

(No Model.)

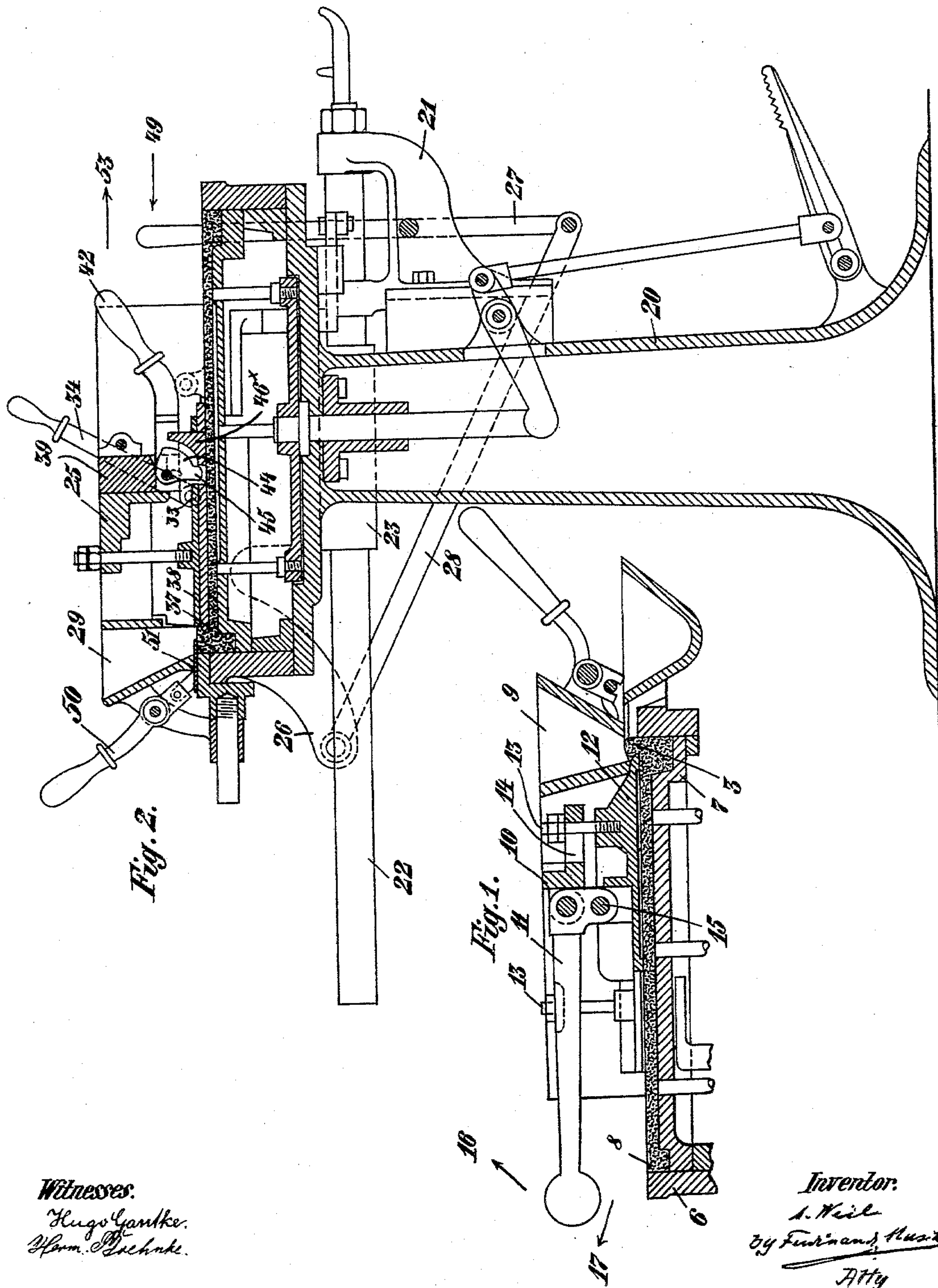
4 Sheets—Sheet 1.

A. WEIL.

MACHINE FOR MANUFACTURING ROOFING TILES.

No. 597,447.

Patented Jan. 18, 1898.



Witnesses:
Hugo Gantke.
Harm. Tschinke.

Inventor:
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(No Model.)

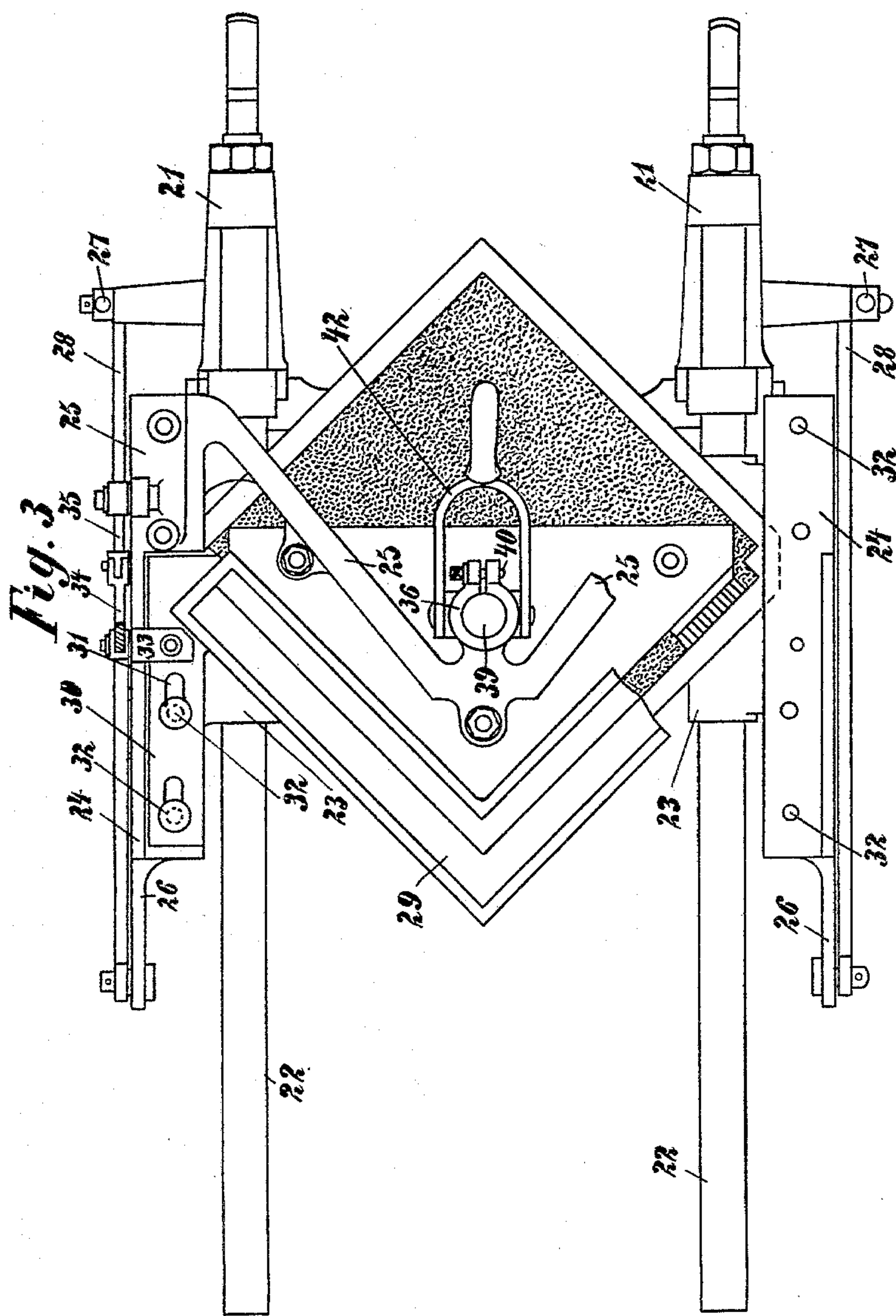
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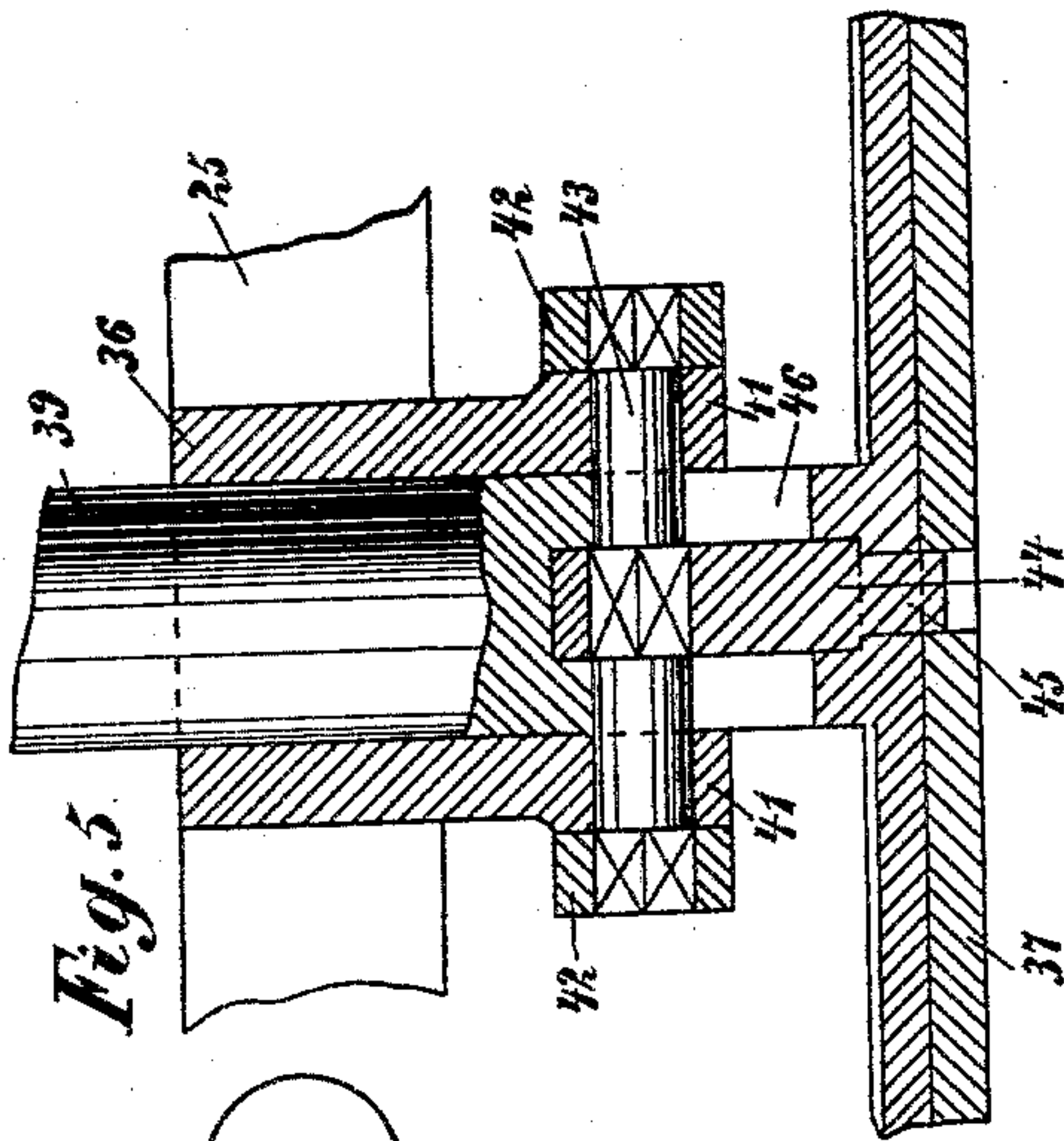


Fig. 5.

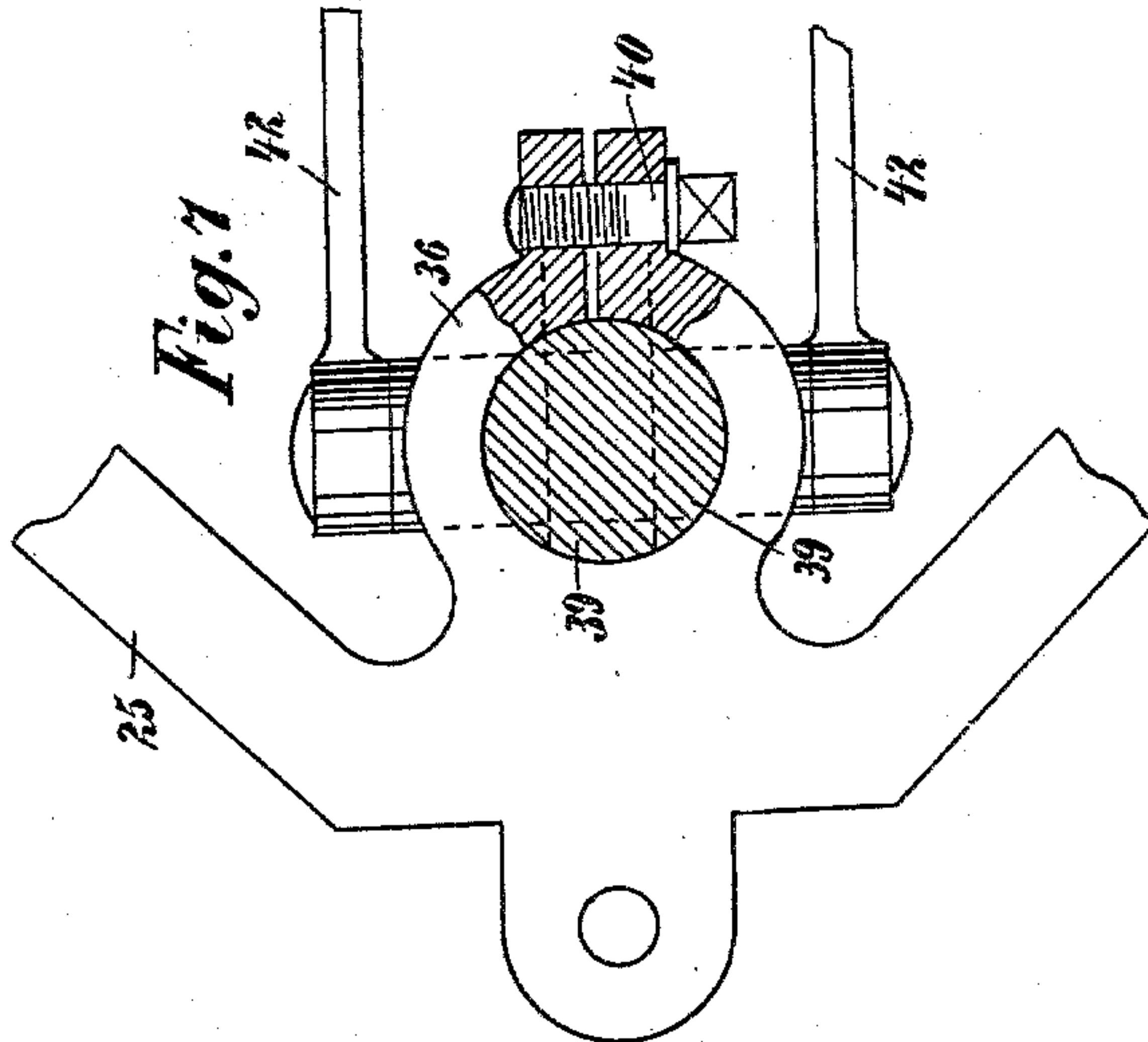


Fig. 7.

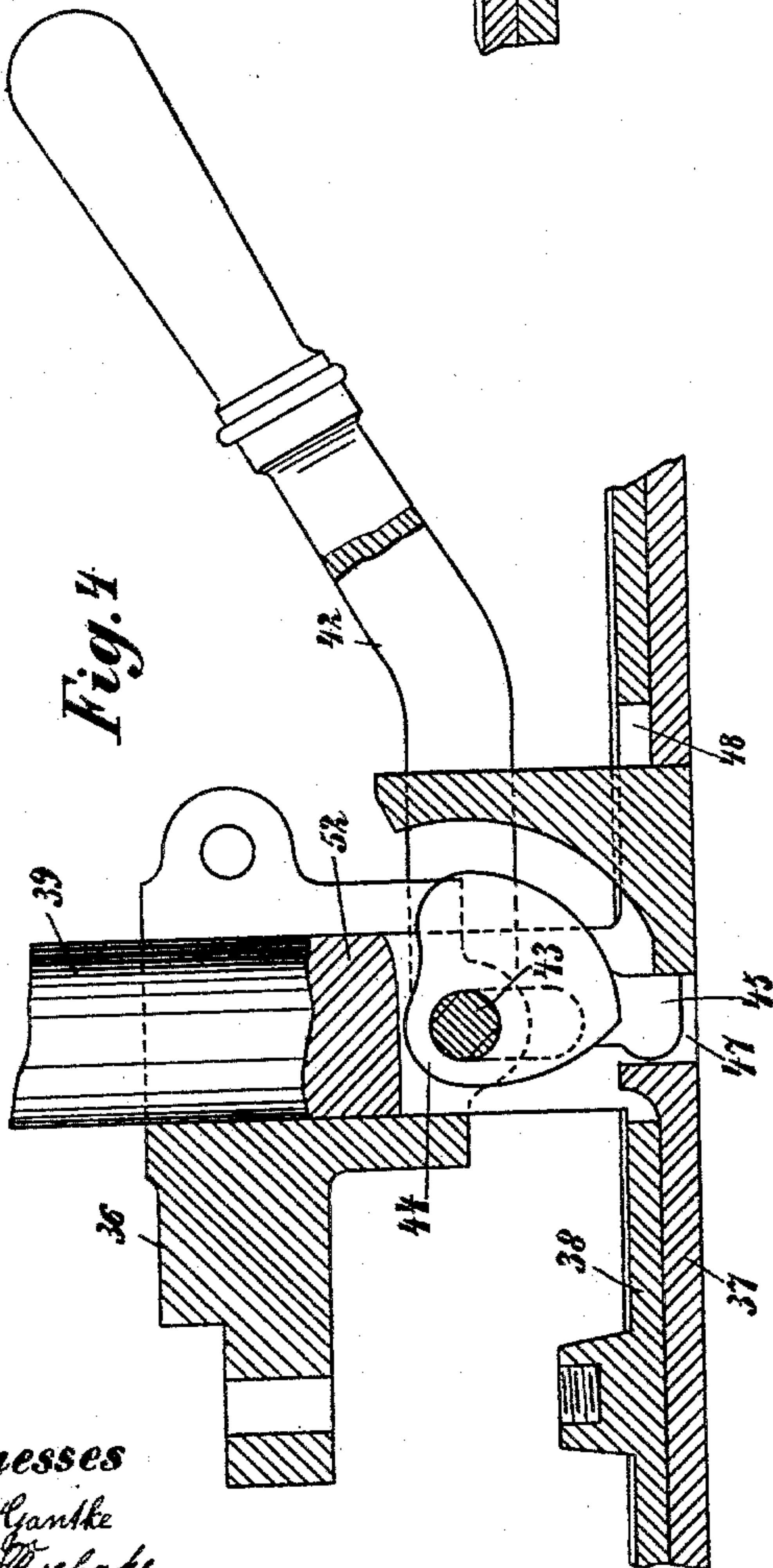


Fig. 4.

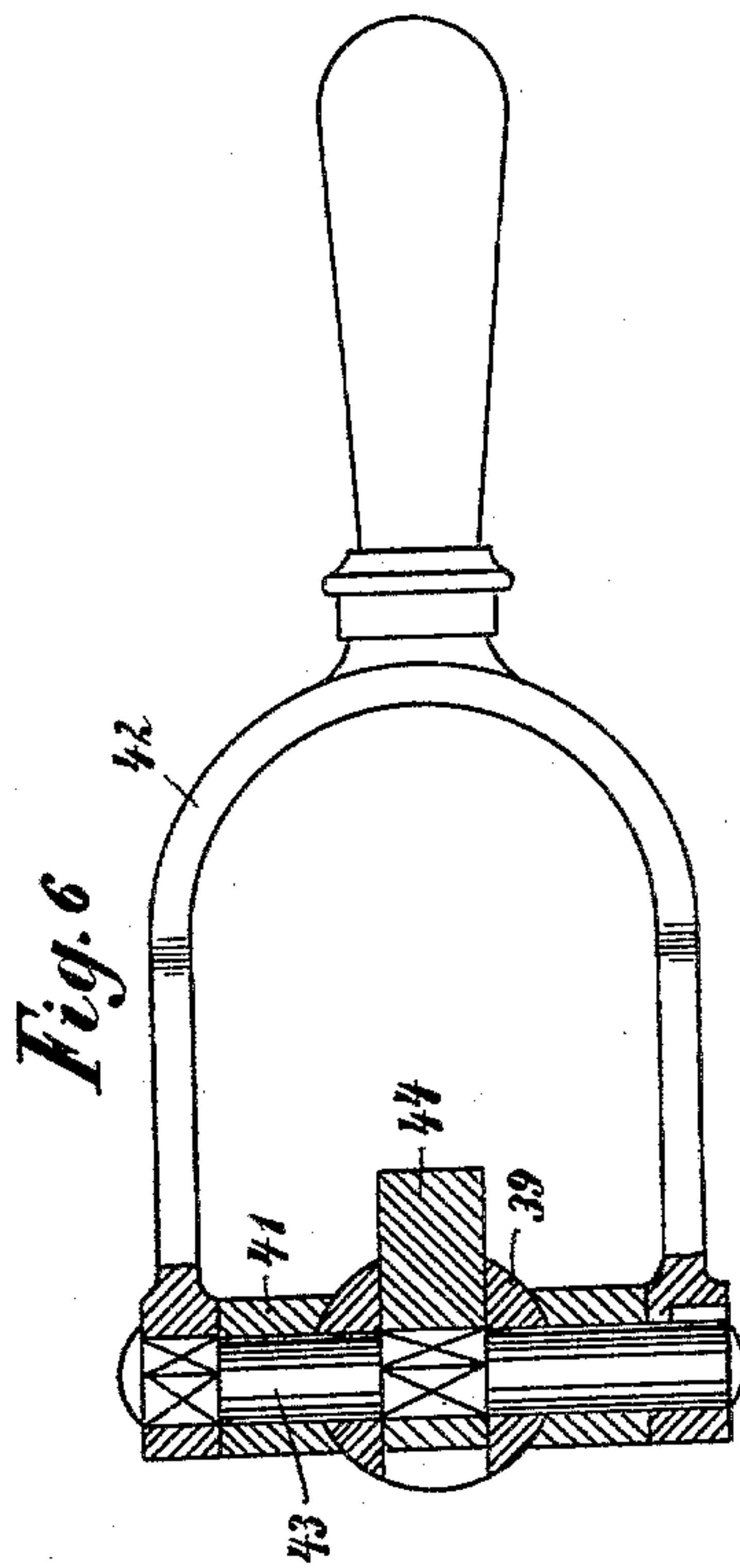


Fig. 6.

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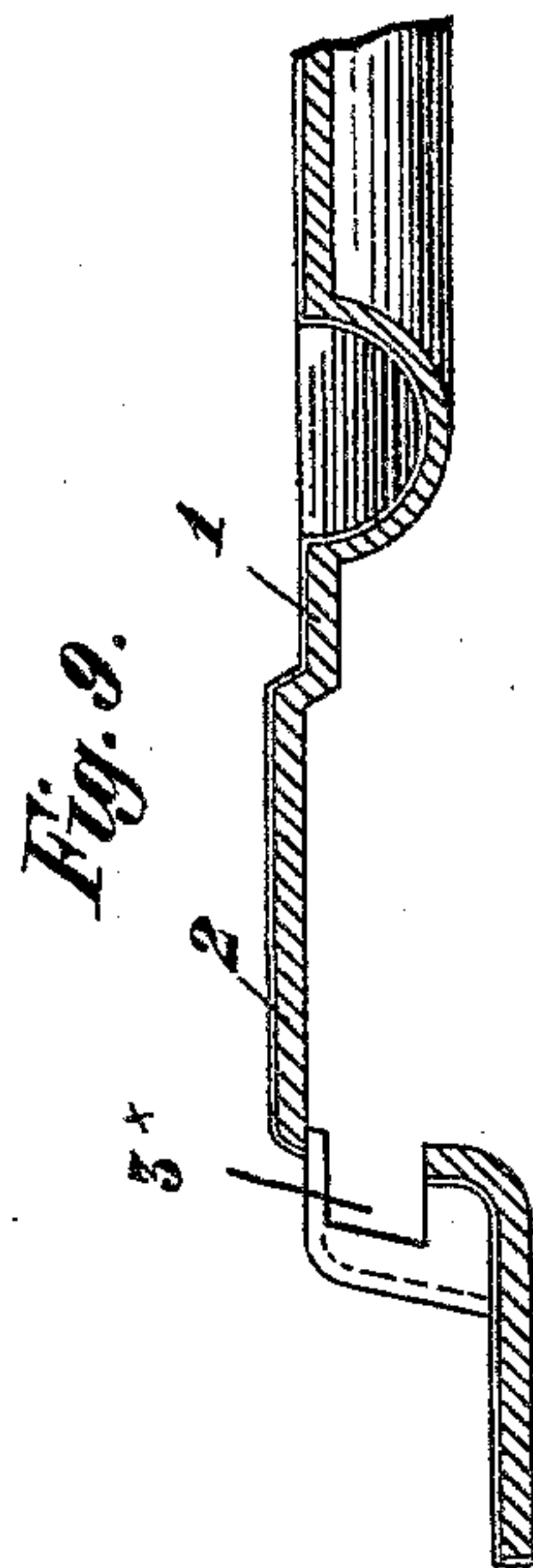
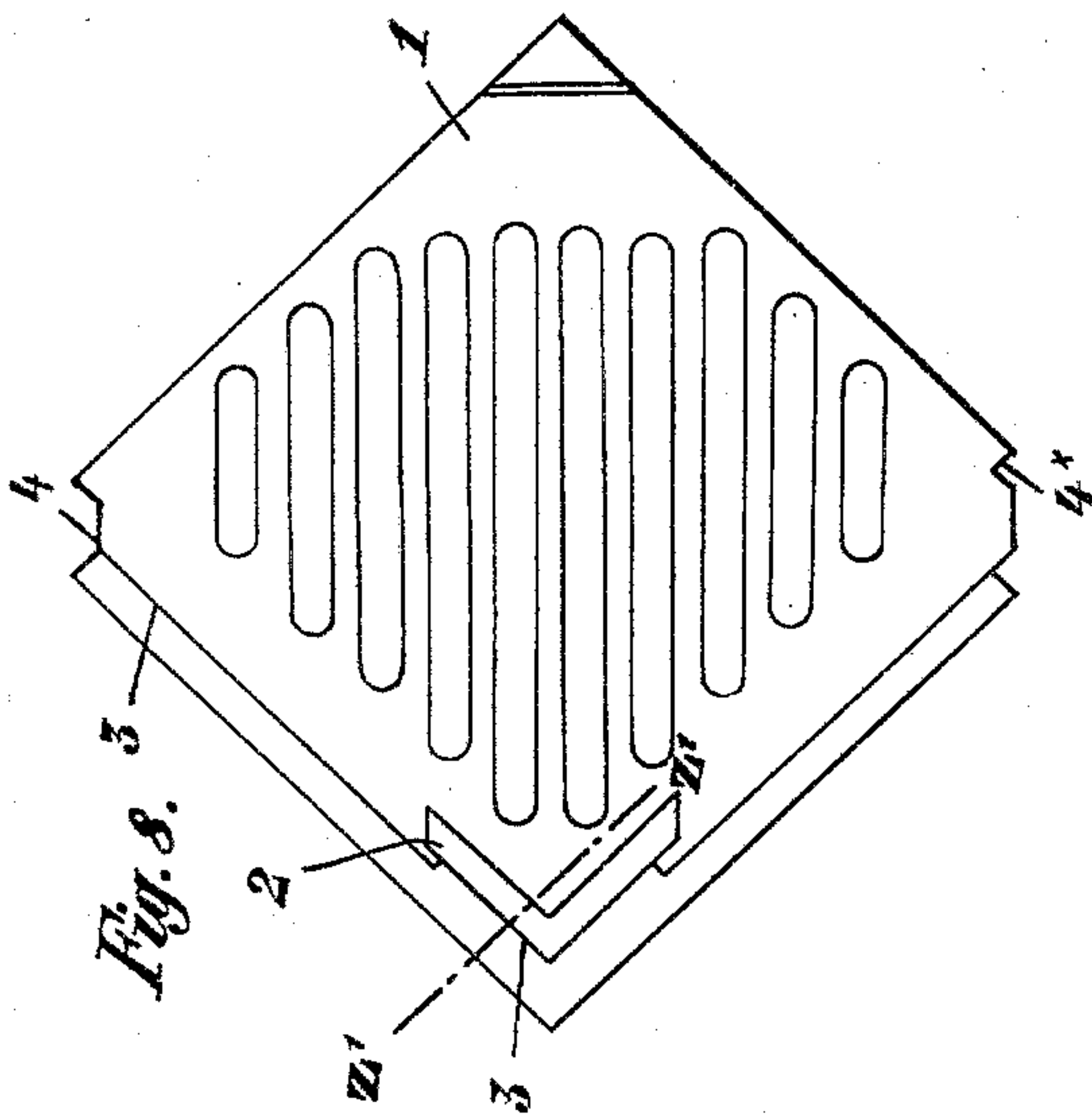
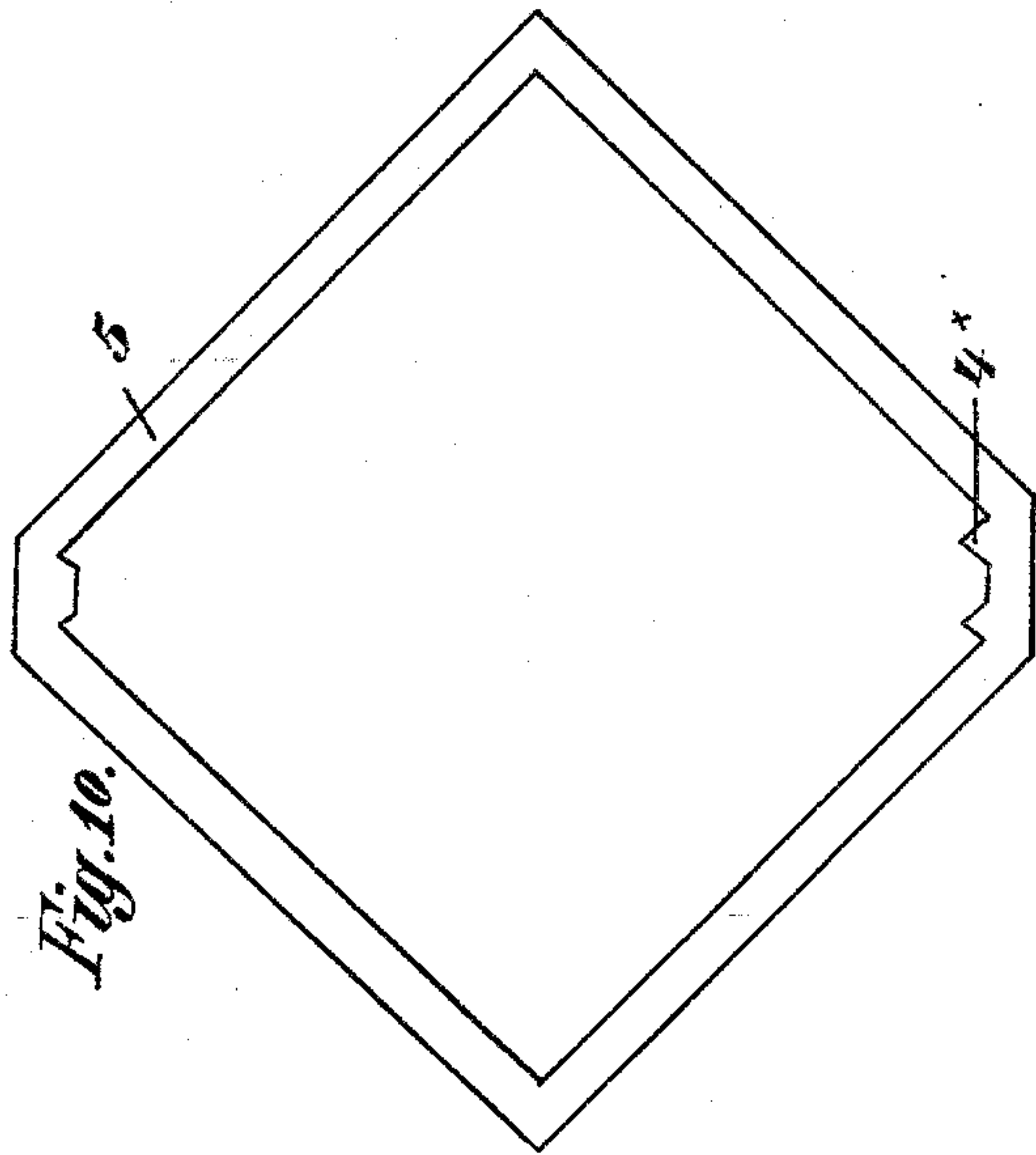
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Herm. Schake.

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UNITED STATES PATENT OFFICE.

ABRAHAM WEIL, OF STEINHEIM, GERMANY.

MACHINE FOR MANUFACTURING ROOFING-TILES.

SPECIFICATION forming part of Letters Patent No. 597,447, dated January 18, 1898.

Application filed May 8, 1896. Serial No. 590,752. (No model.)

To all whom it may concern:

Be it known that I, ABRAHAM WEIL, merchant, of Steinheim, Westphalia, in the Kingdom of Prussia, German Empire, have invented new and useful Improvements in Machinery for the Manufacture of Roofing-Tiles, of which the following is a specification.

This invention relates to machinery for the manufacture of roofing-tiles having upper and lower overlapping fillets.

In the accompanying two sheets of drawings, Figure 1 is a longitudinal section of the upper part of a machine constructed in accordance with my invention for the purpose of forming the upper overlapping fillets on the green or unbaked body of the roofing-tile. Figs. 2 to 7 show another arrangement of the machinery for the same purpose, Fig. 2 being a vertical section, Fig. 3 a plan, and Figs. 4 to 7 separate views of parts of the same machine. Figs. 8 to 10 show the molding-plate and mold-lining for forming the lower overlapping fillets, which are provided with a projecting tongue, Fig. 9 being a section taken on line $z' z'$ of Fig. 8.

Referring to Fig. 1, it will be seen that the mold 7, with the mold-plate belonging thereto for the formation of the underside of the roofing-tile, is contained within the mold-frame 6, and that the main body of the unbaked roofing-tile 8 is carried by this mold-plate. The hopper 9 is connected with the bridge 10, on which is pivoted a bell-crank lever 11. Below the bridge 10 is arranged the plate 12, which rests on the tile 8 and is used in the formation of the upper overlapping fillets. It is provided with guide-screws 13, which move in the guide-slots 14 of the bridge 10. The plate 12 is connected with the bell-crank lever 11 by means of a pin 15. When the bell-crank lever 11 is moved in the direction of the arrow 16, the plate 12 is moved in the direction of the arrow 17, so that the tile, with its overlapping fillets 3, is free to be pushed out by any suitable means.

In Fig. 1 the apparatus for the production of the recesses in the lower overlapping fillets is omitted for the sake of clearness, because the figure only relates to the upper part of the machine. In the arrangement of the machine shown in Figs. 2 and 3 the apparatus

for the production of the recesses in the lower overlapping fillets is also omitted for the sake of clearness.

The brackets 21, fixed to the frame 20, carry the guide-rods 22, on each of which is placed a movable slide 23. The upper part of each of the slides 23 terminates in a horizontal plate 24, on which is fixed the bridge 25, by means of which the two slides 23 are connected together. Each slide 23 is also provided with a downwardly-projecting arm 26. To each bracket 21 is pivoted a two-armed lever 27, which is coupled by the connecting-rod 28 with the arm 26 of each slide. On the plates 24 of the slides 23 is mounted movably the hopper 29, with its slide-bars 30 guided by the slots 31 and guide-bolts 32. The hopper 29 can consequently be moved to a certain extent to and from the bridge 25, notwithstanding that both parts remain connected with the slides 23. This movement is effected by means of the following arrangements: Each slide-bar 30 is furnished with an arm 33, which is connected with the lever 34. This lever 34 is also connected with the bridge 25 by means of the link 35. When the lever 34 is moved into the position shown in Fig. 2, the hopper is moved toward the bridge 25, and when the lever 34 is moved in the opposite direction the hopper is moved a short distance away from the bridge. In the bridge 25 are guided the two plates 37 and 38 for the production of the tooth-like projections or notched grooves in the upper overlapping fillets of the tile. The upper plate 38 is provided with a bolt 39, which takes into and is movable vertically in the box or socket 36, formed on the bridge 25. This bolt is slotted at its lower part, as shown in Figs. 4 to 7. The box or socket 36 is split in front, as shown in Figs. 2, 3, 4, and 7, and can be closed onto the bolt 39 by means of the screw 40. It is provided at its lower part with two lugs 41, in which is pivoted the forked lever 42 by means of the fulcrum-pin 43. On this bolt is fixed an eccentric 44, which takes into the slot in the bolt 39 and is provided with a pin or projection 45, which takes into the slot 47 in the plate 37. In the bolt 39 are also two slots 46, which enable it to move vertically in the box or socket 36, notwithstanding that the bolt 43

passes through it. The lower plate 37 is provided with a guide-piece 46^x, which is guided in the slot 48 of the plate 38.

The action of the machine is as follows:

- 5 The tile is delivered into the machine on the mold-plate in the usual manner. The two slides 23 and the bridge 25 are then brought into the position shown in Fig. 2 by moving the lever 27 in the direction of the arrow 49.
- 10 When this is done, the lever 34 is moved into the position shown in Fig. 2, so that the hopper 29 takes the position shown in Figs. 2 and 3. The lever 42 is then moved downward, so that the plates 37 and 38 take the position
- 15 shown in Fig. 2. The material to form the overlapping fillets is then placed in the hopper 29 and is rammed down tightly. When this is done, the superfluous material is cut off by means of the knife 51, operated by the
- 20 lever 50, and the lever 34 is moved so as to move the hopper 29 outward to the extent of the width of the overlapping fillets, the plates 37 and 38 still supporting the projections of the upper overlapping fillets. When
- 25 the hopper 29 has thus been removed, the lever 42 is moved upward. The pin 45 of the eccentric 44 bears against the guide-piece 46^x and moves the lower plate 37 toward the right until the pin 45 passes beyond the guide-piece
- 30 46^x. At that moment the eccentric 44 comes into action and presses against the part 52 of the bolt 39, Fig. 4, so that the two plates 37 and 38, which are connected together by means of guide-screws, are raised up with the bolt
- 35 39 until they stand higher than the upper edges of the upper overlapping fillets. The lever 27 is then moved in the direction of the arrow 53, (see Fig. 2,) whereby both the hopper and the bridge are moved to the left.
- 40 The tile thus finished can then be pushed out out of the machine in the usual way.

- The mold-plate for the formation of the under side of the tile (see Fig. 8) is used in the manufacture of such roofing-tiles as have
- 45 their lower overlapping fillets provided at the angle where they come together with short projections which have angular tongues that take into the groove of the upper overlapping fillets. In order to bring the base of the recess required for the production of the projecting tongue in the lower overlapping fillets even with the under side of the tile, the mold-
 - 50 plate 1 is furnished, at the point on the lower side at which the slide for the production of the recess in the lower overlapping fillets is situated, with a hollow impress 2, which receives the slide. By this means the lower surface of the hollow impress 2 is brought to the same level as the upper surface of the
 - 55 mold-plate, as shown in Fig. 9. The vertical wall 3 of the mold-plate extends a little back for the length of the hollow impress 2 in order to make the overlapping fillet broader and to form the recess therein by means of the
 - 60 slide pressed in through the aperture 3^x, provided for that purpose. Furthermore, the mold-plate is shaped at the truncated corners
 - 65

4 and 4^x to fit into the mold-lining 5. (See Fig. 10.) The object of these truncated corners is to furnish the roofing-tile with angular offset jointing edges. 70

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

1. In a machine for forming the overlapping fillets on roofing-tiles the combination of the frame 6, with the mold 7 having the mold-plate for the formation of the under side of the roofing-tile, the hopper 9, the bridge 10 connected with the hopper 9, the bell-crank lever 11 pivoted on the bridge 10, and the plate 12 used in the formation of the upper overlapping fillets and connected with the bell-crank lever 11, substantially as and for the purpose set forth. 75 80 85

2. In a machine for forming the overlapping fillets on roofing-tiles, the combination of the bridge 25, with the two plates 37 and 38 connected together movably with reference to one another, by means of screws, the plate 38 being provided with a slotted bolt which is movable vertically in a box or socket 36 connected with the bridge 25, an eccentric 44 operated by a lever 42 pivoted to the box or socket 36, and a pin or projection 45 fixed to the eccentric 44 and taking into a slot 47 in the plate 37, combined, arranged and operating so as to produce firstly a movement of the lower plate 37 toward the right, and secondly an elevation of both plates together, substantially as described. 90 95 100

3. In a machine for forming the overlapping fillets on roofing-tiles, the combination of the bridge 25, with the two slides 23 rigidly connected with the bridge 25, and the hopper 29 adjustably arranged on the slides 23 in such a manner that the hopper can be moved by means of a link 35 and lever 34 to or from the bridge 25, substantially as described. 105

4. In a machine for forming the overlapping fillets on roofing-tiles, the combination of the bridge 25, with the two slides 23 rigidly connected with the bridge 25, the hopper 29 mounted on the slides 23, and a two-armed lever 27 coupled by a connecting-rod with each slide 23, substantially as and for the purpose set forth. 110 115

5. In a machine for forming the overlapping fillets on roofing-tiles, a mold-plate for forming the underside of a roofing-tile, having an opening in the vertical wall for inserting a slide making the recess in the overlapping fillets, and a hollow impress formed on the under side of the plate for guiding the said slide, substantially as and for the purpose specified. 120 125

In testimony that I claim the foregoing as my invention I have signed my name in presence of two subscribing witnesses.

ABRAHAM WEIL.

Witnesses:

MAX MIRUS,
GUSTAV BOGY.