

No. 677,721.

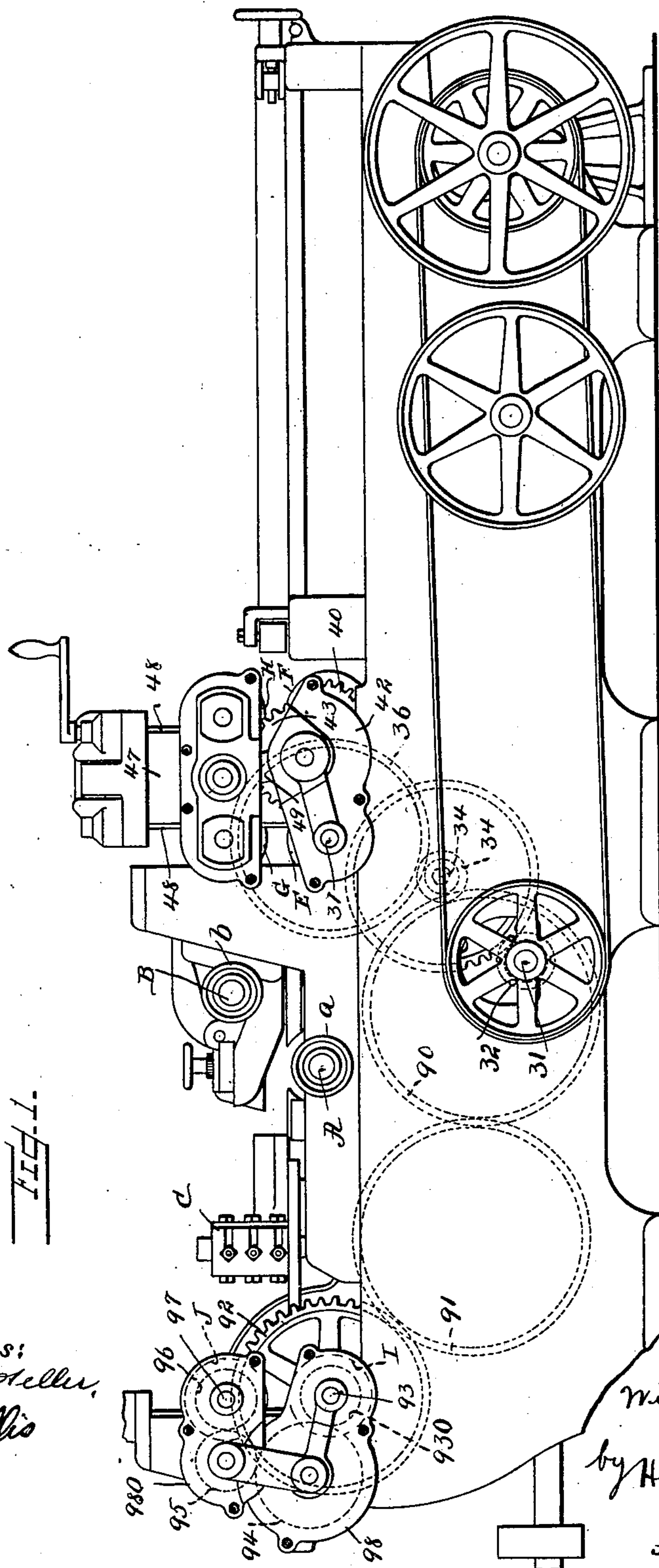
Patented July 2, 1901.

W. O. VIVARTTAS.
FLOORING MACHINE.

(Application filed Mar. 16, 1901.)

(No Model.)

3 Sheets—Sheet 1.



Witnesses:
Jesse B. Steller,
M. & E. Ellis

Inventor:
William O. Vivartas
by Harding & Harding
Attorneys.

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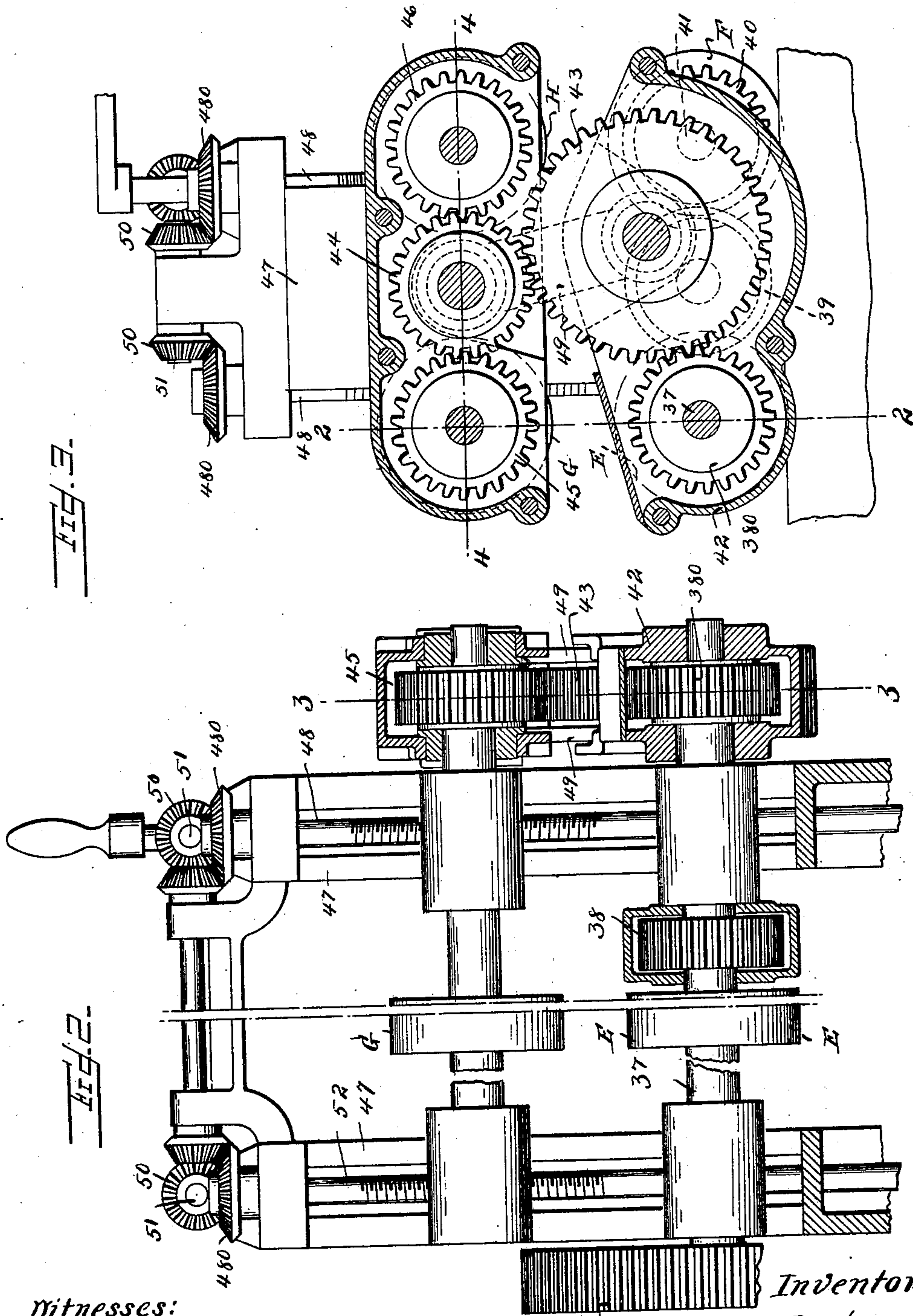
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Jesse B. Heller,
M. H. Ellis

Inventor:

William O. Vivarttas
by Harding & Harding
Attorneys.

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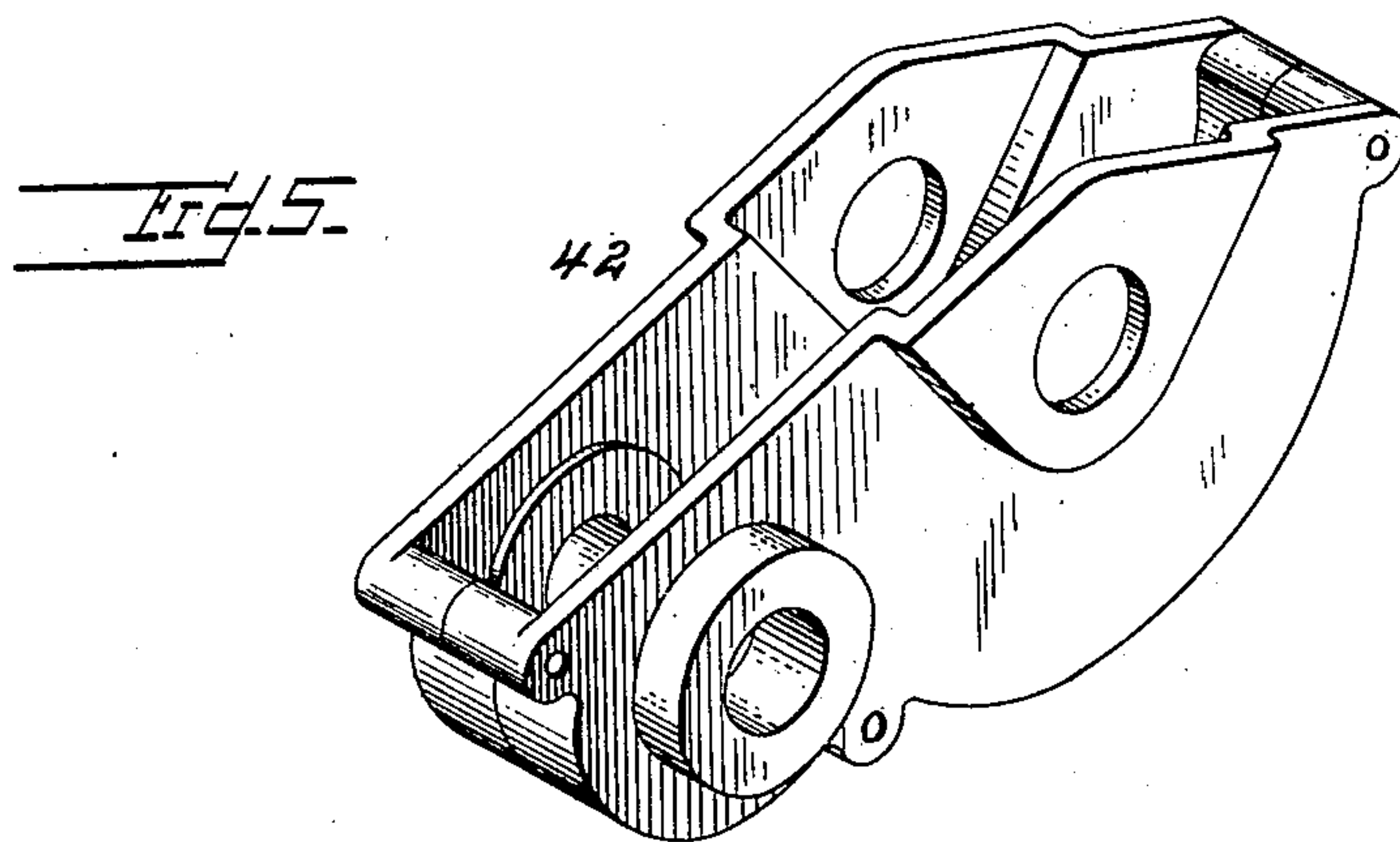
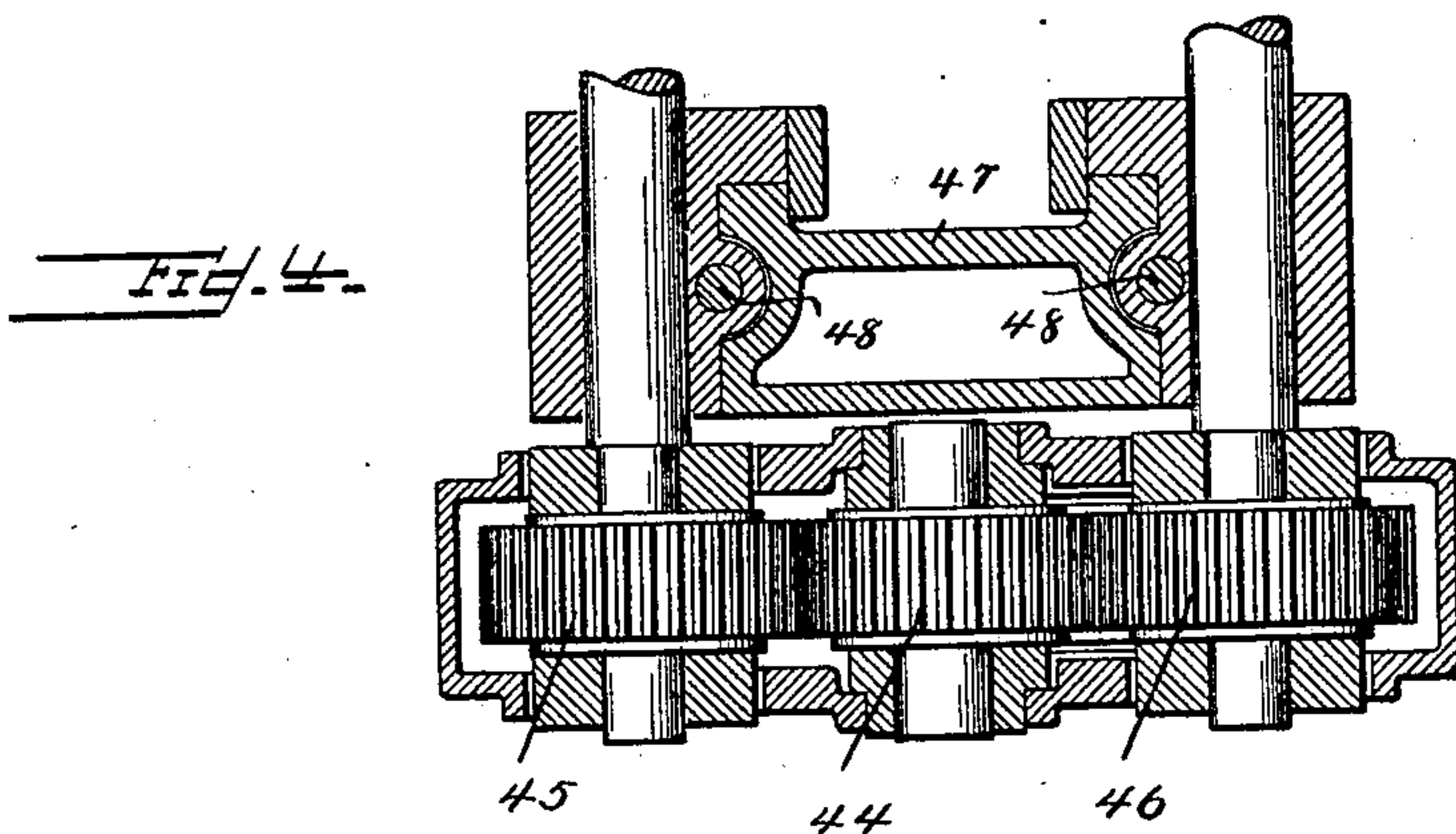
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Jesse B. Steller,
M. J. Ellis

Inventor:

William O. Vivarttas
by Harding & Harding
Attorneys

UNITED STATES PATENT OFFICE.

WILLIAM O. VIVARTTAS, OF WEEHAWKEN, NEW JERSEY, ASSIGNOR TO
H. B. SMITH MACHINE COMPANY, OF SMITHVILLE, NEW JERSEY.

FLOORING-MACHINE.

SPECIFICATION forming part of Letters Patent No. 677,721, dated July 2, 1901.

Original application filed December 13, 1900, Serial No. 39,799. Divided and this application filed March 16, 1901. Serial No. 51,467. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM O. VIVARTTAS, a citizen of the United States, residing at Weehawken, county of Hudson, and State of New Jersey, have invented a new and useful Improvement in Flooring-Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, which form a part of this specification.

My invention relates to woodworking-machines, and particularly to machines for planing and grooving floor-boards and molding-boards generally.

The invention consists in novel means for preventing the shafts for driving the adjustable infeed and outfeed feed-rollers from twisting with relation to each other during the adjustment of the same—a defect in machines of this character which is a source of constant trouble.

Figure 1 is a side elevation showing the principal parts, excluding the driving mechanism, of a machine of the character mentioned. Fig. 2 is a section on line 2 2 of Fig. 3. Fig. 3 is a section on line 3 3 of Fig. 2. Fig. 4 is a section on line 4 4 of Fig. 3. Fig. 5 is a perspective view of the casing.

A and B are the lower and upper cutter-head shafts, and *a* and *b* their driving-pulleys, respectively.

C represents the side cutter-heads, only one of them showing in the general view.

E and F are the lower infeed-rollers; G and H, the upper infeed-rollers; I, the lower outfeed-roller, and J the upper outfeed-roller.

31 is the driving-shaft for all the feed-rollers. I have not specifically illustrated, nor shall I describe, the driving connections to the cutter-heads and the shaft 31, as these form no part of my invention, the driving-shaft driving all the mechanism to which my improvement is applied.

32 is a pinion on shaft 31, meshing with a gear 33 on shaft 34.

35 is a pinion on shaft 34, meshing with a gear 36 on shaft 37. 38 is another gear on shaft 37, which gear drives the gear 40 on shaft 41 through the medium of an interme-

diate idler 39. On shafts 37 and 41 are, respectively, the lower feed-rollers E and F.

42 is a casing pivoted on shaft 37, the sides of which casing extend on each side of gear 380 on shaft 37. This casing 42 constitutes the bearing for the shaft of gear 43, which, like gear 380, is between the walls of the casing. Gear 43 engages a gear 44, which drives gears 45 and 46, the said gears 44 46 being on shafts having their bearings engaging and supported by screw-shafts 48, said bearings sliding on guides 47. The shaft of gears 45 and 46 carry, respectively, the upper feed-rollers G and H.

49 49 are links on each side of gears 43 and 44 and pivoted on the shafts of said gears.

The mechanism for raising and lowering the upper feed-rollers, so as to provide for work of different thicknesses, is as follows: The screw-shafts 48 48, having their bearings in frame or guide 47, have at the upper ends the bevel-gears 480 480, meshing with bevel-gears 50 50 on shaft 51. Two other screw-shafts 52 52, having their bearings in frame or guide 47, are provided, which shafts are connected with each other by a train of gearing similar to the train connecting screw-shafts 48 48, and one of the screw-shafts 48 is connected with one of screw-shafts 52 by another similar train of gearing. By turning one of the screw-shafts all the screw-shafts are turned, thereby raising or lowering all the bearings of the upper rollers G and H, the driving connections between gear 380 and gear 44 being maintained by means of the intermediate gear 43, links 49, and casing 42.

The described mechanism for adjusting the rollers G and H simultaneously and equally by one manual operation forms no part of this invention, being fully described in the application filed by me December 13, 1900, and serially numbered 39,799, of which this application is a division.

The means for maintaining the driving connections between gears 380 and 44 is the novel feature of the foregoing mechanism which I hereinafter claim. The casing 42 takes the place of the links heretofore in use on either side of gears 380 and 44. The essential fea-

ture of the casing is that it shall have side members which extend from shaft to shaft on opposite sides of the said gears and that said members shall project at each end beyond the periphery of the gear and be connected together at their outer ends. By means of this casing the liability to twisting of the shaft 37 and the shaft of gear 43 by constant adjustment of the upper feed-rollers by the adjusting mechanism described or some equivalent adjusting mechanism is entirely removed—that is, it entirely prevents one shaft from twisting with relation to the other during the adjustment of the feed-rollers.

By using the word "casing" I do not refer to a device which actually incloses the gears 380 and 42, but intend to refer to a unitary device pivoted on each side of the gears or (which is in substance the same thing) to devices pivoted on either side of the gears and positively connected together as distinguished from independent links or the like, which permit any tendency to destroying the necessarily perfect alinement between the shafts mentioned. Nor do I confine myself to the use of a casing of the character described between the two feed-rollers mentioned, as it may be advantageously employed, for example, between the shafts of gears 43 and 44 or between adjacent shafts of a train of gears arranged in a somewhat different manner from that described.

The mechanism for rotating the outfeed-rollers is as follows: The pinion 35 on shaft 34 also drives the gear 90, which, through gear 91, drives gear 92 on shaft 93. This shaft carries the lower outfeed-roller I. The gear 930 on shaft 93, through gears 94 and 95, drives gear 96 on shaft 97. This shaft carries the upper out-feed roller J. The bearing in which the shaft of gear 96 is journaled is adjusted vertically by mechanism the same as that described for adjusting the upper in-feed-rollers G H, there being, however, only two vertical screw-shafts.

98 is a casing similar to casing 42, pivoted on shaft 93 and constituting the bearing for the shaft of gear 94, while links 99 99 are pivoted to shaft of gear 94 and secured to another similar casing 980, pivoted on shaft 97 and acting as the bearing for gear 95. Casings 98 and 980 embody the same principle of construction as casing 42 and perform the same function.

Having now fully described my invention, what I claim, and desire to protect by Letters Patent, is—

1. The combination, with a feed-roller, of a train of gears for driving the same, means for adjusting the feed-roller thereby varying the relative positions of the shafts of adjacent gears of the train, and a casing connecting the shafts of two of the gears, said casing having side members which extend from shaft to shaft on opposite sides of the last-named gears and which project at each end beyond

the periphery of the gear and are connected together at their outer ends.

2. The combination, with a feed-roller, of a driven gear connected thereto so as to drive the same, a driving-gear, an intermediate gear driven by the driving-gear and driving the driven gear, means for adjusting the feed-roller thereby moving the driven gear connected thereto, and a casing connecting the shafts of two of the adjacent engaging gears, said casing having side members which extend from shaft to shaft on opposite sides of the last-named gears and which project at each end beyond the periphery of the gear and are connected together at their outer ends.

3. The combination, with a feed-roller, of a driven gear connected thereto so as to drive the same, a driving-gear, an intermediate gear driven by the driving-gear and driving the driven gear, means for adjusting the feed-roller thereby moving the driven gear connected thereto, a casing connecting the shafts of the intermediate gear and one of the gears engaging the same, said casing having side members which extend from shaft to shaft on opposite sides of the last-named gears and which project at each end beyond the periphery of the gear and are connected together at their outer ends, and links connecting the shafts of the intermediate gear and the other gear engaging the same.

4. The combination, with a feed-roller, of a driven gear connected thereto so as to drive the same, a driving-gear, an intermediate gear driven by the driving-gear and driving the driven gear, means for adjusting the feed-roller thereby moving the driven gear connected thereto, and a casing connecting the shafts of the intermediate gear and its driving-gear, said casing having side members which extend from shaft to shaft on opposite sides of the last-named gears and which project at each end beyond the periphery of the gear and are connected together at their outer ends.

5. The combination, with the feed-roller, of a driven gear connected thereto so as to drive the same, a driving-gear, an intermediate gear driven by the driving-gear and driving the driven gear, means for adjusting the feed-roller thereby moving the driven gear connected thereto, a casing connecting the shafts of the intermediate gear and its driving-gear, said casing having side members which extend from shaft to shaft on opposite sides of the last-named gears and which project at each end beyond the periphery of the gear and are connected together at their outer ends, and links connecting the intermediate gear and the gear driven thereby.

6. The combination, with the stationary lower feed-roller and the upper feed-roller and means for vertically adjusting the latter, of a driven gear connected to the upper feed-roller, so as to drive the same, a driving-gear, an intermediate gear driven by the driving-gear and driving the driven gear, a casing

connecting the shafts of the intermediate gear and the driving-gear, said casing having side members which extend from shaft to shaft on opposite sides of the last-named gears and
5 which project at each end beyond the periphery of the gear and are connected together at their outer ends, and links connecting the intermediate gear and the gear driven thereby.
7. The combination, with the stationary
10 lower feed-roller, the upper feed-roller and means for vertically adjusting the latter, of a driven gear connected to and driving the upper feed-roller, a driving-shaft, driving connection therefrom to the lower feed-roller, a
15 driving-gear on the driving-shaft, an intermediate gear driven by the driving-gear and

driving the driven gear, a casing connecting the shafts of the intermediate gear and the driving-gear, said casing having side members which extend from shaft to shaft on opposite sides of the last-named gears and which
20 project at each end beyond the periphery of the gear and are connected together at their outer ends, and links connecting the intermediate gear and the gear driven thereby. 25

In testimony of which invention I have hereunto set my hand, at Philadelphia, on this 15th day of March, 1901.

WILLIAM O. VIVARTTAS.

Witnesses:

M. F. ELLIS,
M. M. HAMILTON.