(No Model.)

J. N. WISE.

EXPANSION GEAR FOR ROLLS.

No. 429,331. Patented June 3, 1890.

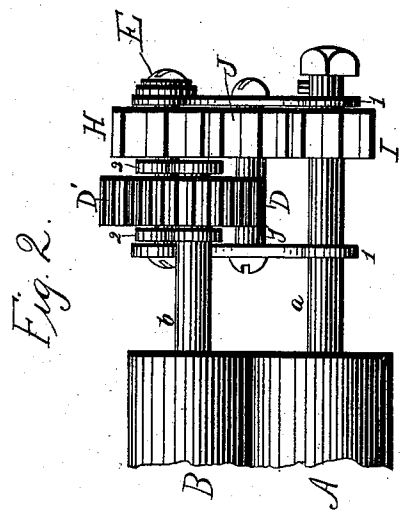

Fig. 2.

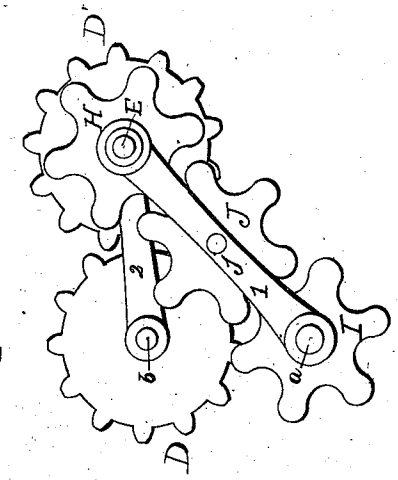

Fig. 4.

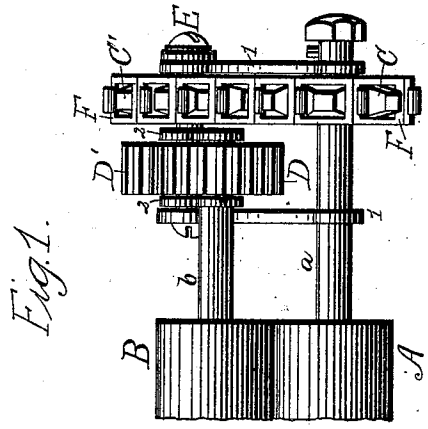

Fig. 1.

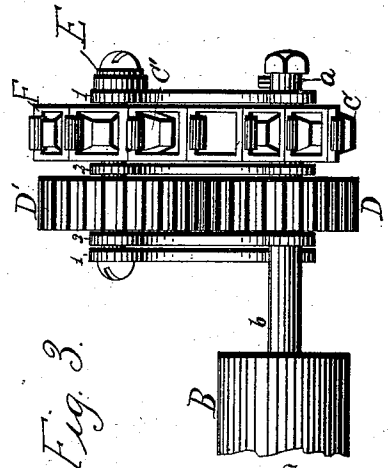

Fig. 3.

Witnesses

F. K. Holmes

Wm. H. J. Brereton

Inventor

Joseph N. Wise

By his Attorney

J. W. Tallmadge

UNITED STATES PATENT OFFICE.

JOSEPH N. WISE, OF NORWALK, OHIO.

EXPANSION-GEAR FOR ROLLS.

SPECIFICATION forming part of Letters Patent No. 429,331, dated June 3, 1890.

Application filed December 10, 1889. Serial No. 333,234. (No model.)

To all whom it may concern:

Be it known that I, JOSEPH N. WISE, a citizen of the United States, residing at Norwalk, in the county of Huron and State of Ohio, have invented a new and useful Improvement in Expansion-Gear for Rolls, of which the following is a specification.

My invention has relation to improvements in expansion-gear for use on wood-planers, wringers, and all other machines wherein a system of feed-rolls is employed; and it consists in certain details of construction and arrangements of the parts composing the same, as and for the purposes as will be hereinafter more fully explained, and form the subject-matter of the annexed claim.

The object of this invention is to provide a simple and effective means whereby the mechanism employed to communicate movement from the lower roll to the upper roll in rolling-mills, wringers, planers, &c., is supported and held in proper position relatively to said rolls, so that while they will at all times be in positive connection, yet said rolls will be permitted to adapt themselves to articles passing between them.

In carrying out my invention I proceed as follows, reference being had to the accompanying drawings, forming part hereof, where—

Figures 1 and 2 are views in side elevation of a portion of two feed-rolls having expansion-gear arranged according to my invention; and Fig. 3 is a plan, and Fig. 4 an end elevation, of the same.

In Figs. 1 and 3 sprocket-wheels and chain-connection are employed between the shaft of lower roll and intermediate shaft, while in Figs. 2 and 4 gear-connection is used. Otherwise the parts shown in the several figures of the drawings are the same.

The letters A B indicate the rolls, and *a b* the shafts thereof. In Figs. 1 and 3, upon the driving-shaft *a* is keyed a sprocket-wheel C, and upon the shaft *b* is keyed a gear-wheel D.

E is a short intermediate shaft situated slightly above and to one side of the top shaft *b*, and so held by four brackets, two of which, as at 1 1, extend from the lower shaft *a*, and the other two 2 2 extending from the top shaft *b*. Upon this shaft E is keyed a sprocket-wheel C′, that is connected by chain F with the sprocket-wheel C on shaft *a*, and a gear-wheel D′, that meshes with the gear-wheel D on the top shaft *b*. Movement being imparted to the shaft *a* will therefore be communicated to the shaft *b* through the instrumentalities of sprocket-wheels C C′, chain F, shaft E, and gear-wheels D D′, and by reason of the intermediate shaft E being suspended by the yokes or brackets 1 1 and 2 2 the top roll will have a vertical movement and continue in positive connection with the driving-shaft, so that said rolls will adjust themselves to articles of various thicknesses that may be introduced between them.

The two brackets 1 1, that extend from the intermediate shaft to the shaft of the lower roll, support said intermediate shaft in its elevated position, while the brackets 2 2 hold the intermediate shaft in its proper position relative to the shaft of the top roll.

Instead of the sprocket-wheels and chain for connecting the drive-shaft with the top shaft, as shown in Figs. 1 and 3, pulleys with band, belt, or cable may be substituted therefor; or, as shown in Figs. 2 and 4, cog-wheels may be placed on the drive-shaft *a* and intermediate shaft E, as at H and I, instead of the sprocket-wheels C C′ shown in Figs. 1 and 3, which cog-wheels are connected by an idler J on a shaft *j*, that has its bearings in the brackets 1 1, whereby movement from the drive-shaft will be imparted to the intermediate shaft, and through it to the shaft of the top roll, the same as were the sprocket-wheels and chain employed.

Having thus fully described my invention, what I claim as new therein, and desire to secure by Letters Patent of the United States, is as follows, to wit:

The combination, with the shaft *a* of the stationary roll A and shaft *b* of movable roll B, of the short intermediate shaft E, gear-wheel D on shaft *b*, gear-wheel D′ on intermediate shaft E, brackets 1 1, extending from the extremities of intermediate shaft E to the shaft *a*, brackets 2 2, extending from intermediate shaft E to shaft *b*, adjacent the gear-wheels D D′, and means, substantially such as described, for communicating direct movement from shaft *a* to intermediate shaft E, for the purposes specified.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

JOSEPH N. WISE.

Witnesses:
S. F. NELSON,
O. W. WILLIAMS.