

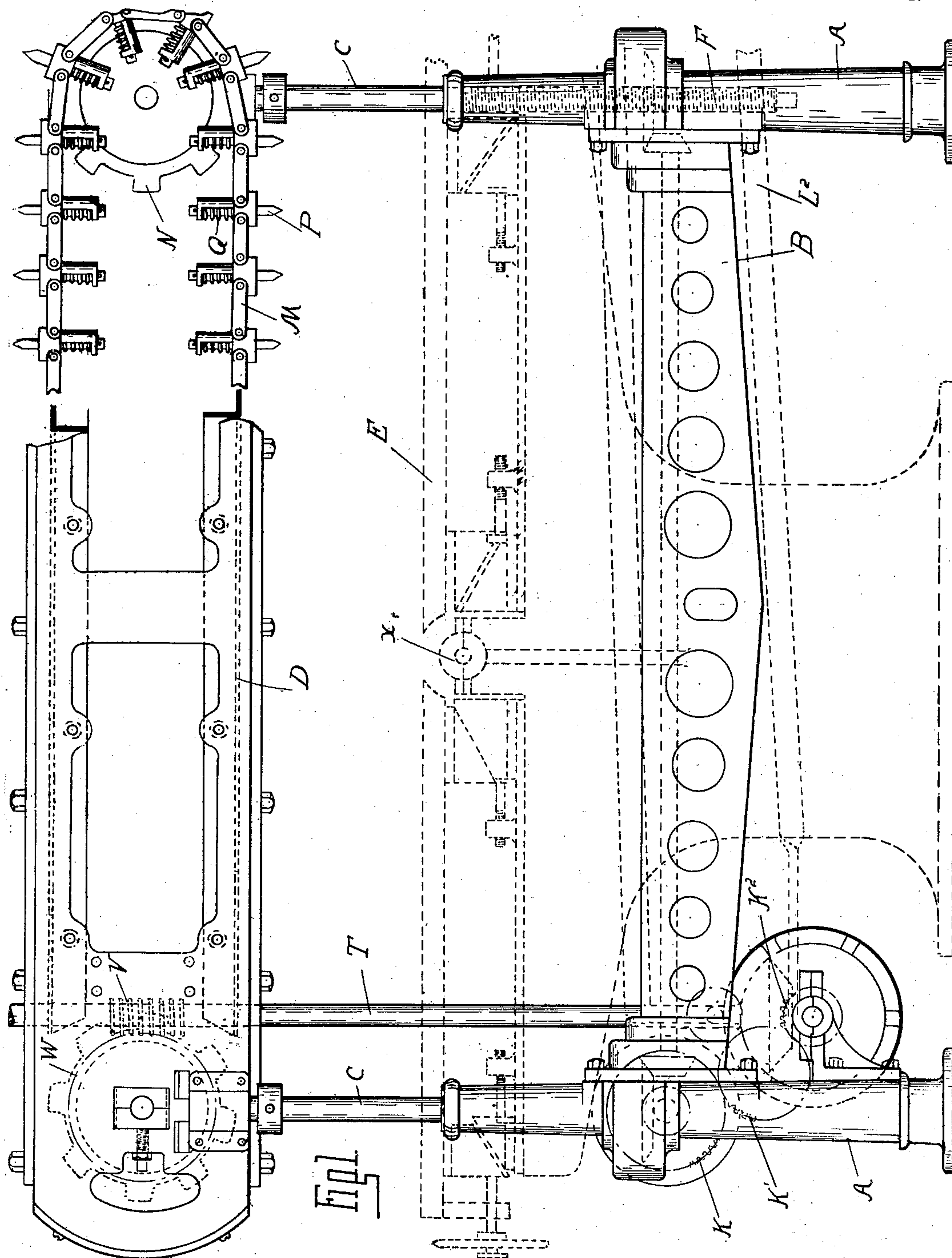
JOINTER.

APPLICATION FILED FEB. 15, 1908.

Patented Apr. 27, 1909.

3 SHEETS—SHEET 1.

919,351.



Witnesses

W. K. Ford
James P. Barry

Inventor

John Herzog

John Herzog.
By ~~William~~ ~~Hall~~ ~~William~~
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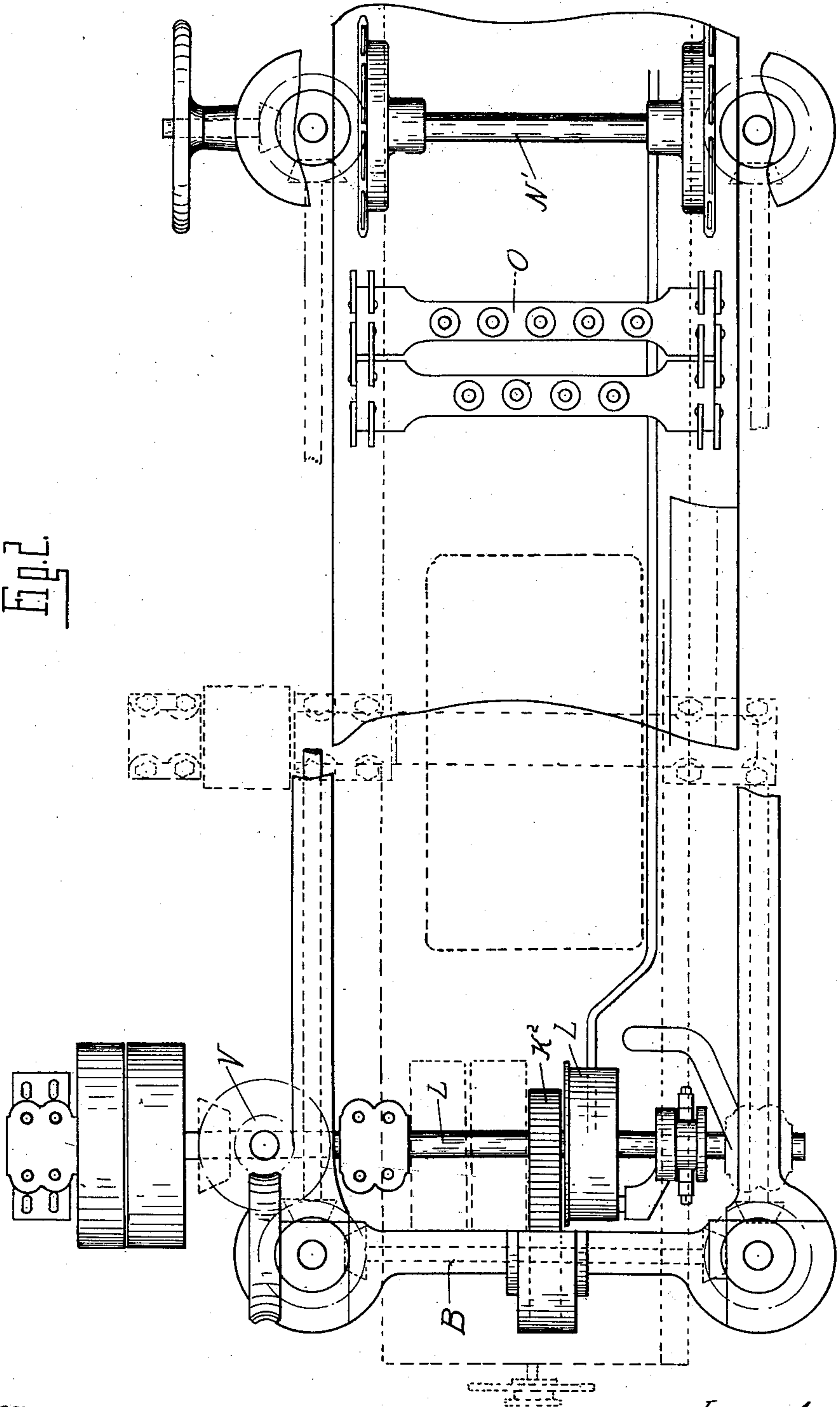
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3 SHEETS—SHEET 3.

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UNITED STATES PATENT OFFICE.

JOHN HERZOG, OF SAGINAW, MICHIGAN.

JOINTER.

No. 919,351.

Specification of Letters Patent.

Patented April 27, 1909.

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To all whom it may concern:

Be it known that I, JOHN HERZOG, a citizen of the United States of America, residing at Saginaw, in the county of Saginaw and State of Michigan, have invented certain new and useful Improvements in Jointers, of which the following is a specification, reference being had therein to the accompanying drawings.

The invention relates to that type of wood planing machines known as jointers, and it is the primary object of the invention to provide automatic mechanism for feeding the work to the revolving cutters thereby avoiding the danger incident to the hand-feeding operation.

It is a further object to provide mechanism which will feed the strips with a slight pressure thereon which would not tend to bend or spring the board from its natural shape, so that when completed the planed surface will be perfectly straight.

With these objects in view, the invention consists in certain features of construction as hereinafter set forth.

In the drawings—Figure 1 is a side elevation, partly in section, of my improved work-feeding mechanism indicating the jointer proper in dotted lines; Fig. 2 is a plan view thereof; Fig. 3 is an end elevation; and Fig. 4 is a fragmentary vertical section of one of the cross bars.

My improved feed mechanism is applicable to any construction of jointer, and may be mounted either upon the same or an entirely distinct frame work. As illustrated in the drawings, the mechanism is mounted upon a separate frame which surrounds the main frame of the jointer, and comprises four posts A connected by longitudinal and cross bars B B. Each of the posts A is hollow and has in engagement therewith a telescopic extension member C, these members being connected at their upper ends with a frame D which extends across between the posts and above the bed of the jointer indicated in dotted lines at E. The extension members C may be raised or lowered in the posts A by suitable mechanism which, as shown, consists of threaded nuts F engaging threaded portions of the members C, and supported upon end thrust bearings G in the posts. The nuts F are secured to or formed integral with bevel gear wheels H which mesh with bevel pinions I upon shafts J. These shafts are simultaneously driven at

corresponding speed by a suitable gear train, such as the gear wheels K K' K² from the main drive shaft L journaled in bearings upon the frame. A clutch L' is interposed between the gear wheel K² and the shaft L and is controlled by a lever or rod L², the arrangement being such that at any time the gear train may be thrown into operation to raise or lower the members C and the frame D mounted thereon.

The feed mechanism is mounted upon the frame D and is adjustable therewith toward or from the bed of the jointer to accommodate different thicknesses of work and to sharpen the knives. As shown, this feed mechanism consists of an endless chain M engaging sprockets N upon cross shafts N' at opposite ends of the frame D. The chain M is formed of parallel chain members engaging the sprockets and a series of cross bars O to which the work feeding devices are secured. These work feeding devices preferably consist of fingers or sharpened pins P which slidably engage sockets P' in the cross bar, and are yieldably pressed downward by springs Q. The tension of these springs is only sufficient to engage the points of the fingers P with the upper surface of the board to be fitted without in any way springing the board from its natural shape. At the same time, the large number of fingers that are simultaneously engaged with the same board will exert a sufficient driving force to feed the work across the bed of the jointer.

The endless feed chain M is driven from the shaft L through intermediate mechanism which will permit of vertical adjustment of the frame D. This, as shown, consists of bevel gear wheels R and S respectively upon the shaft L and upon a vertical shaft T, which latter is arranged adjacent to one of the posts A. The upper end of this shaft is journaled in bearings U on a frame D, and intermediate these bearings is a worm V, which is splined upon the shaft T so as to be vertically adjustable but rotatively fixed thereto. The worm V meshes with a worm gear W upon one of the shafts N' and thus motion is transmitted from the shaft L to the chain M.

The construction being as described in operation, the frame D is first adjusted to the proper height above the bed by the operation of the raising and lowering mechanism above described. When properly positioned, the work is fed onto the bed of the jointer

at one end thereof and will be engaged by the fingers P of the chain M which carries it forward and across the rotary cutter X. After the engagement of the forward end of each board with the feed mechanism, the remainder of the operation is automatic, and therefore no skilled labor is required, nor is there any danger to the workman. At the same time, each board, while it is fed, is held from rocking movement by the fingers P, and thus the work is more satisfactorily performed than by hand feed.

It frequently happens that a board is so badly bent or twisted as to require several cuts to complete its straightening. I have therefore made use of the upper portion of the chain M as a return conveyer upon which any strips which need another cut may be placed, and will be carried back to the feed end.

What I claim as my invention is:

1. The combination with a bed and a rotary cutter projecting upward therethrough, of an endless work carrier positioned above said bed, comprising a series of cross bars and a plurality of yieldable fingers arranged longitudinally of each cross bar, said fingers being so positioned and arranged as to conform to the lateral and longitudinal contour of the work.

2. The combination with a bed and a rotary cutter projecting upward therethrough, of an endless work carrier for feeding the work over said table and holding the same in engagement with the cutter comprising cross bars and a plurality of yieldable bearings arranged longitudinally of each cross bar, slidably engaging the same, and adapted to conform to the lateral and longitudinal contour of the work.

3. The combination with a bed and a rotary cutter projecting upwardly there-

through, of an endless work carrier for feeding the work over said table and holding the same in engagement with the cutter composed of a series of cross bars and a plurality of spring-pressed fingers arranged longitudinally of each cross bar, and adapted to conform to the lateral and longitudinal contour of the work, each of said spring-pressed fingers comprising a vertical member projecting on both sides of the cross bar, a spring encircling said vertical member, and a housing for said spring.

4. The combination with a jointer, of an endless work carrier comprising a series of cross bars and a plurality of fingers arranged longitudinally of each cross bar and projecting into engagement with the work, each of said fingers comprising a vertical member projecting on both sides of the cross bar, a spring encircling said vertical member, a bearing on the latter for the spring adapted to engage the cross bar and limit the outward movement of the vertical member, and a housing for said spring.

5. The combination with a bed, and a rotary cutter projecting upwardly therethrough, of adjustable standards projecting upwardly from said bed, an endless work carrier supported on said standards for feeding and holding the work in engagement with the cutter, said carrier comprising a series of cross bars and a plurality of yieldable fingers arranged longitudinally of each cross bar and adapted to conform to the lateral and longitudinal contour of the work.

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

JOHN HERZOG.

Witnesses:

THEO. F. GAENSBAUER,
JOHN F. KESSEL.