

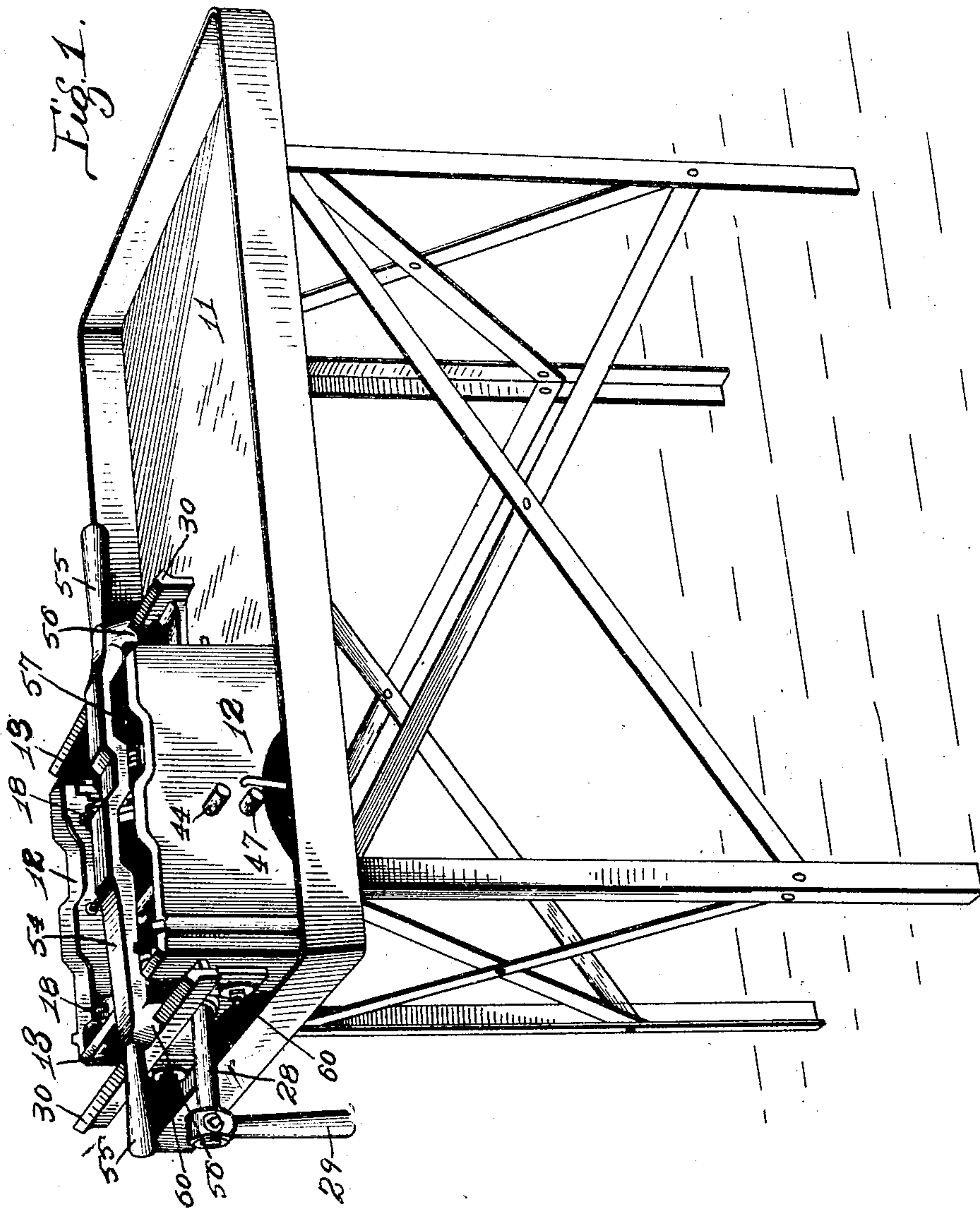
DEVICE FOR MAKING CONCRETE ROOFING TILES.

APPLICATION FILED NOV. 16, 1909.

969.410.

Patented Sept. 6, 1910.

4 SHEETS--SHEET 1.



Witnesses
W. C. Stein
L. A. L. M^cIntyre

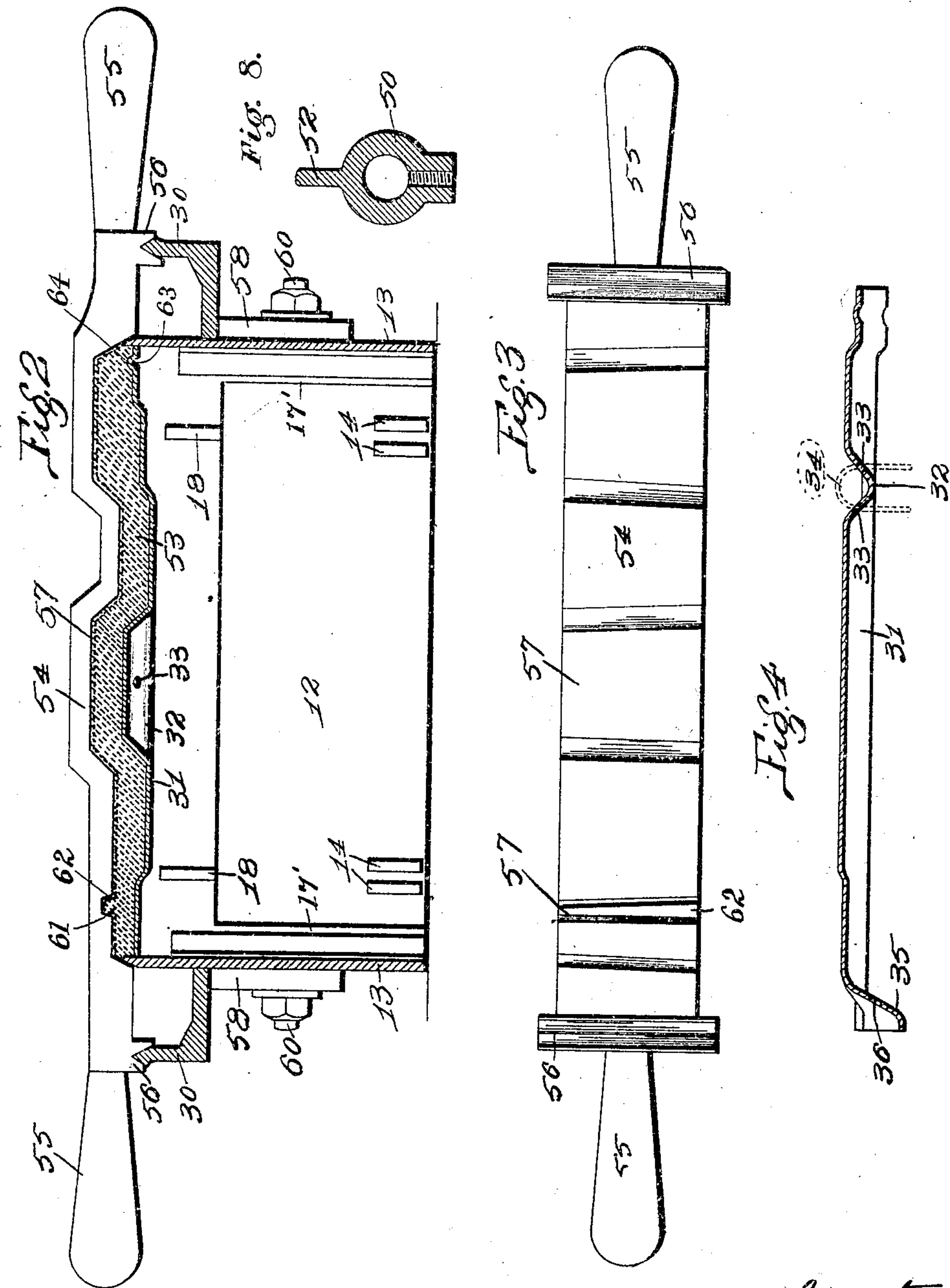
Inventor
Frederick C. Scheiber
By Hopkins & Eick's Atty

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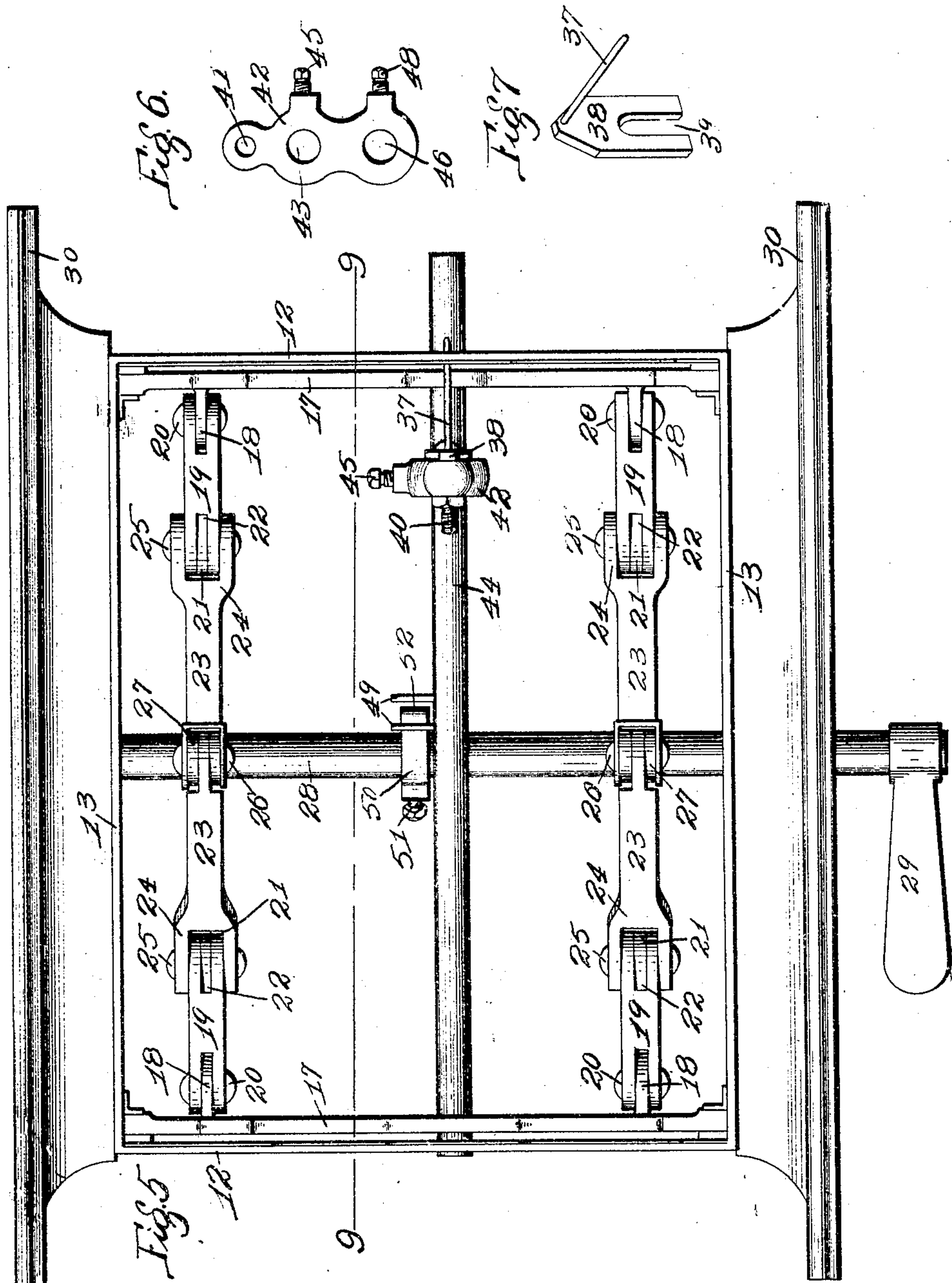
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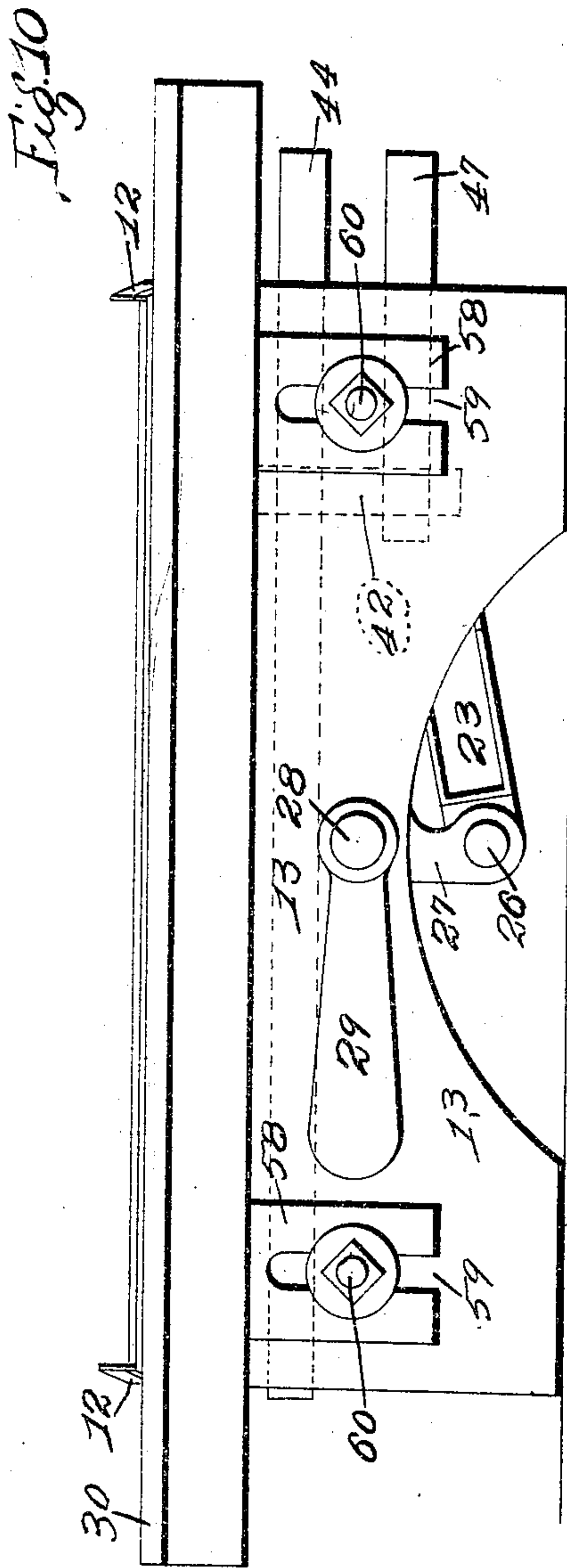
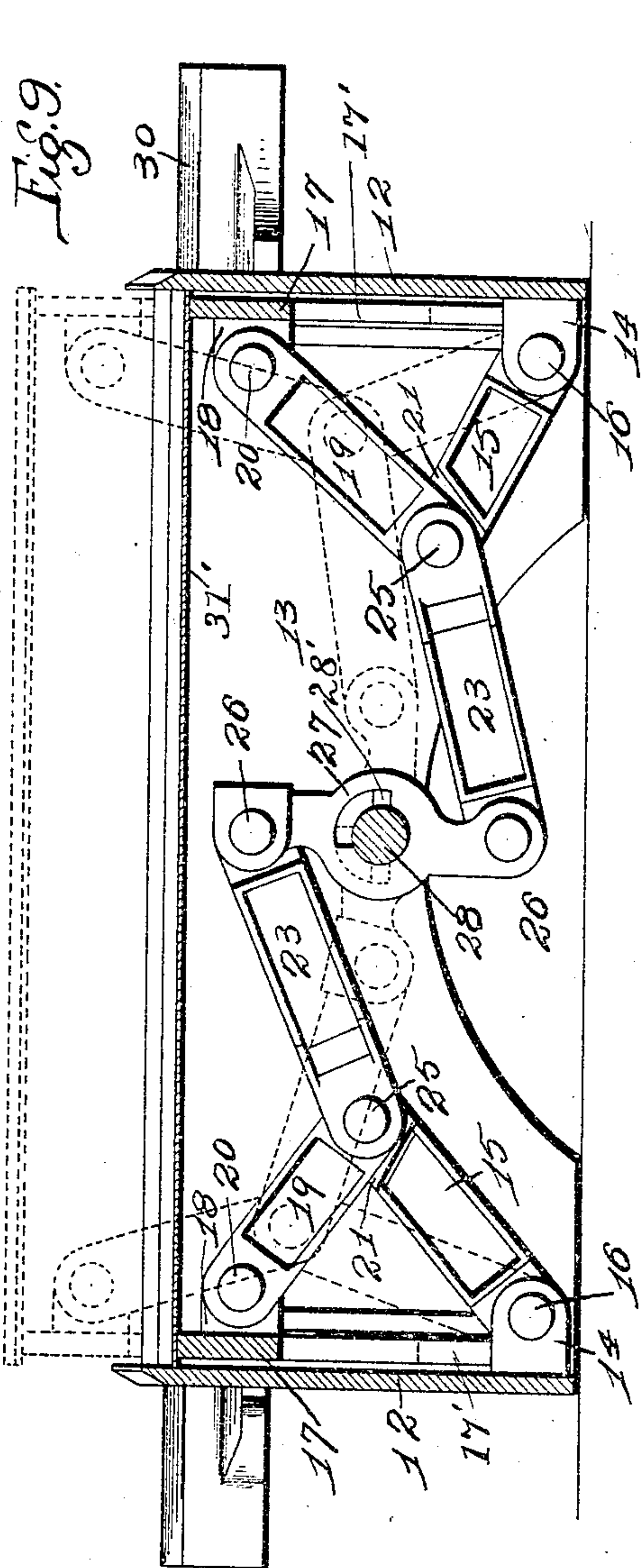
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UNITED STATES PATENT OFFICE.

FREDERICK C. SCHEIBER, OF NEW DOUGLAS, ILLINOIS.

DEVICE FOR MAKING CONCRETE ROOFING-TILES.

969,410.

Specification of Letters Patent.

Patented Sept. 6, 1910.

Application filed November 16, 1909. Serial No. 528,421.

To all whom it may concern:

Be it known that I, FREDERICK C. SCHEIBER, a citizen of the United States, and resident of New Douglas, Illinois, have invented certain new and useful Improvements in Devices for Making Concrete Roofing-Tiles, of which the following is a specification.

My invention relates to improved devices for making concrete roofing tiles, and has for its object to provide an apparatus in which concrete may be received in plastic condition and formed in the desired contour to provide for lapping tiles adapted to engage with each other for the purpose of forming water-proof roofs.

In the drawings—Figure 1 is a perspective view of a device embodying my invention in place upon a mixing table. Fig. 2 is a vertical view of the mold and its supporting frame in cross section, the trowel or shaper being shown in place upon its bearings. Fig. 3 is a bottom plan view of the trowel or shaper employed in my invention. Fig. 4 is a longitudinal view in section of the mold employed in the illustrated form of my invention. Fig. 5 is a top plan view of the supporting frame. Fig. 6 is an elevation of the yoke whereby the parallel slidably mounted rods employed in the device of my invention are secured to each other. Fig. 7 is a perspective view of the perforating pin employed in my invention and carried by the yoke illustrated in Fig. 6. Fig. 8 is a transverse sectional view of the toothed collar by which the parallel slidably mounted rods are actuated. Fig. 9 is a vertical sectional view of the frame taken along the line 9—9 of Fig. 5. Fig. 10 is a side elevation of the frame.

As shown in the drawings, the device of my invention is adapted to be set upon the concrete mixing table 11 and includes a frame having end walls 12—12 and side walls 13—13. The end walls 12—12 are provided near their bottoms with pairs of stationary lugs 14—14 in which one end of the links 15—15 is pivotally mounted by means of the pins 16—16. A pair of mold-supporting bars 17—17 are vertically and slidably mounted above the lugs 14—14 and located against the end walls 12—12 and operating in the guides formed on the side walls 13—13 so as to retain the bars in position and guide the same during its vertical

movement; the bars 17—17 having downwardly projecting portions 17' which operate in the guide-ways on the side walls 13—13, the lower ends of said portion 17' contacting with the bottom of the frame so as to prevent said bars from being lowered farther than the position shown by solid lines in Fig. 9. The said bars 17—17 being provided with projecting tongues 18—18 to which the links 19—19 are pivotally secured by pins 20. The links 15—15 are provided at their inner extremities with tongues 21 (see Fig. 5) adapted to fit within the slots 22—22 with which the inner ends of the links 19—19 are provided. A second pair of links 23—23 are provided at their outer ends with yokes 24—24 which are connected to the ends of the links 15—15 and links 19—19 by pins 25—25 to provide pivotal engagement therewith. The links 23—23 have their opposite ends in vertical alinement with each other and are respectively secured by means of the pins 26—26 to the upper and lower ends of the lever 27 which is provided with a central opening 27', a portion of said opening of larger diameter so as to permit the key 28' formed on the shaft 28 to move freely therein; the reason of this is that when the shaft 28 is operated by means of the handle 29, the shaft will partially rotate independent of the arm 27 until the key comes in contact with the opposite edge of the larger portion of the opening 27', a further purpose of this operation being hereinafter fully set forth. By means of the mechanism thus described the bars 17—17 are held normally at a point slightly below the level of the tops of the end walls 12—12 (see Fig. 9) and when the handle 29 is operated to throw the levers 27 into horizontal position the bars 17—17 will be thrown upwardly as indicated by dotted lines in Fig. 9. Upon the outer upper surface of the walls 12—12 are provided horizontal guides 30—30. The bars 17—17 are contoured on their upper faces to correspond with the shape of and permit the mold 31 to register with the said upper faces of said bars. When the mold 31 is placed in position upon said bars 17—17, said bars are lowered to the position illustrated in Fig. 9, where the mold 31 will be at a point beneath the level of the tops of the end walls 12—12. The concrete mixture is then placed in plastic condition upon said

mold and heaped up until its upper surface is at all points in a plane above the level of the planes of the end walls 12—12 and side walls 13—13.

5 The mold 31 is provided with transverse grooves 32 having perforations 33 to receive a wire loop or the like, indicated by dotted lines 34 in Fig. 4, so that when the concrete tile has been formed said inserted
10 wire loop or the like will remain embedded in place therein while having free ends to admit of its being used as a securing means to hold the tile in place upon the roof.

The mold 31 is provided with a depression 35 having an opening 36, the object of said opening 36 being to permit the stylus 37 to be driven through said opening 36 and the tile molded around the same upon the mold 31 so as to form a hole for the reception of a securing means when the tile is to be set in position. This is accomplished at the edge of the tile; the stylus being made vertically adjustable by being mounted upon a block 38 having the slot 39. The bolt 40
25 passes through the slot 39, through the opening 41 in the yoke 42 to secure the stylus 37 to said yoke 42 in its proper adjusted position. The yoke 42 is provided with an opening 43 whereby the yoke 42 is mounted
30 upon a sliding bar 44 and is secured in place thereon by means of the set screw 45. The yoke 42 has at its lower extremity the opening 46 through which the short bar 47 passes, the yoke 42 being secured in place
35 upon said short bar 47 by means of the set screw 48, and when properly secured both bars 44 and 47 are held rigid and in alignment with each other. The sliding bar 44 is provided with parallel pins 49—49 upon one
40 of its sides. A collar 50 provided with a set screw 51 is mounted upon the shaft 28, the collar being provided with the tongue 52 whose outer end projects between and operates upon the pins 49—49 to throw the bar
45 44 inwardly or outwardly with reference to the end walls 12—12, to place the stylus in position for forming the opening in the tile.

In operating the stylus, the handle 29 is first manipulated, turning the shaft; during
50 this operation the tongue 52 operating against the pins 49 has a tendency to manipulate the bars 44 thereby removing or replacing the stylus in its position, depending upon the manner in which the shaft is
55 turned. For example, if the shaft is revolved in order to place the mold in an elevated position, as shown by dotted lines in Fig. 9, it is necessary first to withdraw the stylus from its position before the supporting bars together with the mold can be elevated, and this is accomplished by the turning of the shaft which will release the stylus
60 and cause the arm 27 to remain stationary until the key 28' contacts with the opposite

end of the enlarged portion of the opening 65 27'; then, by continuing the operation of the shaft, the key will turn the arm 27 in a position as shown by dotted lines in Fig. 9 and cause the supporting bars and mold to be elevated, and when the arm 27 is in its
70 horizontal position, as shown by dotted lines, and to lower the mold to its normal position, as shown by solid lines, a reverse movement is applied to the shaft and the arm and link members will remain inoperative until the
75 key 28' on the shaft contacts with the opposite edge of the larger portion of the opening; and when said key contacts therewith, will again place the arm and links, together with the stylus, in the position as
80 shown by solid lines.

To form the contour of the concrete tile or shingle 53, which is illustrated in section in Fig. 2, I provide a shaper or trowel 54 having at its terminals the handles 55, and
85 upon its lower face is provided the transverse grooved bearing blocks 56—56 which have slidable engagement with the tops of the bars or guides 30—30. The lower face of the shaper is provided with grooves 57 to
90 register with the general contour of the mold 31. The walls of said grooves 57 are at a slight angle to each other or, in other words, wedge-shaped, as illustrated in Fig. 3, so as to compress the concrete as the
95 shaper 54 is drawn over the mold 31. A slab, shingle or tile of concrete thus having been formed, the shaper 54 is removed and the handle 29 operated, turning the shaft which will release the stylus 37, elevate the
100 bars 17—17 clear of the walls 12 and 13 of the frame, so as to permit the ready removal of the contents, together with the mold 31, whereupon a new mold is replaced and the process of forming the mold repeated. The
105 guides 30—30 are made adjustable to regulate the thickness of the tile by being mounted upon supporting plates 58—58 having slots 59 through which bolts 60 pass to secure the supporting plates 58 upon the outer
110 faces of the side walls 13.

By means of the described mechanism it is possible to form the concrete tile of any desired contour of uniform thickness quickly and accurately and with economy of ma-
115 terial, as the surplus concrete removed by the shaper 54 is cast upon the mixing table 11, and the durability of the device as a whole is secured by the mechanical construction described herein, and in which no
120 springs are employed.

The operation of my invention is as follows: To form a tile I first regulate the operating parts in position as shown by solid lines in Fig. 9, and placing upon the upper
125 surface of the supporting bars a mold 31 which is shaped to form the shape of the under side of the tile. The shaft is oper-

ated so that the stylus 37 is in the position as shown in Fig. 5. The mixed concrete is then placed upon the mold between the walls of the frame and the operator then manipulates the shaper or trowel by pulling the same over the mold, said trowel being guided on the guides 30. The groove formed in the under side of the shaper or trowel is tapered or wedge-shaped, as previously described, and during the act of pulling the same over the mold, has a tendency to compress the material at the same time forming the outer contour or upper surface of the tile and after the tile is formulated by the shaper, an elongated projection 61 is formed of the material by means of the groove 62 formed in the shaper and in the mold 31 is formed an elongated projection 63 which forms an elongated groove 64 in the finished tile, the same to correspond in size with the projection 61 so as to form a lock or lap joint when one tile is placed upon the other upon the roof, forming a leak-proof connection. After the material of the mold has been so formulated and sufficiently set, the operator then, by the manipulation of the handle 29, turns the shaft 28, causing the bar 44 to be operated and extract the stylus 37 from the material and mold, and by the continuation of the operation of the shaft, the arm 27 is operated and in turn manipulates the links, causing the same to assume the position shown by dotted lines in Fig. 9, raising the mold, together with its formed tile in a position so the operator can remove the same to a convenient place for drying. After the mold and tile has been removed, the operator places a new mold plate on the supporting bars, lowers the same by the reverse operation of the shaft and then the progress of forming another tile is repeated.

Having thus described my invention, what I claim as new and desire to have secured to me by the grant of Letters Patent, is:

1. In a device of the class described, the combination of a frame, guide bars adjustably mounted at the side of said frame; mold supporting bars transversely mounted within said frame; a shaft, a plurality of for raising and lowering said supporting bars; a mold carried upon said supporting bars; and a scraper slidably mounted upon said guide bars for formulating the tile, substantially as described.

2. In a device of the class described, the combination of a frame, adjustable guide bars mounted at the side of said frame; mold supporting bars transversely mounted within said frame; a shaft, a plurality of connected links for raising and lowering said supporting bars; a mold carried upon said bars; and a scraper slidably mounted upon said guide bars, substantially as described.

3. In a device of the class described, the combination of a frame; guide bars adjustably mounted at the side of said frame; mold supporting bars transversely mounted within said frame; a shaft for raising and lowering said supporting bars; a mold carried upon said bars; a scraper slidably mounted upon said guide bars; a horizontal and slidably mounted stylus; said mold being provided with a perforation to admit of the passage of said stylus into the mold, substantially as described.

4. A device of the class described comprising a frame; a shaft mounted in said frame; an arm loosely mounted on said shaft; a plurality of links connected to said shaft; a pair of mold-supporting bars slidably mounted in said frame; a mold; the upper faces of the supporting bars contoured to conform with the shape of the mold; a pair of guide bars adjustably mounted to the sides of the frame; a horizontal bar located in the frame; a stylus adjustably mounted on said bar; a toothed washer mounted on the shaft and communicating with and operating the bar in combination with a shaper whose under surface is contoured for the formation of the tile, substantially as specified.

5. A device of the class described comprising a frame, two of the walls of said frame having their upper edges contoured to the formation of the tile to be formed; a pair of slidably mounted mold supporting bars located in the frame; a mold supported on said bars, said bars having their upper surfaces contoured to conform with the shape of the mold and the upper edges of the walls of the frame; an operating shaft; a plurality of links connecting the shaft with the mold supporting bars for raising and lowering the same, together with the mold; a pair of adjustably mounted guide bars; a shaper supported on the guide bars, the under surface of said shaper contoured to conform with the shape of the upper edges of the walls, substantially as described.

6. In a device of the class described comprising a rectangular frame; two of the walls of said frame having their upper edges shaped to correspond with the upper surface of the tile to be formed; a pair of guide bars adjustably mounted on two sides of said frame; a shaper supported on the guide bars; an operating shaft extending through the frame; a lever loosely mounted on said shaft; a pair of mold supporting bars located in said frame and supported against two of the walls of said frame, the upper surface of said bars shaped to conform with the two walls of the frame; a mold located on the supporting bars; a plurality of links connecting the lever of the shaft, the end

walls and the mold supporting bars for raising and lowering the mold by the operation of the shaft; and a bar extending through the front and rear walls of the frame, and a stylus mounted on the bar; all of said moving parts being operated by the manipulation of the operating shaft, substantially as specified.

In testimony whereof, I have signed my name to this specification, in presence of two 10 subscribing witnesses.

FREDERICK C. SCHEIBER.

Witnesses:

FRED MICHELS.

E. WARD.