connects with a gear, H, of the central upper roll, which projects beyond and laps by A and B in another alignment, while a set of teeth on its internal face meshes with the pinion F² and completes the train for driving the upper rolls. The pinion F has two parts proportionate in their diameters to the external and internal diameter of the wheel G, so that the velocity of the rolls may agree. It extends through a recess in plate K to mate with the wheels E and G in their different alignments, and is mounted on a shaft supported by the frame of the machine. It is represented as having at its farther end a pulley, I, for a belt to furnish the motive power, which is a very desirable method of operating the system of gearing, as the connection is very direct to all parts; but it may be driven by a pinion working in the external teeth of wheel G and transmitted through E, as an intermediate wheel, or in other ways which would not change the general plan of the system. The central roll as here applied is somewhat smaller than the others, which is convenient and favorable to a compact arrangement of parts, and the relative proportions of its gears H and the sections of G, with which it mates, must be such as will give requisite velocity of roll-surface; or for purposes where the central roll is not required it may be left out of the construc-

tion, in which case the system is left complete for operating four rollers. This arrangement is compact and well suited for purposes within its range of vertical adjustment. Its operation is very simple, as when the motive power is applied to pinions F it is transmitted through intermediates E and G to the series of rollers, revolving them in the right direction to make their contacting surfaces travel in the same course. The action is very direct and the moving force is applied to each of the rolls in a horizontal direction, thus avoiding the abnormal action of a vertical side-thrust upon the rolls, as more fully explained in my specification of another system, for which I have also filed an application for Letters Patent.

Having described the construction and application of this system of gearing, I claim and desire to secure by Letters Patent—

1. The combination of a series of five driven gears, A, B, C, D, and H, with the internal and external faced gear, G, intermediate E, and pinion F, constructed and arranged as herein shown and described, and for the purpose set forth.

2. The combination of the internal and external faced gear, G, the intermediate E, pinions F' and F^2 on the same shaft, said pinion F' engaging the intermediate, and said pinion F^2 engaging the internal, cogs of wheel G, and the series of four roll gears, A B C D, arranged and operated substantially as described.

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

BAXTER D. WHITNEY.

Witnesses:

FRED. E. TASKER,

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