

(No Model.)

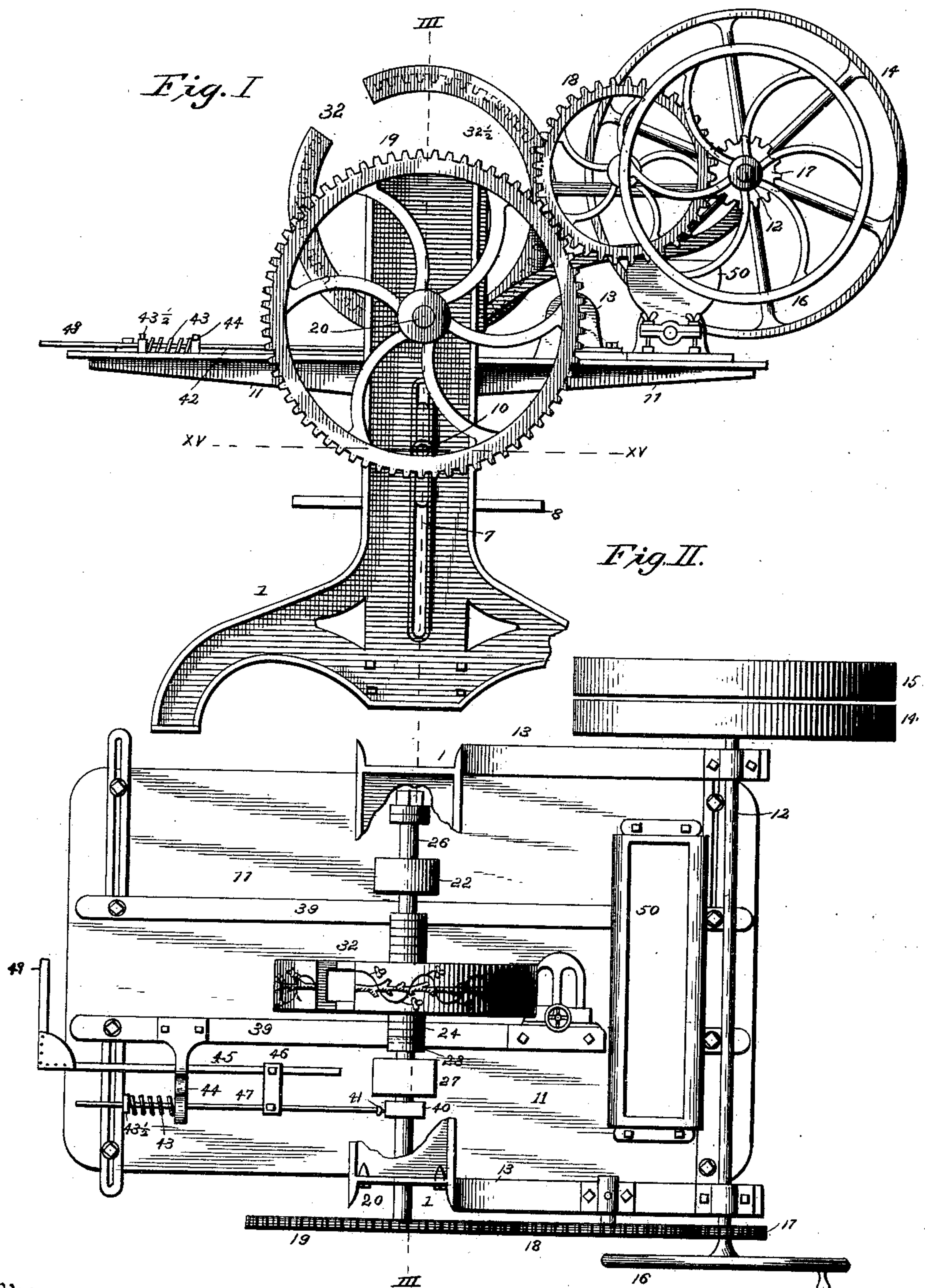
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W. W. KRUTSCH.

WOOD EMBOSSING, FILLING, AND BACKING OUT MACHINE.

No. 407,223.

Patented July 16, 1889.



Witnesses

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Georg Wheelock

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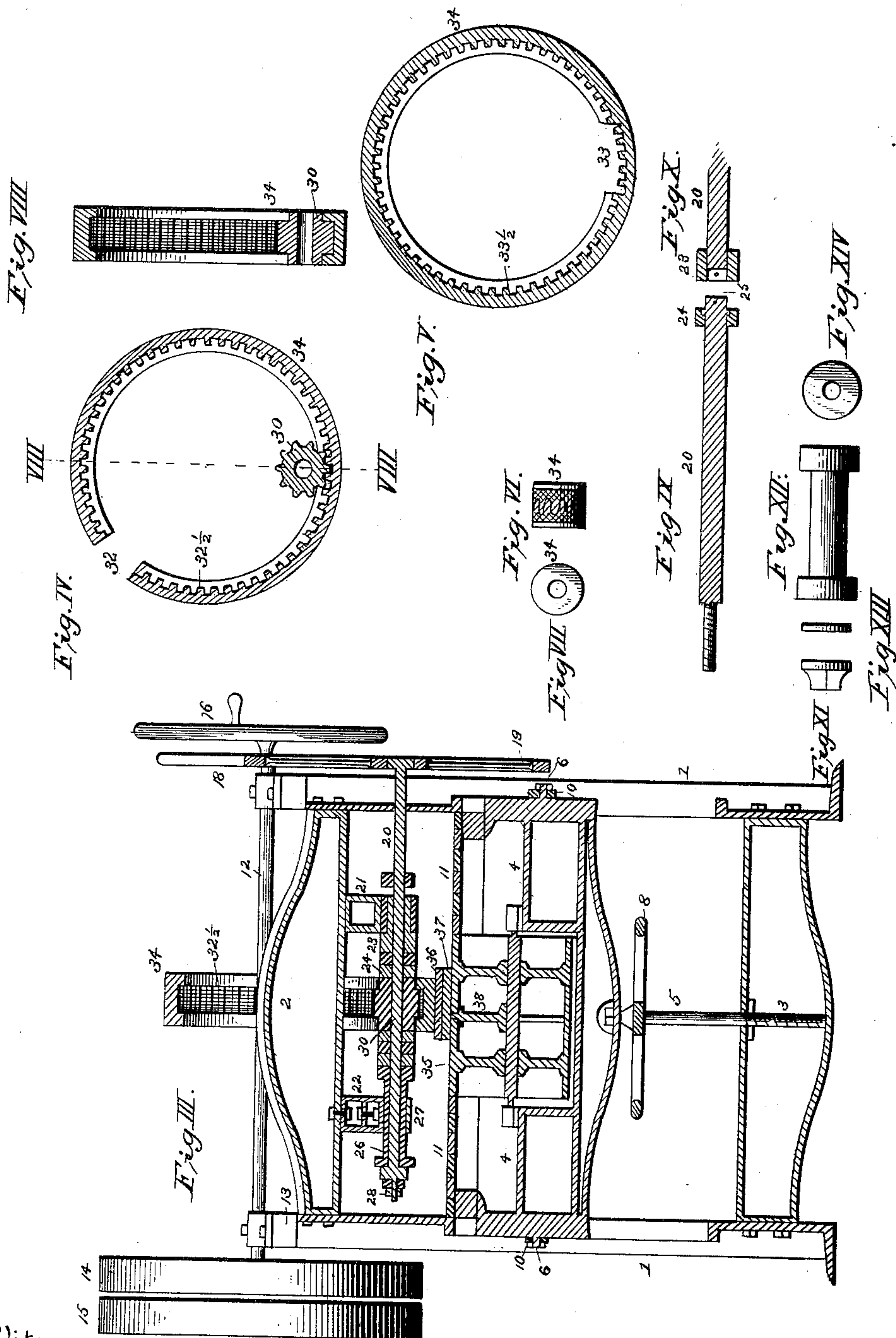
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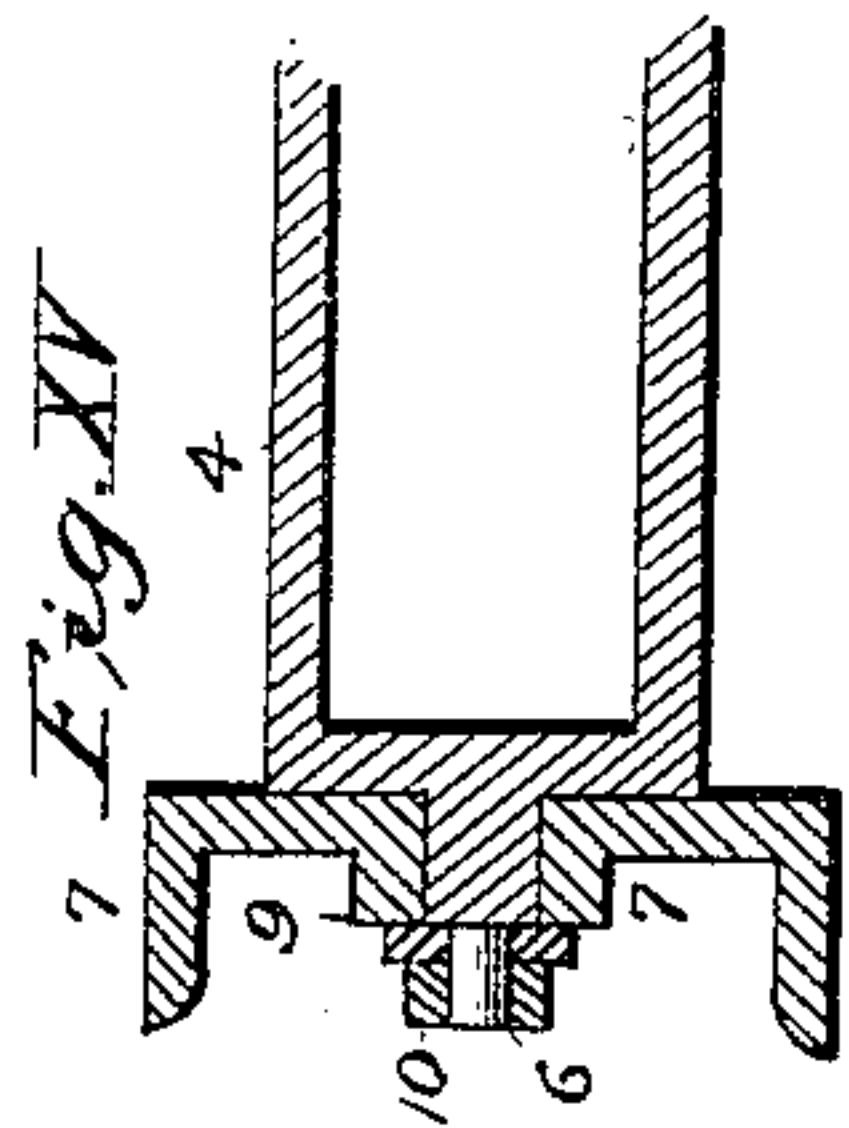


Fig. XVII

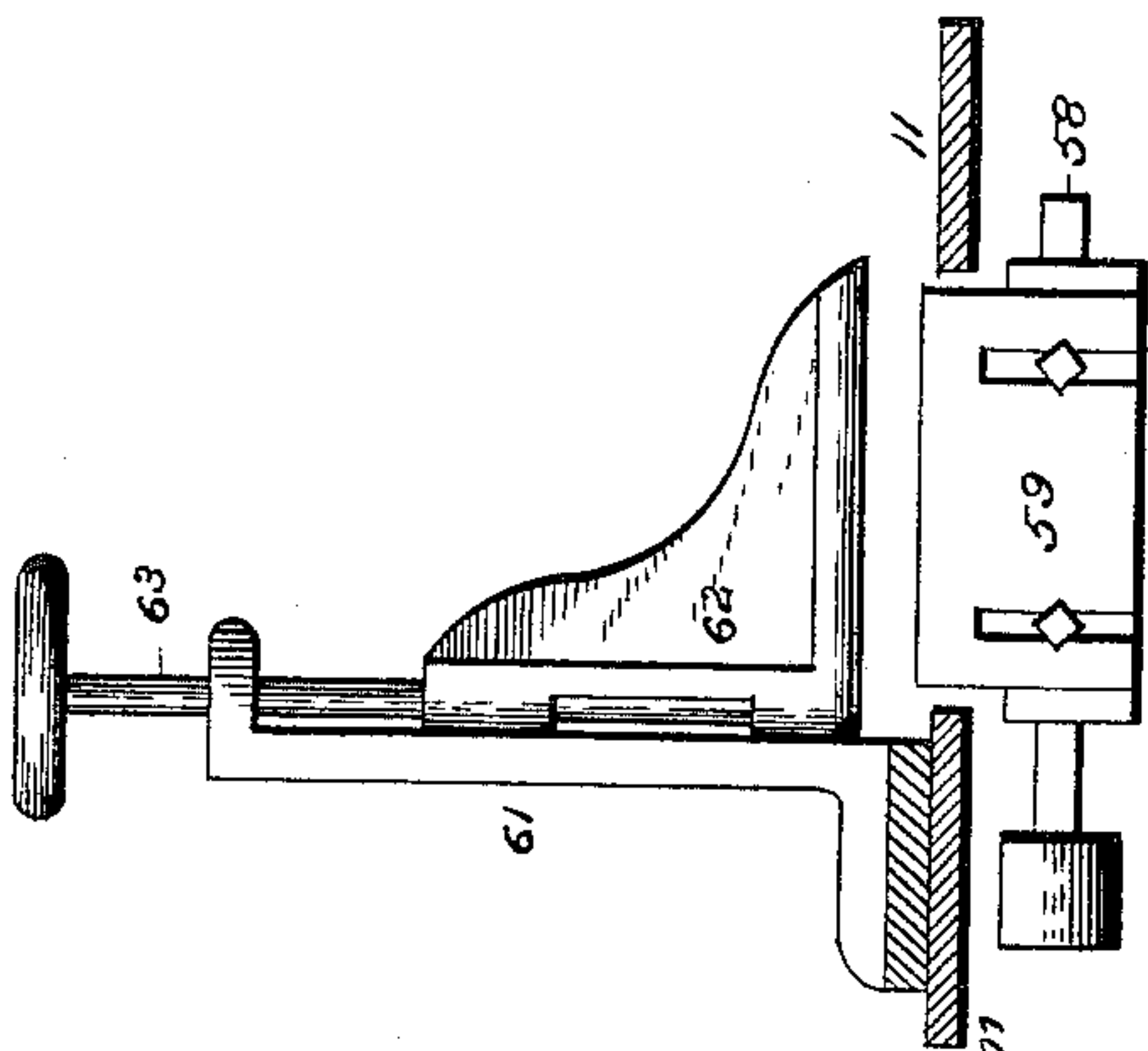


Fig. XXIII



Fig. XXI



Fig. XX

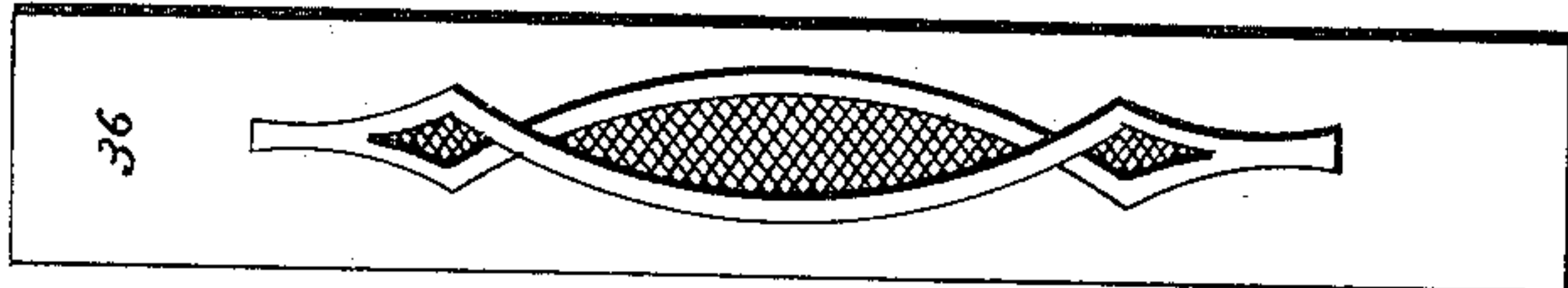


Fig. XXV

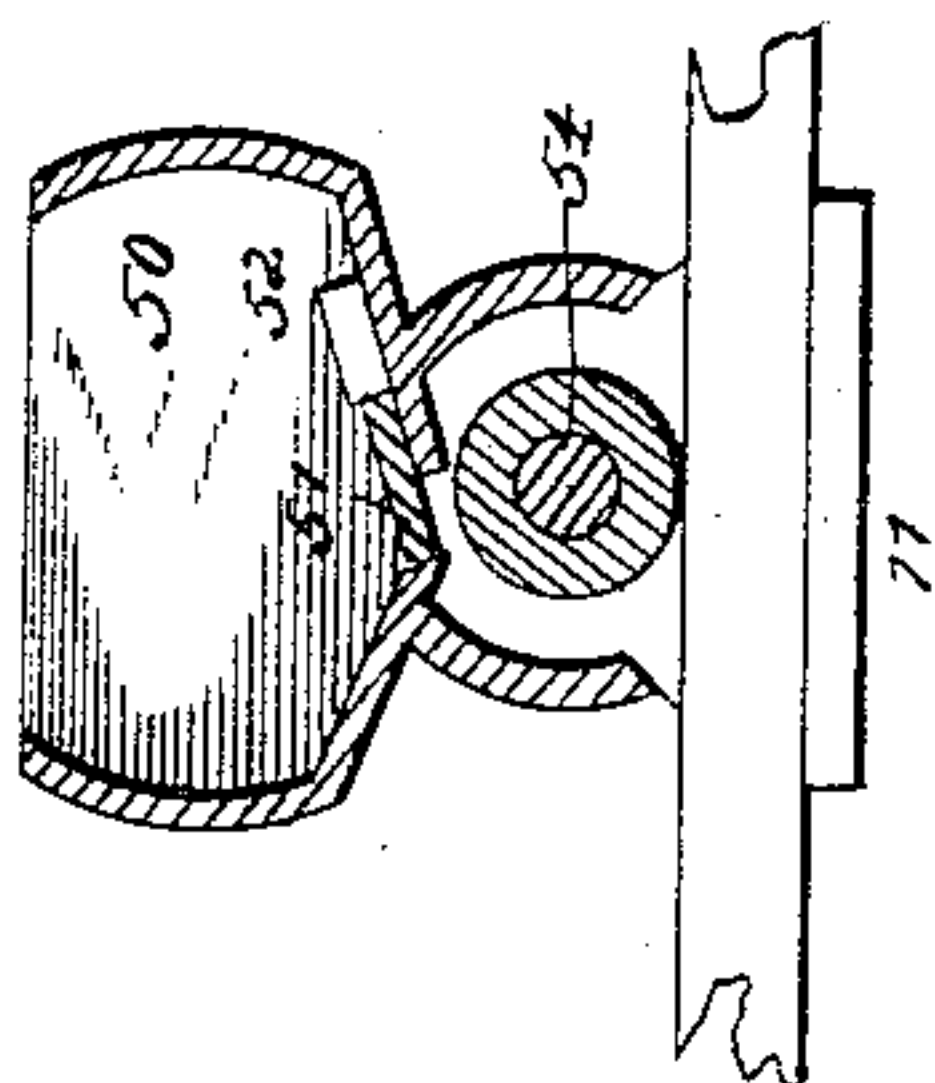


Fig. XIX

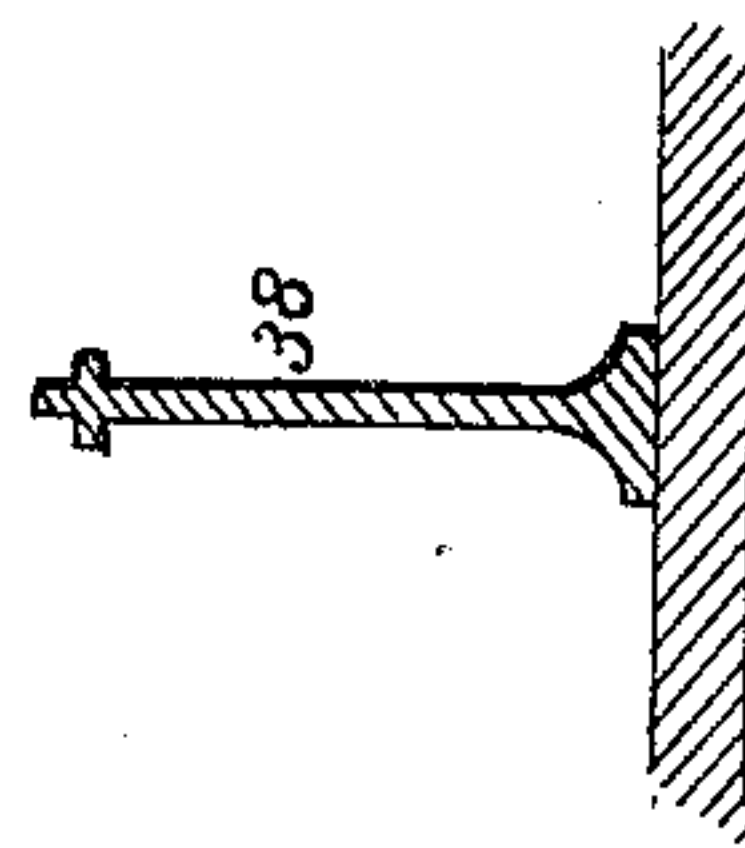


Fig. XVII

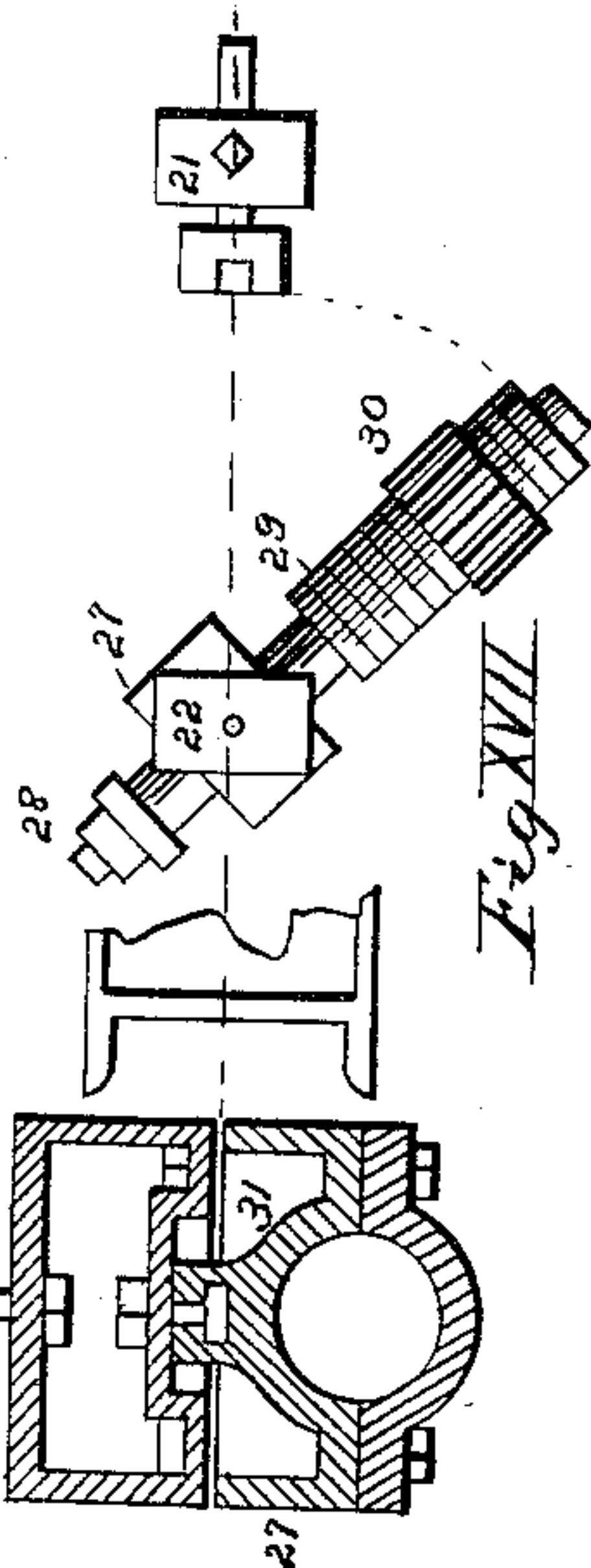


Fig. XVIII

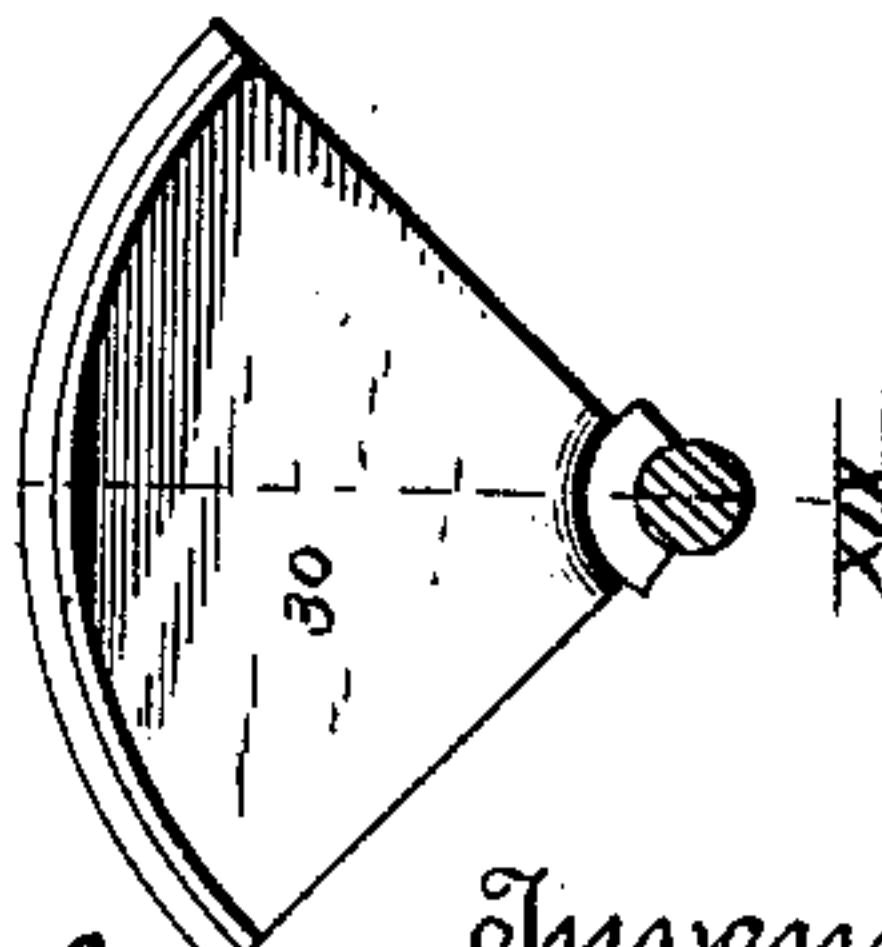


Fig. XXIV

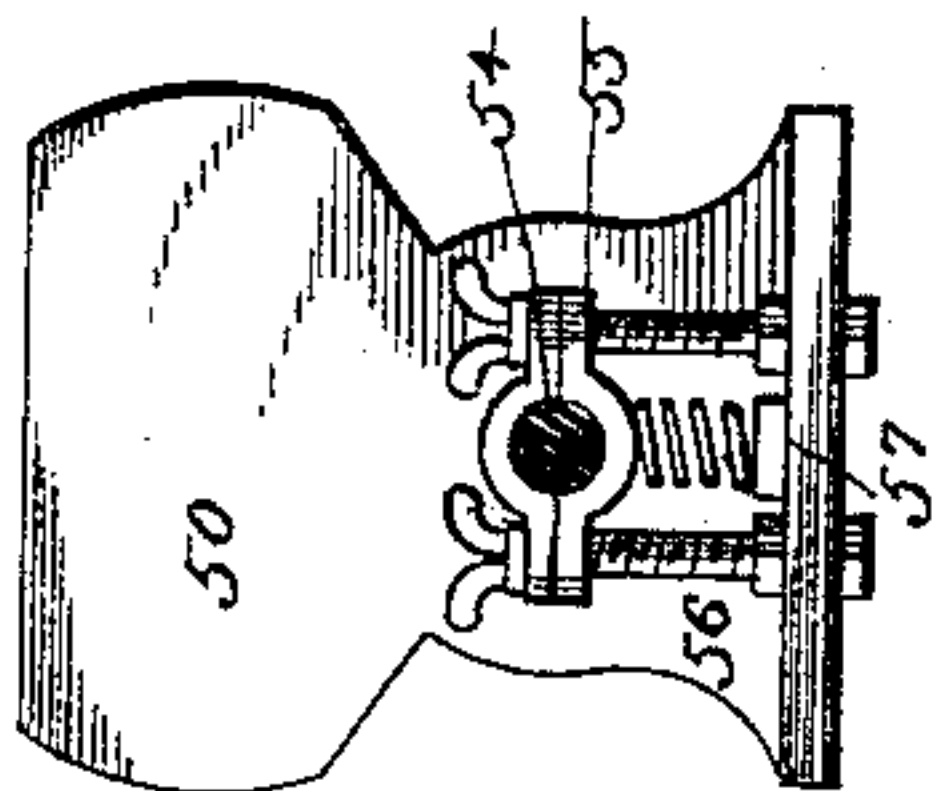
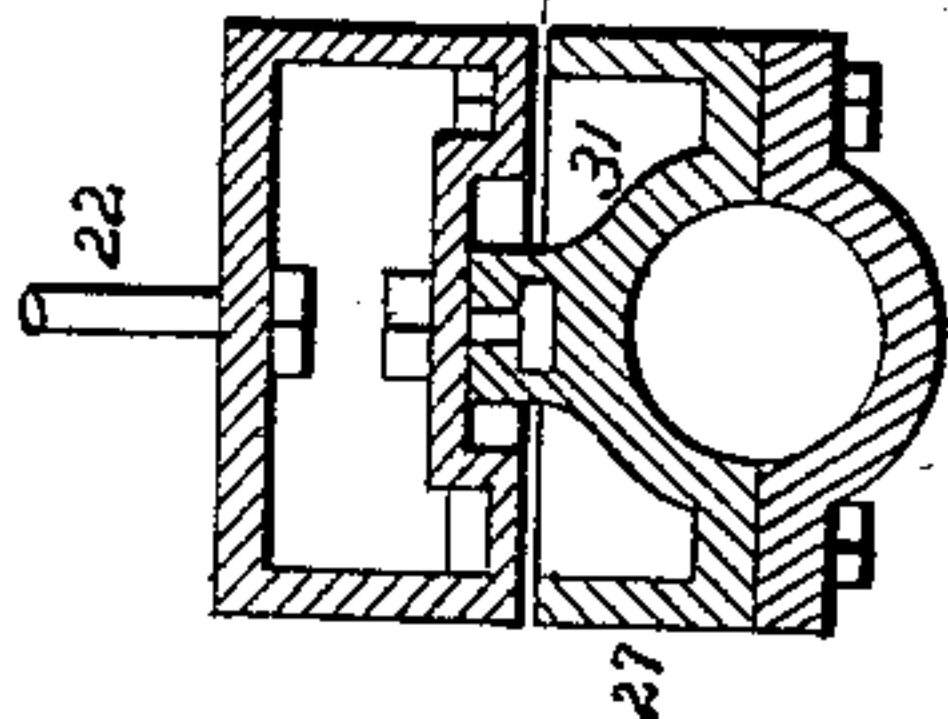


Fig. XVI



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# UNITED STATES PATENT OFFICE.

WILLIS W. KRUTSCH, OF FORT SCOTT, KANSAS, ASSIGNOR OF ONE-HALF TO  
SAMUEL VAN BUSKIRK, OF SAME PLACE.

## WOOD EMBOSSING, FILLING, AND BACKING-OUT MACHINE.

SPECIFICATION forming part of Letters Patent No. 407,223, dated July 16, 1889.

Application filed January 12, 1889. Serial No. 296,216. (No model.)

*To all whom it may concern:*

Be it known that I, WILLIS W. KRUTSCH, of Fort Scott, in the county of Bourbon and State of Kansas, have invented a certain new and useful Improvement in Combined Wood Embossing, Filling, and Backing-Out Machines, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, and in which—

Figure I is a side view of my improved machine. Fig. II is a top view showing a portion of the frame broken away. Fig. III is a section taken on line III III, Figs. I and II. Figs. IV and V are vertical sectional views of the preferred form of embossing-wheel. Figs. VI and VII are side and end views, respectively, of another embossing-wheel. Fig. VIII is a section taken on line VIII VIII, Fig. IV. Figs. IX and X are longitudinal sectional views of the shaft on which the embossing-wheel is supported. Fig. XI is a nut which fits on one end of the embossing-shaft. Fig. XII is a sleeve in which the embossing-shaft works. Figs. XIII and XIV are washers. Fig. XV is an enlarged detail section taken on line XV XV, Fig. I, showing the manner in which the feed-adjusting frame slides in the main frame. Fig. XVI is an enlarged detail view of the box which supports one end of the embossing-shaft. Fig. XVII is an enlarged detail view showing the manner of attaching the embossing-roll to its shaft. Fig. XVIII is an enlarged detail side view of a stamping device. Fig. XIX is a section taken on line XIX XIX, Fig. XVIII. Figs. XX and XXI are views of the embossed wood. Fig. XXII is an enlarged detail view of the cutter for backing or cutting out the under side of the wood. Fig. XXIII is a detail view showing board backed out. Fig. XXIV is an enlarged end view of the filler-box. Fig. XXV is an enlarged sectional view of the filler-box and roller.

My invention relates to a combined wood embossing, filling, and backing-out machine; and my invention consists in features of novelty hereinafter fully described, and pointed out in the claims.

Referring to the drawings, 1 represents the

side frames of the machine, by which the various parts are supported.

2 represents a cross-frame connecting the frames 1 near their upper ends.

3 represents a cross-frame connecting the frames 1 near their lower ends.

4 represents an adjustable frame, supported by a screw 5, said frame 4 being provided at each of its ends with projections 6, which fit snugly in openings 7 (see Figs. I and XV) of each of the side frames 1. The frame 4 may be raised or lowered by means of the screw 5, which is provided at its upper end with a wheel 8 for operating the same. The projections 6 on the frame 4 have washers 9 and nuts 10 on their outer ends, which prevents too great a latitude of the frame as it move up or down in the openings 7.

11 represents the table, which is secured to the adjustable frame 4.

12 represents the main drive-shaft, which is supported by brackets 13, which in turn are connected to the main frame 1.

14 represents a driving-pulley secured near one end of the drive-shaft 12.

15 represents a loose pulley located at one end of the drive-shaft 12.

16 represents a hand-wheel secured to the other end of the shaft 12, which may be used, when desired, for operating the machine.

17 represents a gear-wheel secured to the shaft 12, which meshes with a gear-wheel 18, which in turn meshes in a wheel 19. The wheel 19 is secured to one end of a shaft 20. The shaft 20 is supported by hangers 21 22, which are attached to the frame 2. For convenience the shaft 20 is made in two parts, as shown in Figs. IX and X. One section is provided with a sleeve 23 and the other with a fixed collar 24, leaving an end 25 projecting beyond the collar 24. The sections of the shaft are connected by inserting the end 25 in the sleeve 23, where it may be secured by passing a pin through the sleeve and shaft.

26 represents an adjustable sleeve. (See Figs. II, III, and XII.) This sleeve is supported in a swivel-bearing 27. (See Figs. III, XVI, and XVII.) By means of the swivel-bearing, when the shaft is disconnected, one section may be thrown around, as shown in



Fig. XVII, and then, by removing the nut 28 on the end of the shaft, the shaft may be removed from its bearings and the washers 29 and cog-wheel 30 may be removed from the shaft. It will be seen that, when the shaft is in working position, by tightening up the nut 28 on the end of the shaft the sleeve 26 will be forced endwise, which will in turn force the washers 29 up against the cog-wheel 30 and hold it securely in position. Over the bearing 27 is located an oil-cup 31, (see Fig. XVI,) through which the sleeve 26 may be lubricated. For certain kinds of work, and where a short design is desired, I use a small continuous embossing-wheel 34, as shown in Figs. VI and VII.

My special form of embossing-wheel is shown in Figs. I, II, III, IV, V, and VIII. I cut away a portion of the wheel, as shown at 32, in order that the wheel may pass over the frame 2. (See Figs. I, II, and III.) By this means a much longer design may be used than would be the case were the wheel made small enough to rotate beneath the frame 2. The embossing-wheel is supported by resting on the wood that is being embossed, and is held against the same by the cog-wheel that drives it. Where the design is not intended to be the full length of the wheel, I form a depression 33 in the cogs 33½ of the wheel. Thus the wheel is relieved from pressure for a short distance and no impression is made, for the depressed portion 33 allows the embossing-wheel to rise at the end of a design, and it thus does not make any impression on the wood until the cog-wheel again comes in contact with the main cogs. When the cog-wheel 30 comes over the cut-away portion 32, the embossing-wheel may be rotated by the operator taking hold of the same, or by pressing the material to be embossed against the wheel, and thus move it by friction. The embossing-wheel is driven by a cog-wheel 30, situated on the shaft 20.

35 represents a friction-roller journaled in the frame 4, (see Fig. III,) by which means the material to be embossed is carried under the embossing-wheel.

36 represents embossed boards.

When it is desired to emboss both sides of the board, I insert a slide 37 (see Fig. III) under the embossed board 36, so as to prevent the friction-roller 35 from injuring the embossing.

38 represents a stamp of suitable design located at the center of the friction-roller 35, (see Figs. III, XVIII, and XIX,) by which the under side of the board may be stamped with a name, &c., when desired.

39 represents adjustable guides situated on the table 11.

I will now describe my feeding device.

40 represents a collar secured to the shaft 20 by means of a set-screw 41. As the shaft 20 revolves, the head of the screw 41 comes in contact with the upturned end of a rod 42, and forces it along the table until the re-

volving of the shaft raises the screw out of connection with the rod.

43 represents a spring on the rod 42, and as the screw 41 releases the rod the spring forces it back to its normal position.

44 represents a bracket, against which one end of the spring 43 bears, the other end being confined by a collar 43½.

45 represents a rod parallel to rod 42.

46 represents an adjustable bracket secured to the rods 42 45 by set-screws 47 48.

49 represents a short right-angle extension on the rod 45. By this device the material may be fed to the machine automatically.

50 represents a filling-box attached to the table 11. (See Figs. I, II, XXIV, and XXV.) The filling-box is provided with a slide 51, by which the amount of filling material used may be regulated.

52 represents a guide for the slide 51.

53 represents a roller situated under the filler-box 50, by which means the filling material is pressed into the boards after they have been embossed. The shaft 54 of the roller 53 is supported by an adjustable bearing 55, held in place by bolts 56, and is provided with a tension-spring 57.

The object of the filling attachment is to fill up the embossed depressions in the wood with any suitable material used for such purposes, so as to prevent injury to the same until such a time as it is used. Were it not for the filling material the embossed portion might be damaged by coming in contact with hard substances.

58 represents a cutter-shaft, (see Fig. XXII,) which is attached to the table 11. The shaft has connected to it adjustable knives 59. This cutter is for the purpose of backing-out boards, as shown at 60, Fig. XXIII.

61 represents a standard in which moves an adjustable clamp or guide 62, which is operated by a screw 63.

It is intended that the embossing-wheel shall be heated before embossing the wood. The embossing-wheel is heated because when it comes in contact with the wood it turns the sap or any moisture in the wood into steam, thus softening it and allowing a better impression to be made.

I claim as my invention—

1. The combination of the supporting-frame, adjustable table supported in the frame, a shaft provided with a cog-wheel, and an embossing-wheel provided with cogs on its inner surface which mesh with the cog-wheel secured to the shaft, and means for rotating said shaft, substantially as and for the purpose set forth.

2. The combination of the supporting-frame, adjustable table supported in the frame, a shaft provided with a cog-wheel, an embossing-wheel provided with cogs on its inner surface which mesh with the cog-wheel on the shaft, said embossing-wheel being provided with an opening 32, and suitable gearing for rotating



said shaft and embossing-wheel, substantially as and for the purpose set forth.

3. The combination of an adjustable table, drive-shaft 12, shaft 20, intermediate gearing 5 connecting said shafts, embossing-wheel located on the shaft 20, and a feeding device consisting of the rods 42 45, said rods being adjustably connected to each other, and a collar 40, secured to the shaft 20 and provided 10 with a set-screw 41 for the purpose of operating said feeding device, substantially as described, and for the purpose set forth.

4. As a new article of manufacture, an embossing-wheel provided with cogs on its inner 15 surface and an opening 32, substantially as and for the purpose set forth.

5. As a new article of manufacture, an embossing-wheel provided with cogs on its inner surface and having a depression 33 in said 20 cogs, substantially as described, and for the purpose set forth.

6. The combination of a frame, shaft 20, mounted in said frame, said shaft being in sections, one of the sections being supported 25 by a swivel-bearing 27, in order that said section may be disconnected from the fixed sec-

tion when it is desired to remove the shaft from the machine, substantially as described, and for the purpose set forth.

7. The combination of the frame 1, table 11, 30 shafts 12 20, embossing-wheel 34, suitable gearing connecting said shafts in order to rotate said embossing-wheel, and a filling device consisting of a box 50, roller 53, situated beneath the box, means for supporting said 35 roller, and a tension-spring 57, connected with said roller, substantially as and for the purpose set forth.

8. The combination of a supporting-frame, sliding frame 4, friction-roller 35, journaled 40 therein, and a stamping device 38 at the center of the friction-roller, substantially as and for the purpose set forth.

9. The combination of the frames 1 2, shafts 12 20, sliding sleeve 26, gearing-wheels 17 18 45 19, table 11, adjustable cutter 59, guide 62, supported in a frame 61, and a screw 63, substantially as and for the purpose set forth.

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