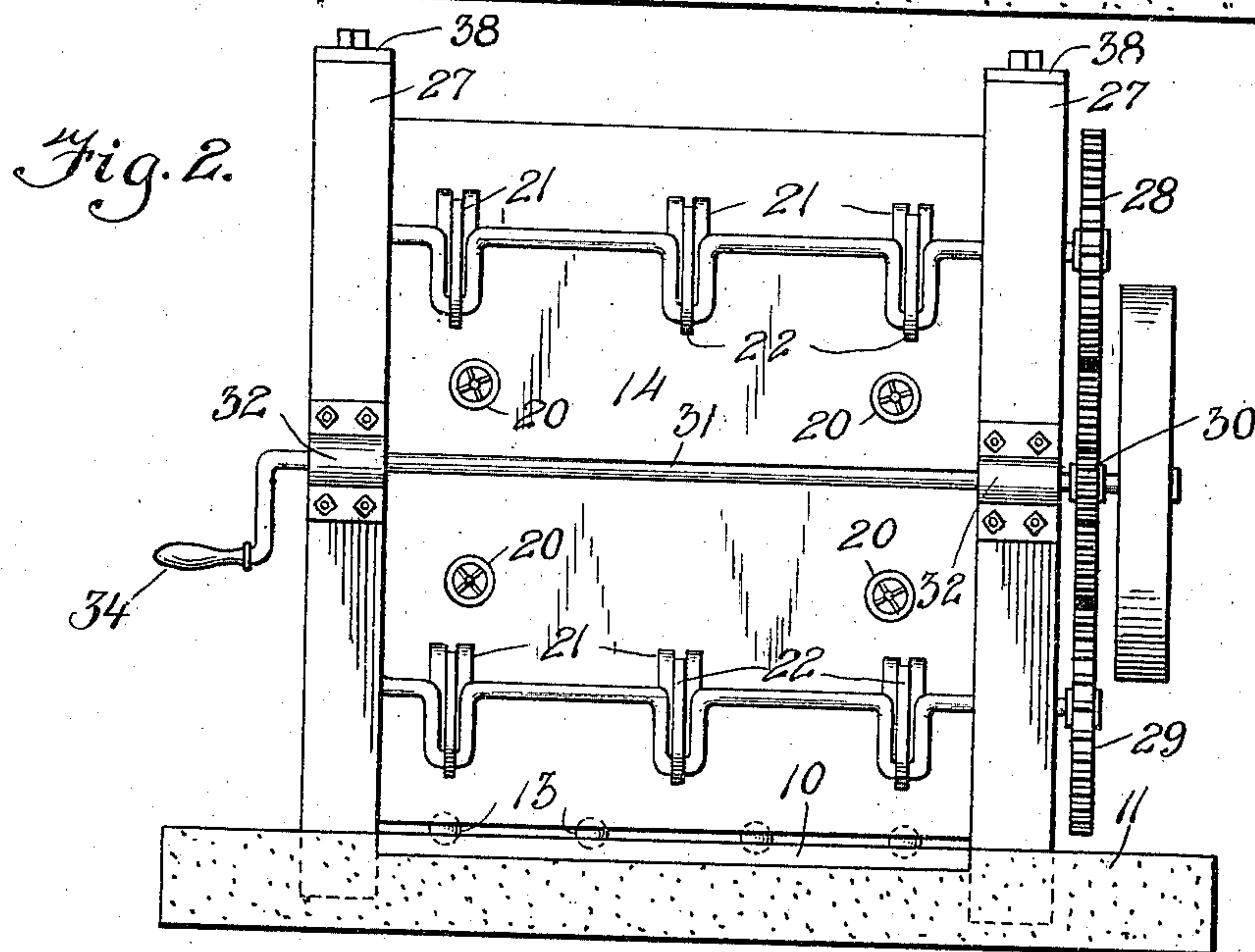
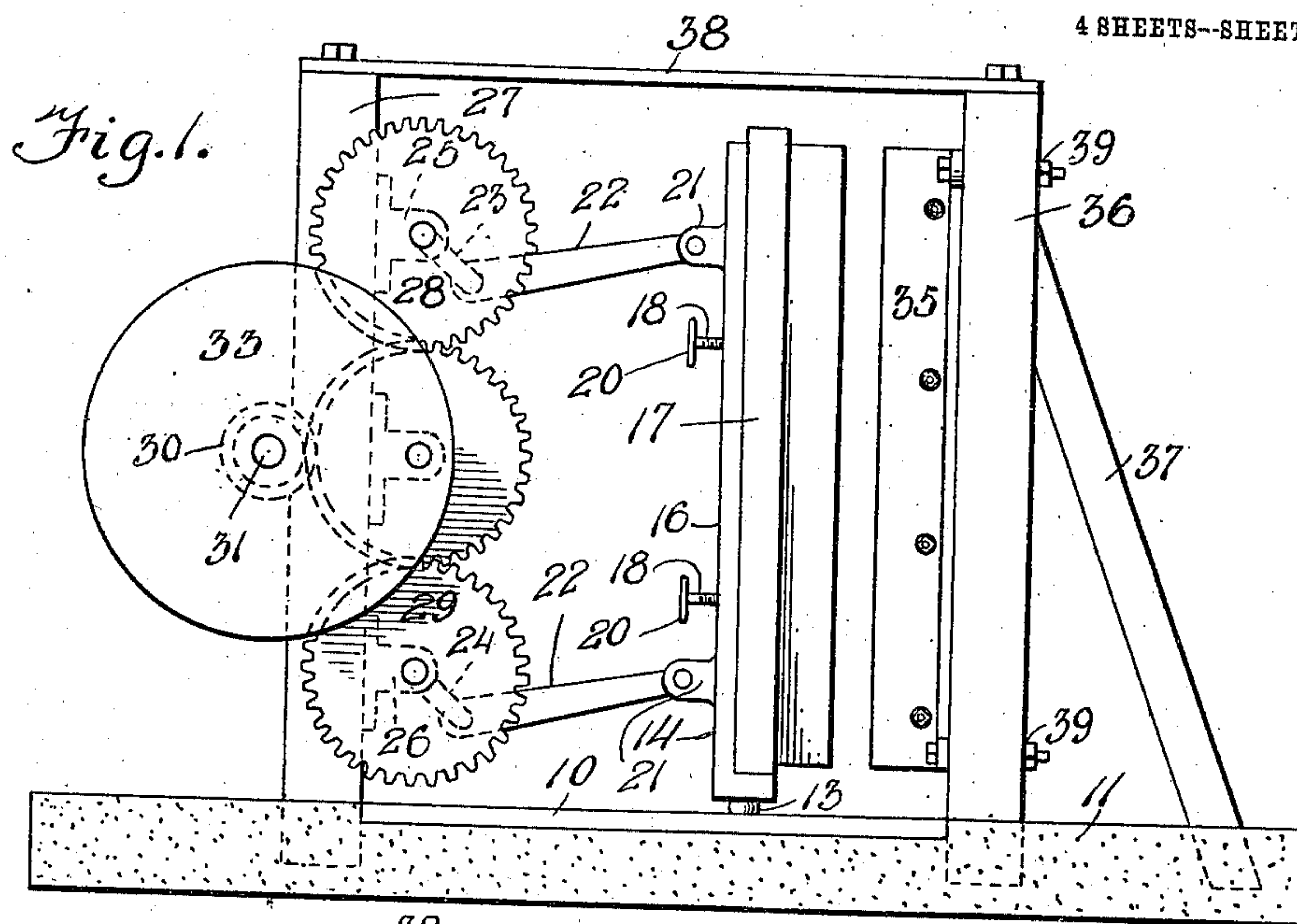


964,061.

Patented July 12, 1910.

4 SHEETS--SHEET 1.



G. M. Spring.
L. E. Barkley.

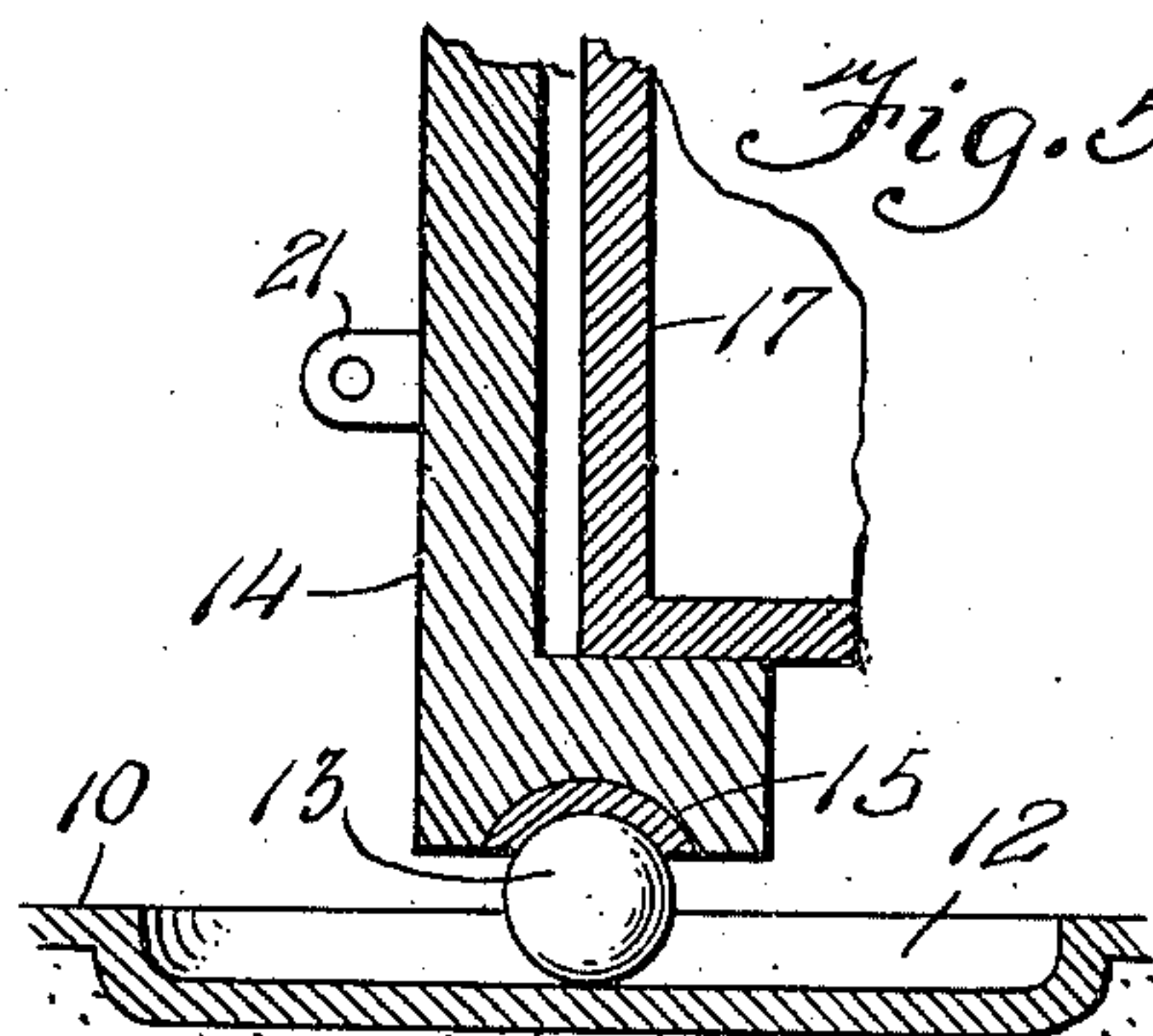
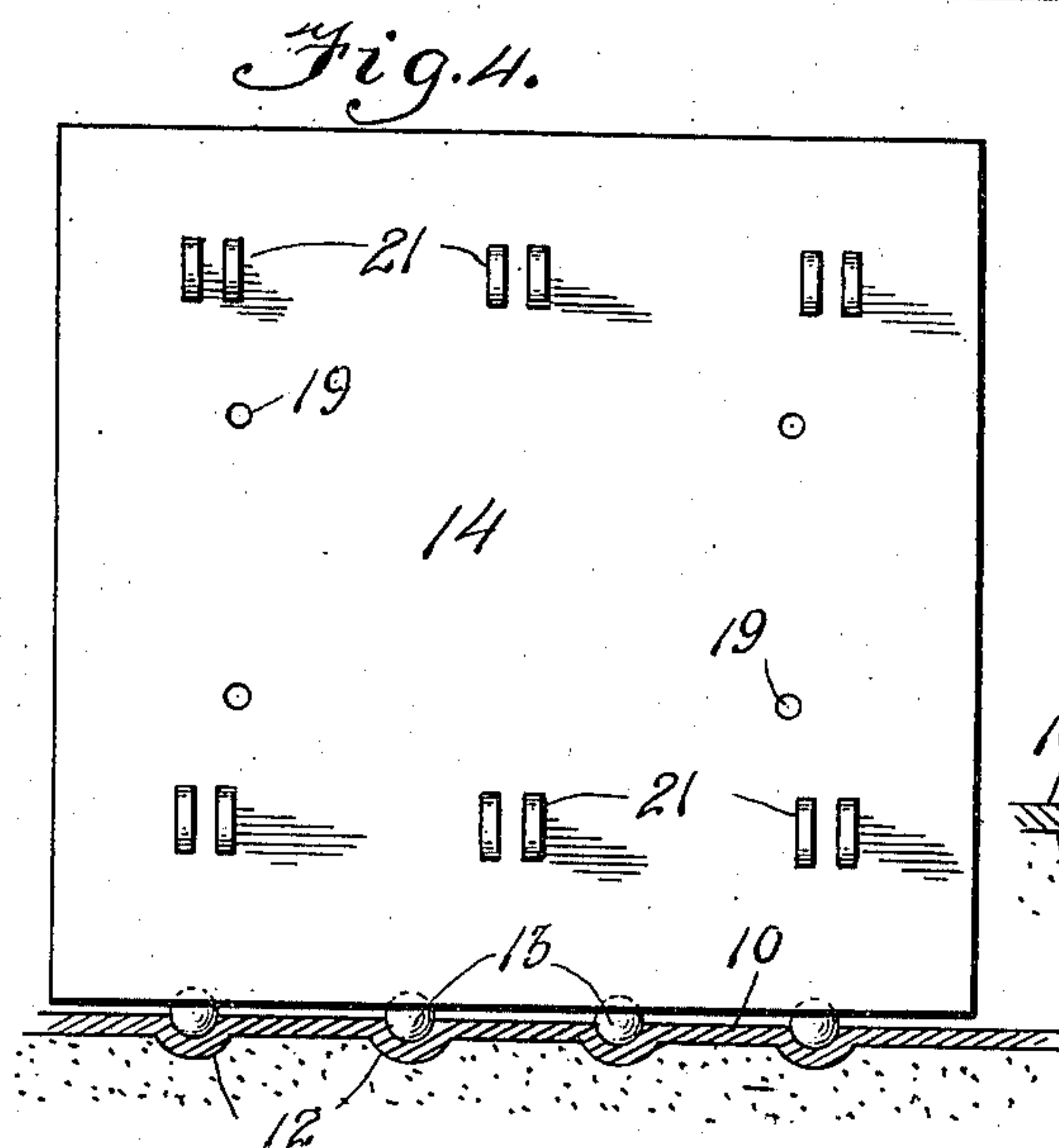
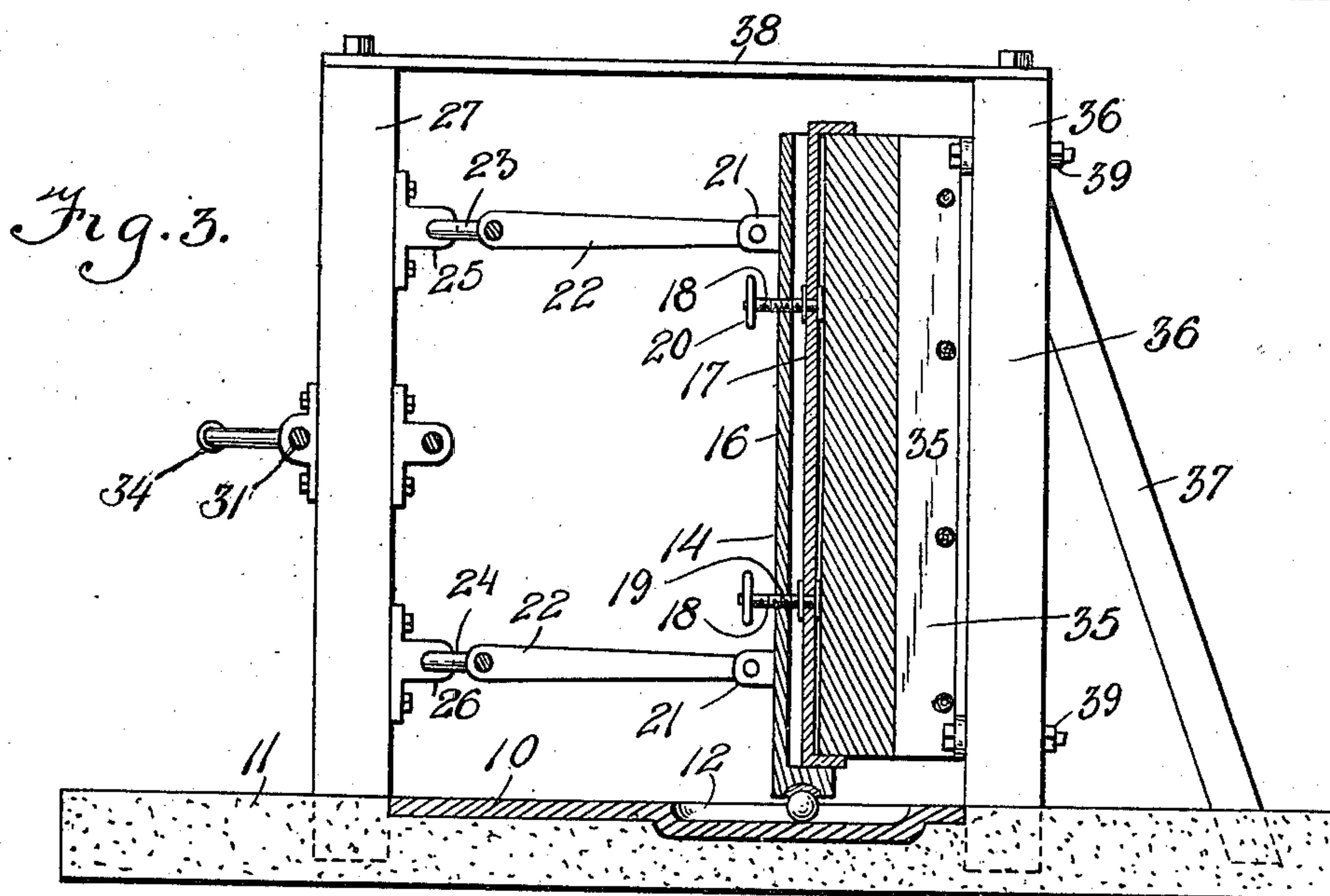
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LEATHER CUTTING MACHINE.
APPLICATION FILED MAR. 8, 1910.

964,061.

Patented July 12, 1910.

4 SHEETS—SHEET 2.



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4 SHEETS—SHEET 3.

Fig. 6.

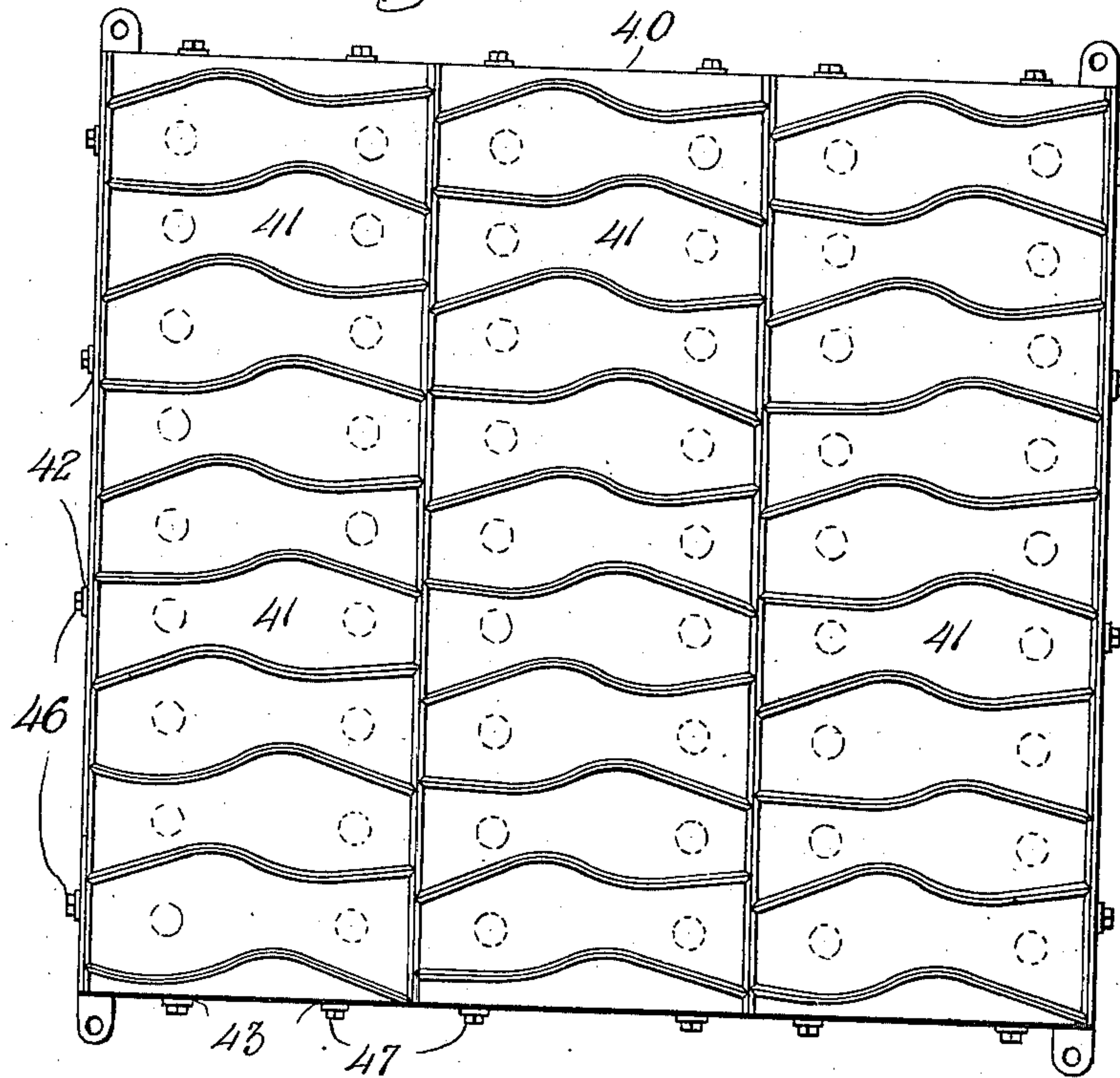


Fig. 7.

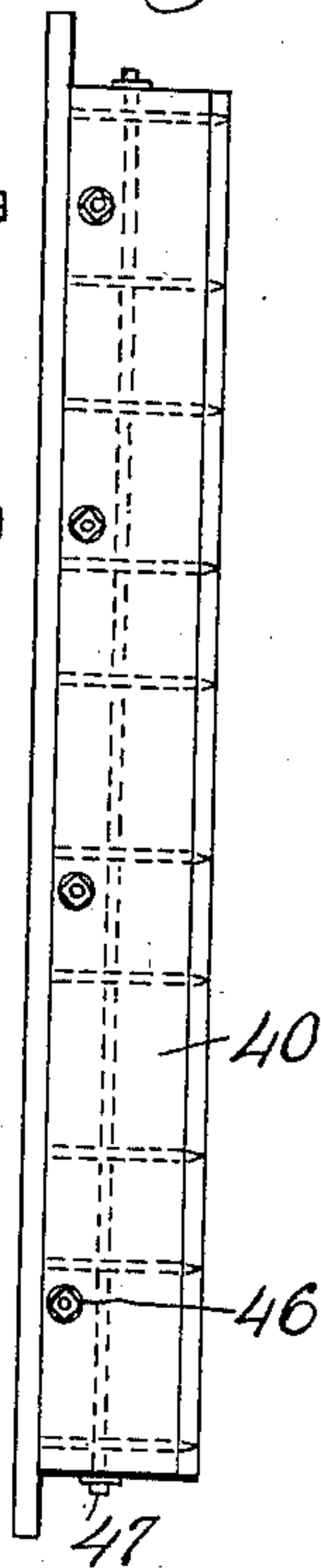
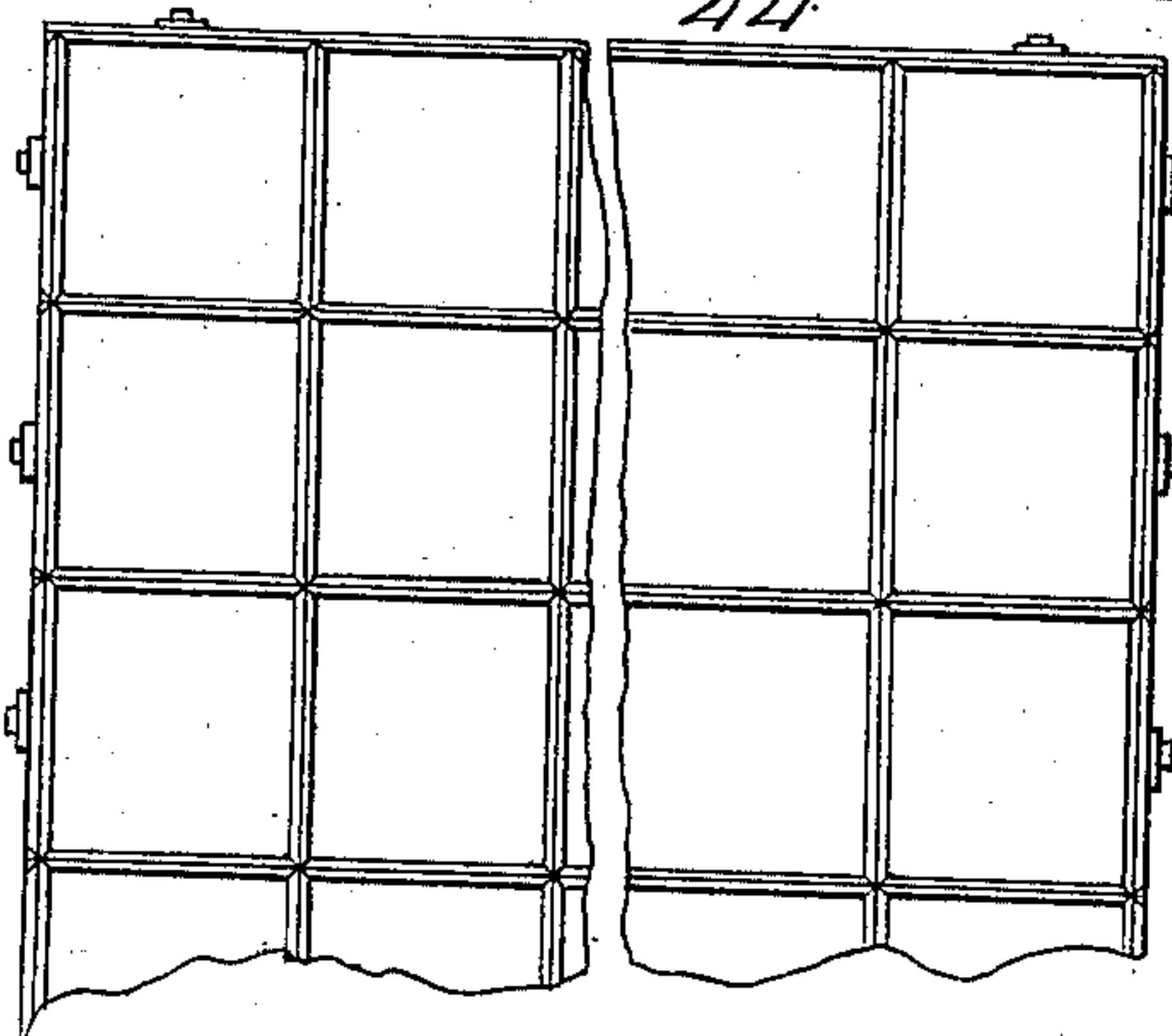


Fig. 8.



Fig. 9.



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4 SHEETS—SHEET 4.

Fig. 10.

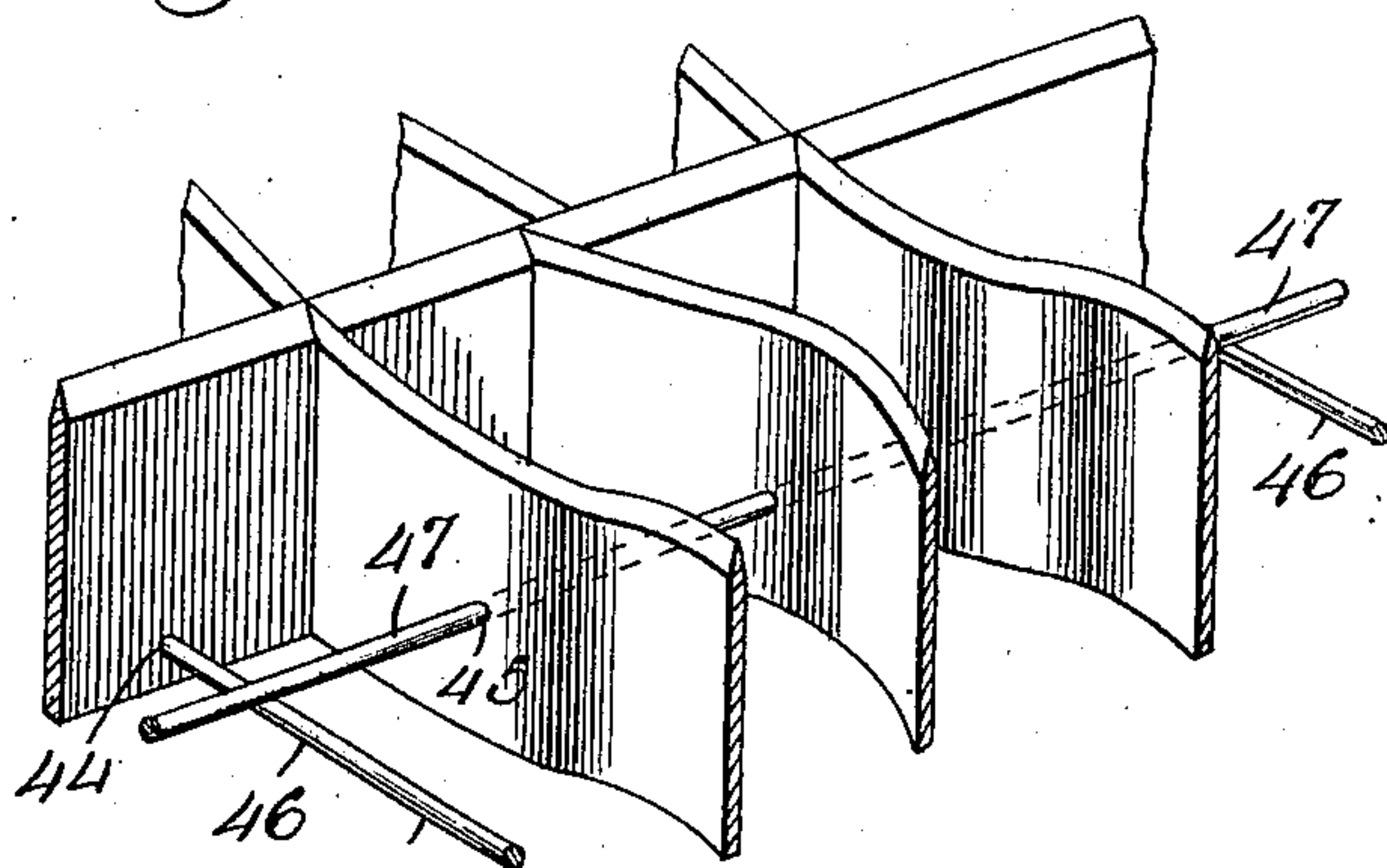


Fig. 11.

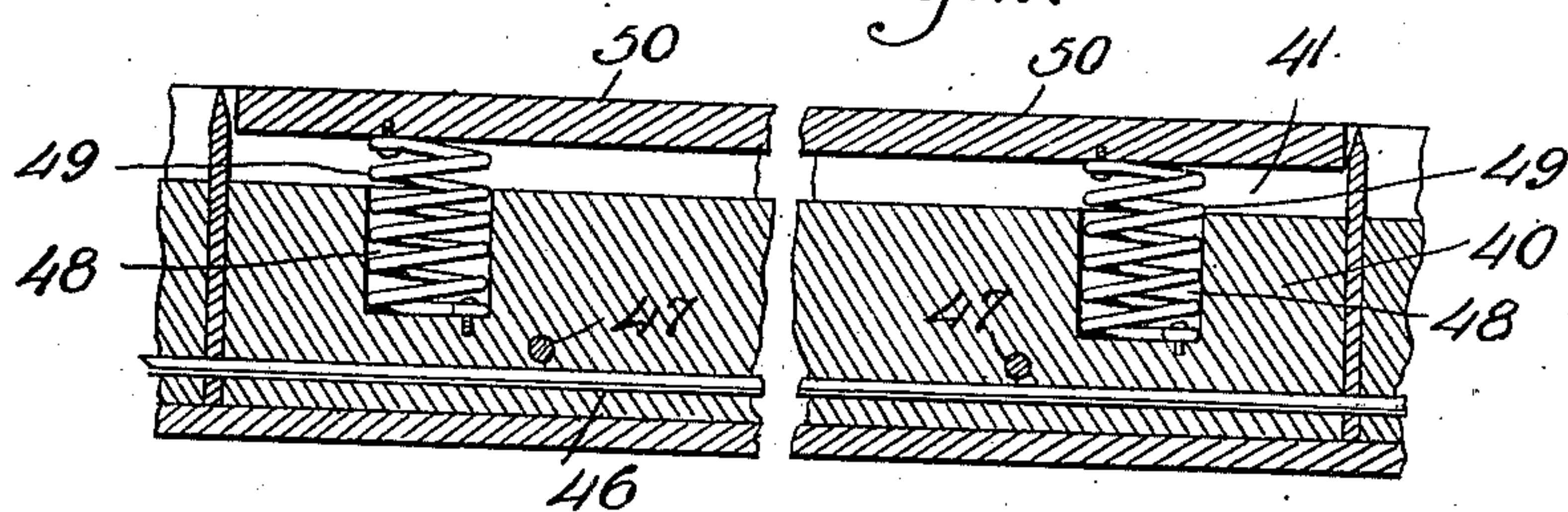


Fig. 12.

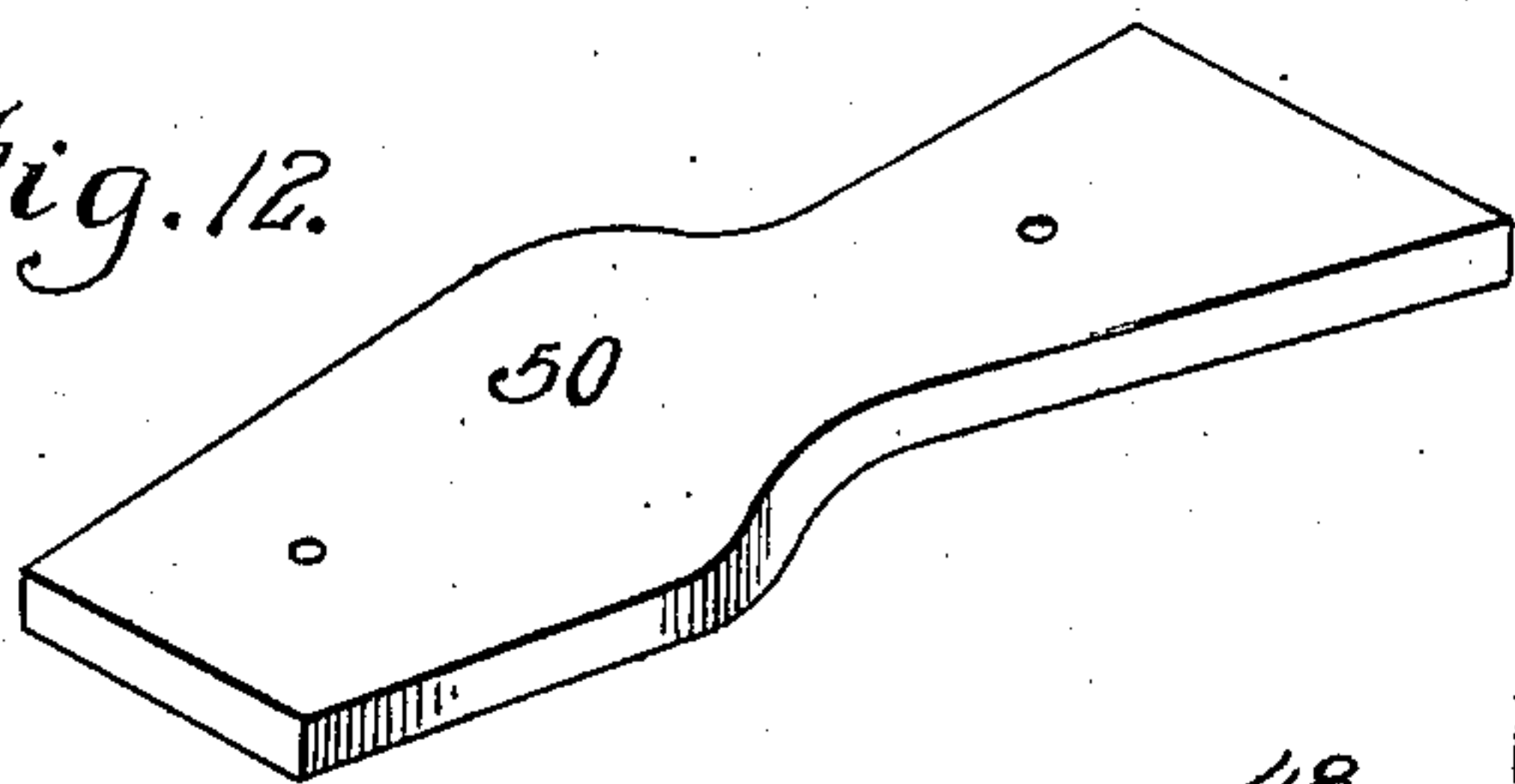
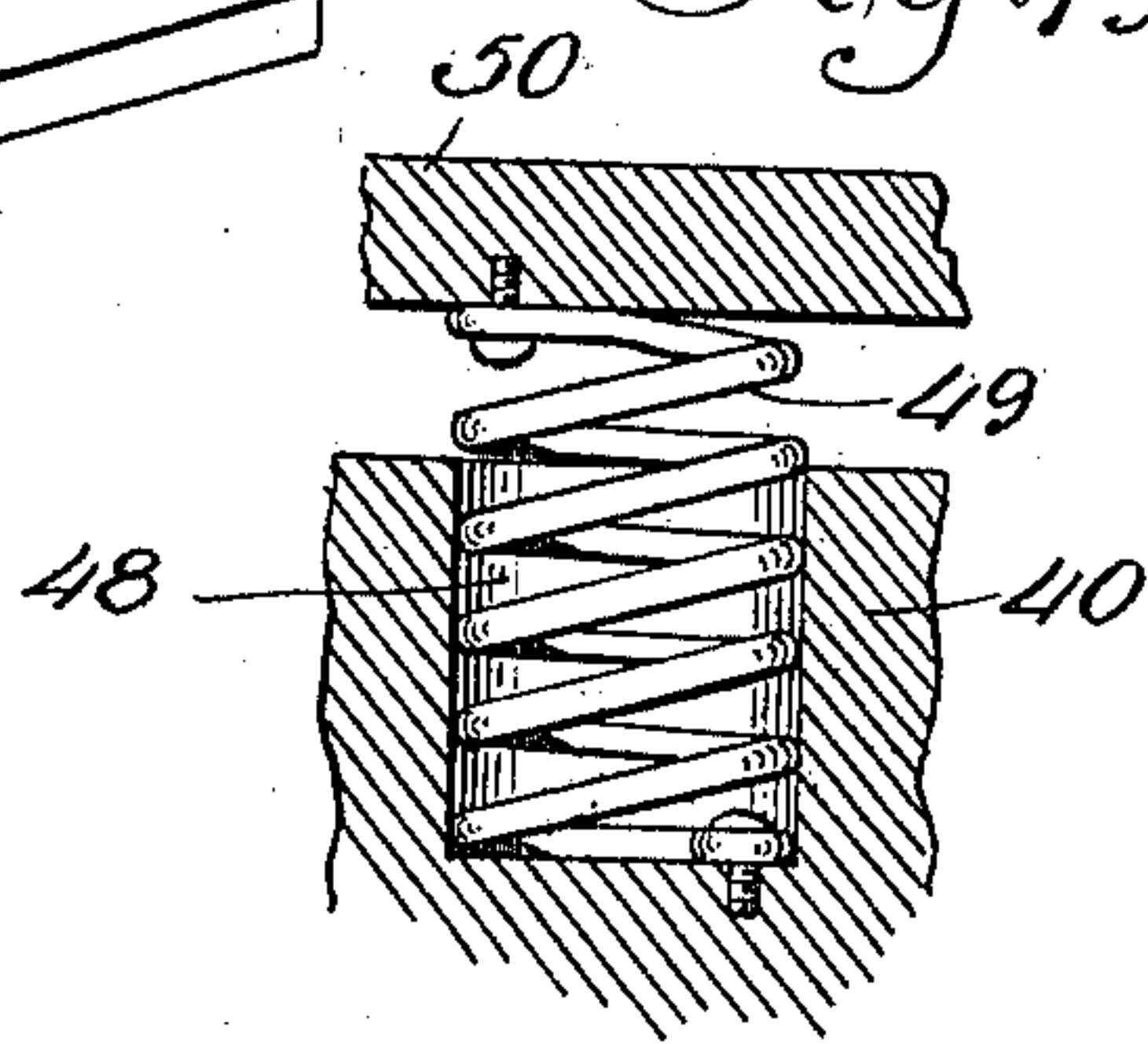


Fig. 13.



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UNITED STATES PATENT OFFICE.

JOSEPH SCHWABER, OF BALTIMORE, MARYLAND.

LEATHER-CUTTING MACHINE.

964,061.

Specification of Letters Patent.

Patented July 12, 1910.

Application filed March 8, 1910. Serial No. 548,091.

To all whom it may concern:

Be it known that I, JOSEPH SCHWABER, a citizen of the United States of America, and resident of Baltimore city, State of Maryland, have invented certain new and useful Improvements in Leather-Cutting Machines, of which the following is a specification.

This invention relates to the general class of cutting and punching machines and particularly to a class thereunder known as die cutters.

An object of this invention is to provide a machine designed primarily for cutting sheets into a plurality of small pieces in which means are provided for causing the pieces which are cut from the sheet to be discharged from the die in order that they may fall within easy access of the operator.

It is a further object of the inventor to produce a machine which will cut strips of material from a side of a hide such as sole leather and it is furthermore his object to provide different forms of cutters in order that heel lifts or caps or full size soles may be cut at each complete cycle of operations of the machine.

A further object of the invention is to produce a novel die block which has associated therewith knives of such contour as to cut the material into the requisite lengths and shapes according to the needs indicated above but the inventor does not wish to be limited with respect to the shape of the material cut, as the knives may be differently arranged to suit particular requirements.

With the foregoing and other objects in view, the invention consists in the details of construction and in the arrangement and combination of parts to be hereinafter more fully set forth and claimed.

In describing the invention in detail, reference will be had to the accompanying drawings forming part of this specification wherein like characters denote corresponding parts in the several views, in which—

Figure 1 illustrates a view in elevation showing the side of the machine embodying the invention; Fig. 2 illustrates an end view thereof; Fig. 3 illustrates a central sectional view; Fig. 4 illustrates a detail view of the plunger with the bed plate in section; Fig. 5 illustrates a sectional view of a fragment of the plunger and the bed plate on an enlarged scale; Fig. 6 illustrates a face

view of the die block; Fig. 7 illustrates a side elevation thereof; Fig. 8 illustrates an enlarged detail sectional view of a fragment of the die block; Fig. 9 illustrates a face view of a die block with the knives arranged in a manner different from that shown in Fig. 6; Fig. 10 illustrates a detail perspective view of a portion of the knives disassociated from the block; Fig. 11 illustrates a detail sectional view of a fragment of the die block showing the plates for dislodging the cuttings; Fig. 12 illustrates a perspective view of one of the plungers; and Fig. 13 illustrates an enlarged detail sectional view showing a fragment of the die block and the spring associated with the plungers.

In the construction of this machine it is the purpose of the inventor to obtain stability without the employment of expensive castings or frames for supporting the operating parts and he, therefore, provides a bed plate 10 which may be supported in any appropriate manner but for the purpose of illustrating an operative device, the said bed plate is here shown as being supported on a base 11 formed of concrete.

The bed plate is provided with a series of longitudinally disposed race-ways 12 in which balls 13 may travel, the said balls being designed for the purpose of supporting the plunger head 14, which plunger head has a series of sockets 15 in its lower edge forming seats for the balls 13. It will be seen from an inspection of the drawing, therefore, that as the plunger head is moved over the surface of the bed plate, it is supported by the balls which travel in the race ways and as the said balls engage the sides of the race ways, the plunger head is prevented from moving transversely of the bed plate but, on the contrary, is held and caused to move in a straight line.

The plunger head as shown is a flange 16, which supports a block holder 17. The rear wall of the block holder has a plurality of screws 18 swiveled to it, the said screws extending through threaded apertures 19 in the plunger head 14, the said screws being provided with hand operated connections whereby the said screws are rotated for the purpose of adjusting the block holder with relation to the plunger head. In the art of leather cutting, it is customary to employ a wooden block which is forced into engage-

ment with the knives utilized for cutting leather and in order to effect a complete severance of the leather, the knife edges are usually caused to embed themselves in the block. Multiplied repetitions of this operation result in impairment of the surface of the block to such an extent as to necessitate its being dressed down until the surface that has been impaired by the knives has been entirely removed and an uncut portion of the block is presented to the knives. Such removal of the face of the blocks results, of course, in reducing it in thickness and it becomes necessary, therefore, to provide means for compensating for the diminished size of the block. It is, therefore, that the screws 18 are provided in that it supplies means for moving the face of the block nearer to the knives and holding it in position on the flange of the plunger head.

As a means for reciprocating the plunger head, I provide the said plunger head with a series of lugs 21 to which I pivotally connect the links or pitmen 22, the said pitmen being connected at their outer ends to the cranks 23 and 24 which cranks are journaled in bearings 25 and 26 respectively secured on the uprights or posts 27 which are at the rear of the apparatus. It is the purpose of the inventor to anchor the posts in the base to a sufficient extent to insure rigidity for it is understood that there will be great strain on the posts when the block is forced against the knives. The crank shafts 23 and 24 have spur gear wheels 28 and 29 respectively which take motion from a pinion 30, the said pinion being mounted on a shaft 31 journaled in bearings 32 on the posts 27. The shaft 31 is provided with a fly wheel 33 and a crank handle 34 by which it is turned but instead of the crank handle it is understood that a power transmitting means may be mounted on the shaft for the purpose of driving the said shaft by means other than an operator.

From an inspection of the drawing, it will be understood that so far as described, the mechanism would cause the reciprocation of the plunger head when the shaft 31 is rotated for as the cranks 23 and 24 rotate they would reciprocate the pitmen and move the plunger head over the surface of the bed plate.

The die block 35 is backed against the posts 36 which have their ends embedded in the base and the posts are further provided with braces 37 which have their ends embedded in the base but have their upper ends engaging the posts. While this is one convenient means of bracing the structure, it is to be understood that the posts may be placed against a wall or other fixed object and the inventor therefore does not wish to be limited with respect to this detail of construction. As a further means for bracing

the structure, I provide the bars 38 which rest on the tops of the posts 27 and 36 and are secured thereto by bolts or lag screws so that strain of the pressure between the two bottoms of the lower ends of the posts are embedded in the base, a strong and rigid structure is afforded. The die block may be attached to the posts in any appropriate way as by means of screws 39 extending through the posts and into the said die blocks.

In the construction of the die block, I provide a body 40 having slots or recesses 41 therein shaped to the contour of the article to be produced. That is to say if the material is to be cut into strips, the slots or recesses would run straight longitudinally and transversely of the block whereas if whole soles are to be cut, the slots in the body would be of the configuration shown in Fig. 6. In either case, knives of the contour of the recesses or slots would be supplied thereto with the cutting edges of the knives slightly above the surface of the body in order that the block heretofore referred to may be pressed against the cutting edges of the knives for the purpose of severing the material. For the purpose of attaching the knives to the bodies, I provide longitudinally disposed apertures 42 and transversely disposed apertures 43 and I provide the knives with apertures 44 and 45 which are designed to register with the apertures 42 and 43 respectively. I then employ the bolts 46 and 47. The bolts 46 are run through the apertures 42 and 44 and the bolts 47 are run through the apertures 43 and 45. Thus one fastening device is employed for a plurality of knives and it is possible to assemble and dismantle the die cutters by the manipulation of comparatively few parts.

For the purpose of dislodging the material cut by the dies, the body of the die block has its face provided with one or more recesses for each of the forms to be cut. For instance, if heel lifts or caps are to be cut, the area of which is very small, but one recess would be provided for each form but if whole soles or strips of leather are to be cut, it would be desirable to provide two recesses for each form. Therefore, a recess such as 48 or a plurality of such recesses are provided in the face of the die block and a spring or springs 49 are seated therein and are in length in such relation to the depth of the recesses as to project slightly beyond the face of the die block. The springs are connected to plates or plungers 50 against which the material is pressed by the cutter block when the said cutter block is brought into engagement with the knives. As the cutter block recedes from the edges of the knives or plungers, actuated by the springs, the cuttings are forced from the knives and

since the cutter block is in vertical position, the said cuttings will fall to the bed plate and can be drawn to one side by a scraper or the like.

5 It will be seen, therefore, by those skilled in the art that this machine will have unusual capacity for the reason that the knives are cleared simultaneously with the removal of the block from the cutting edges of the
10 knives and that each piece cut by the operation of the knife need not be handled separately but that the cuttings will fall by gravity as stated.

I claim—

15 1. In a cutting machine, a bed plate having channels in its upper surface, a plunger head having sockets in its edge, anti-friction members in the sockets and in the channels of the bed plate for supporting the plunger head,
20 means for reciprocating the plunger head, a block holder on the plunger head, a block in the holder, screws threaded in the plunger head and connected to the block holder for adjusting the same, a die block, and means
25 for supporting the die block in operative relation to the plunger head.

2. In a cutting machine, a bed plate having channels therein, posts extending upwardly from the surface of the bed plate,
30 journal bearings on the posts, cranks journaled in the bearings, a plunger head, anti-friction members interposed between the plunger head and the bed plate by which the said plunger head is supported, means
35 for connecting the plunger head to take motion from the crank shaft, and braces on the upper ends of the posts.

3. In a cutting machine, a bed plate having channels therein, posts extending upwardly from the surface of the bed plate,
40 journal bearings on the posts, cranks journaled in the bearings, a plunger head, anti-friction members interposed between the plunger head and the bed plate by which the said plunger head is supported, and
45 means for connecting the plunger head to take motion from the crank shaft.

4. In a cutting machine, a die block comprising a body having a plurality of seats
50 or channels of the configuration of the arti-

cle to be cut, knives seated therein having their edges outlining the shape of the article to be cut, the said body having longitudinally and transversely disposed apertures intersecting the channels or seats for the
55 knives, and the said knives having apertures coinciding with the apertures of the body, and bolts extending through the apertures of the body and through the apertures of the knives for retaining the said knives in as-
60 sembled relation to the body.

5. In a cutting machine, a die block comprising a body having a plurality of seats or channels of the configuration of the article to be cut, knives seated therein having
65 their edges outlining the shape of the article to be cut, the said body having longitudinally and transversely disposed apertures intersecting the channels or seats for the knives, the said knives having apertures co-
70 inciding with the apertures of the body, bolts extending through the apertures of the body and through the apertures of the knives for retaining the said knives in assembled relation to the body, and plunger plates in
75 the body for dislodging the cuttings from the knives.

6. In a cutting machine, a die block comprising a body having a plurality of seats or channels of the configuration of the article
80 to be cut, knives seated therein having their edges outlining the shape of the article to be cut, the said body having longitudinally and transversely disposed apertures intersecting the channels or seats for the knives,
85 the said knives having apertures coinciding with the apertures of the body, bolts extending through the apertures of the body and through the apertures of the knives for retaining the said knives in assembled rela-
90 tion to the body, the said body having recesses in its face, springs seated in the recesses, and plunger plates connected to the outer ends of the springs.

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

JOSEPH SCHWABER.

Witnesses:

KARL A. M. SCHOLTZ,
JERE J. SANTRY.