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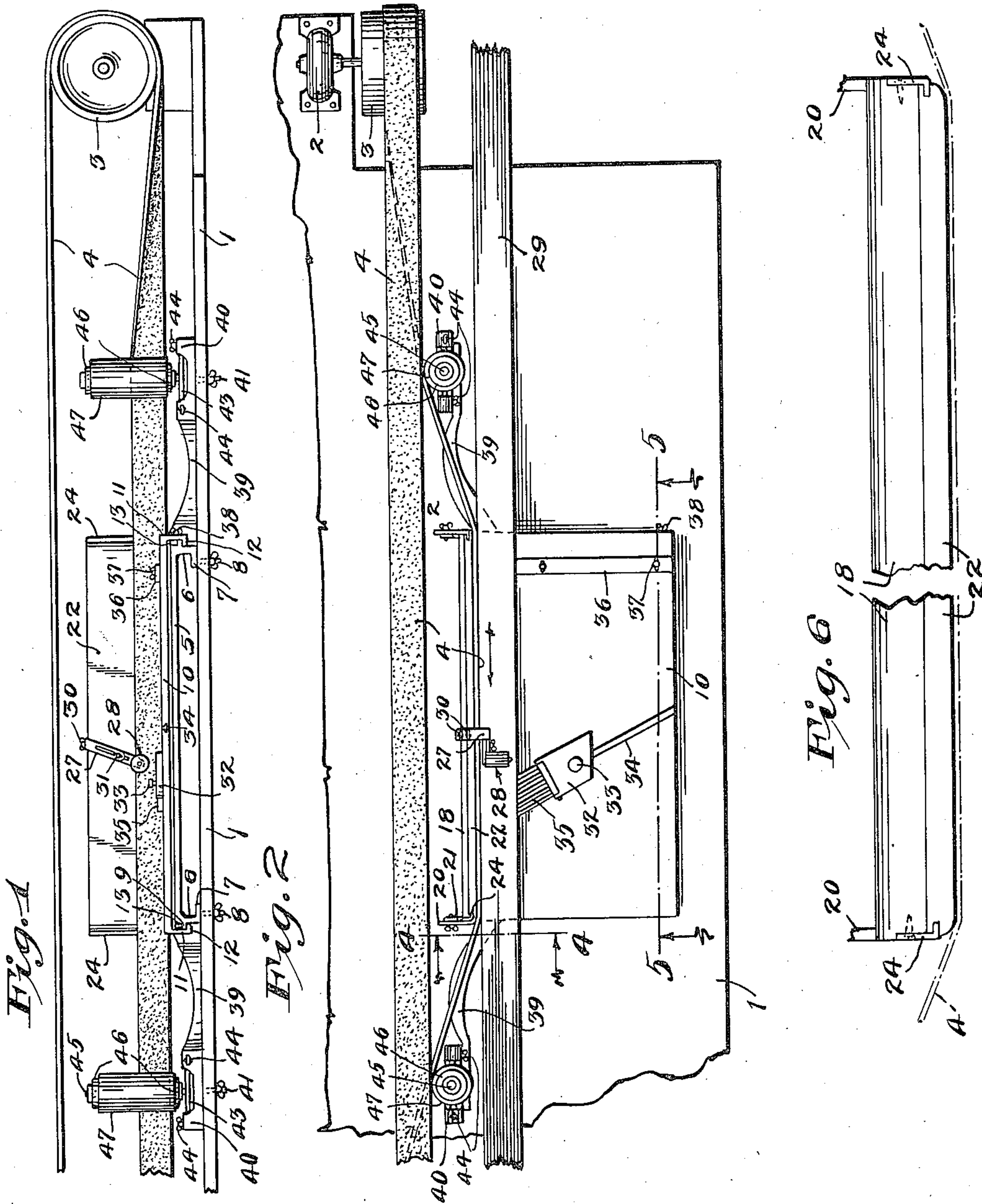
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2,012,163

SANDING APPARATUS

Filed Dec. 31, 1931

3 Sheets-Sheet 1



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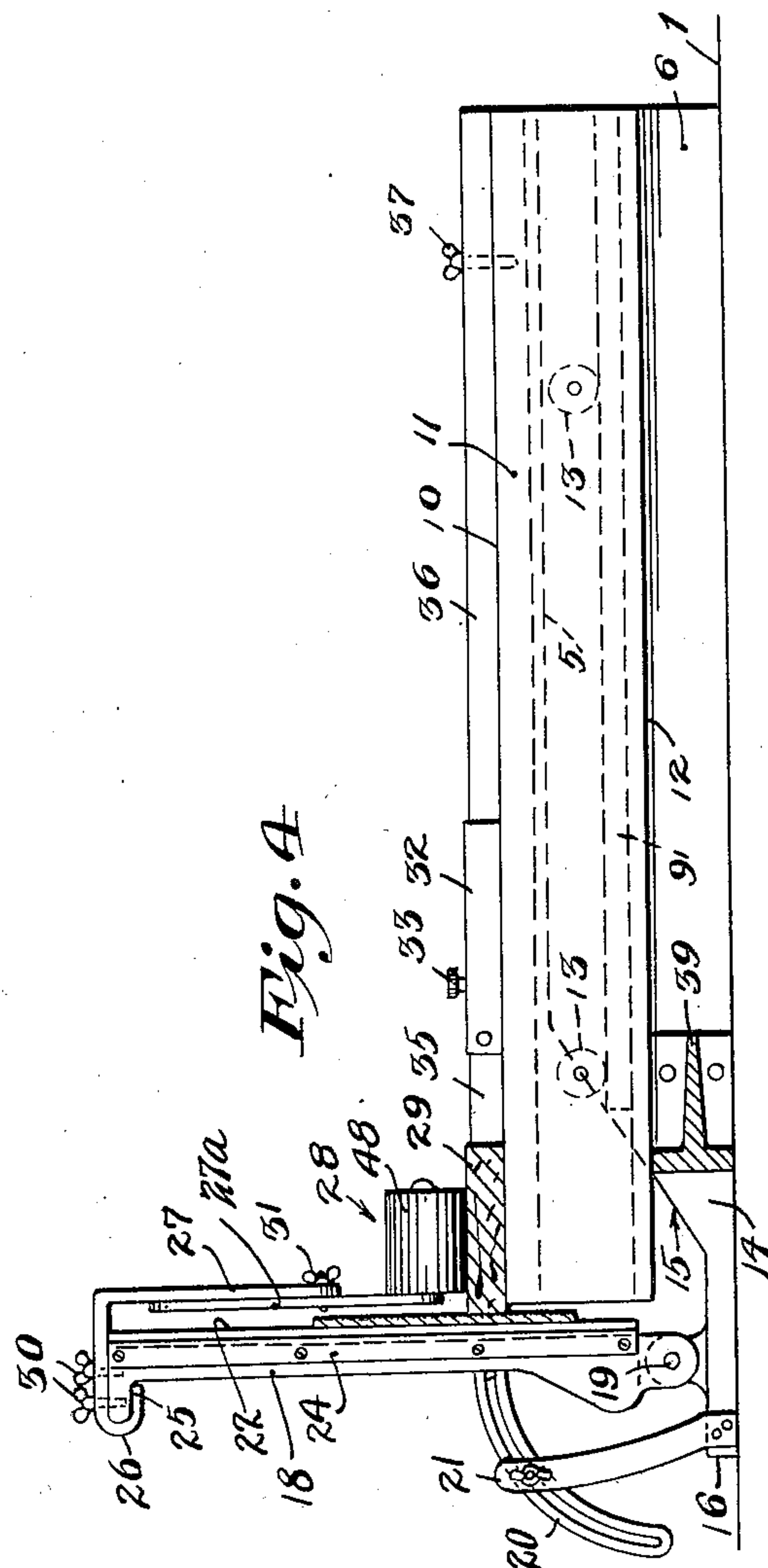
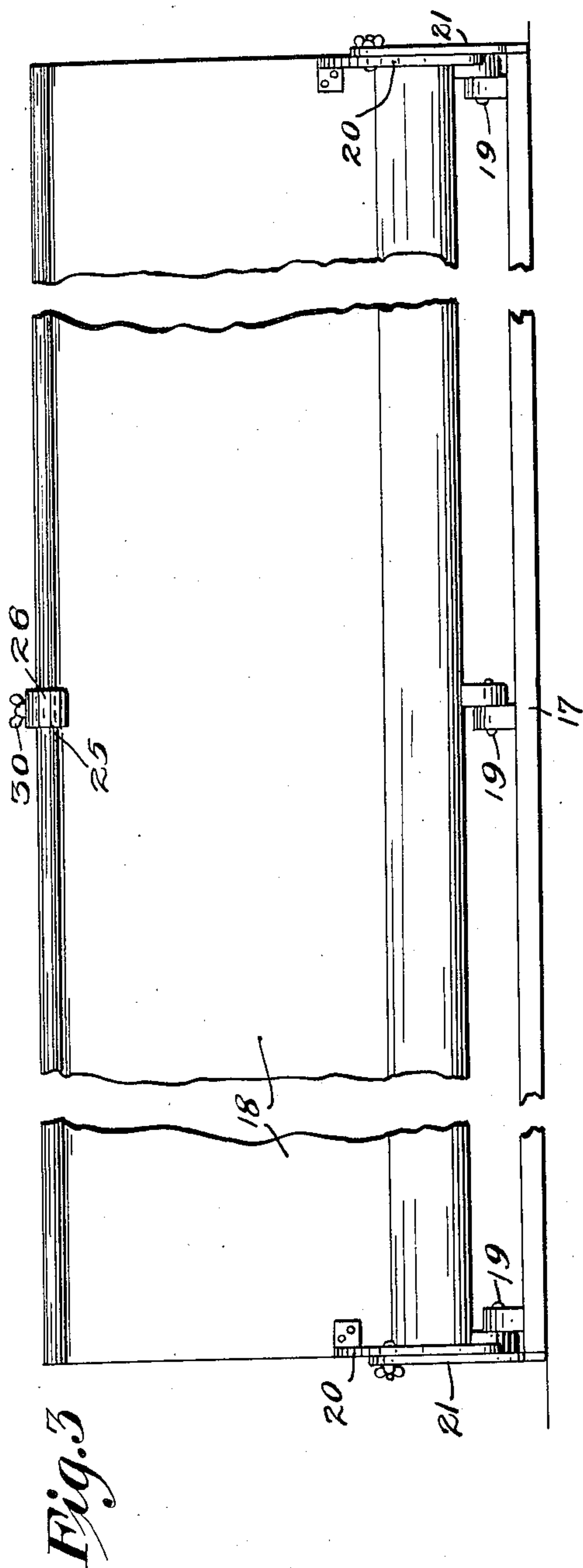
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3 Sheets-Sheet 2



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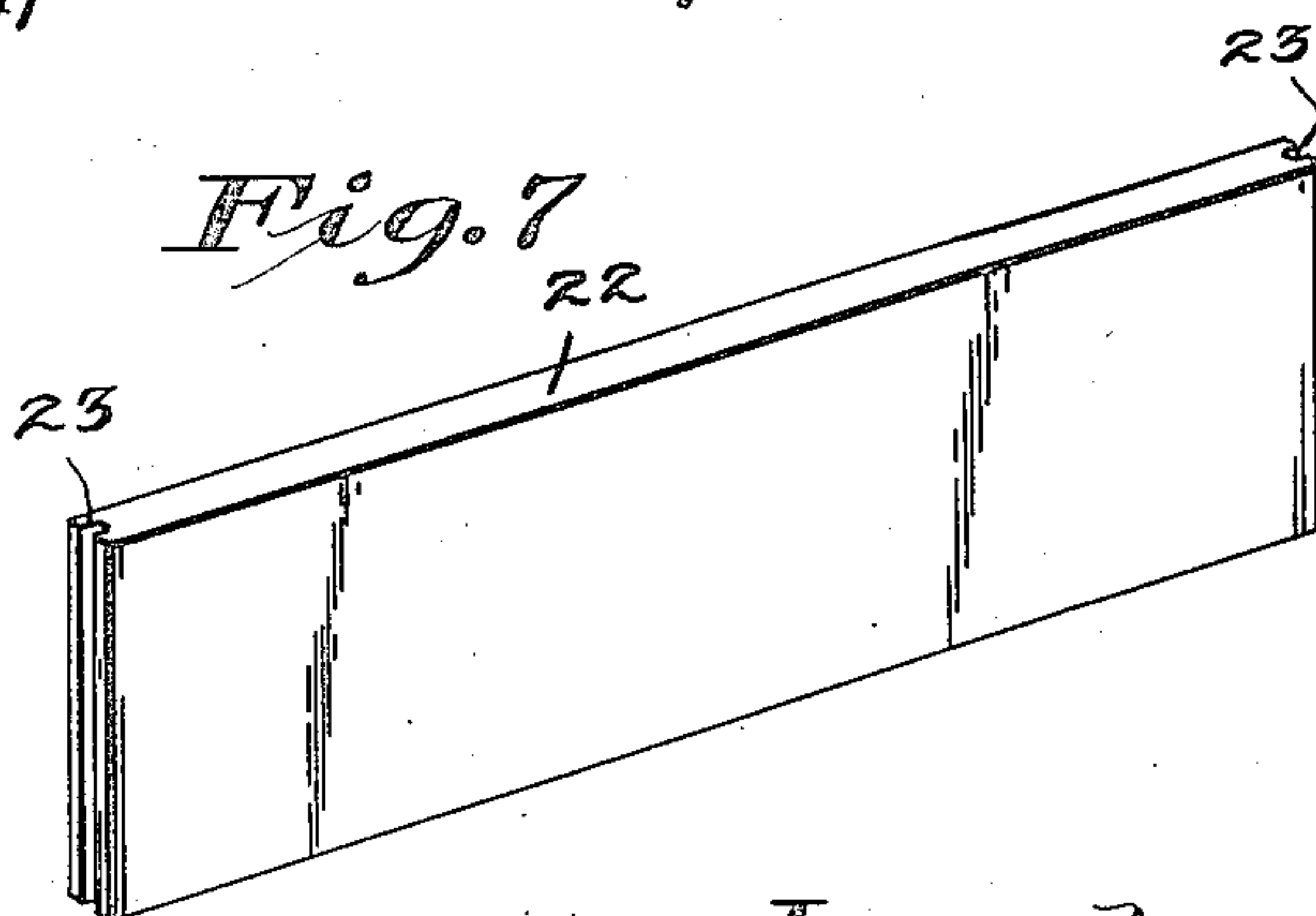
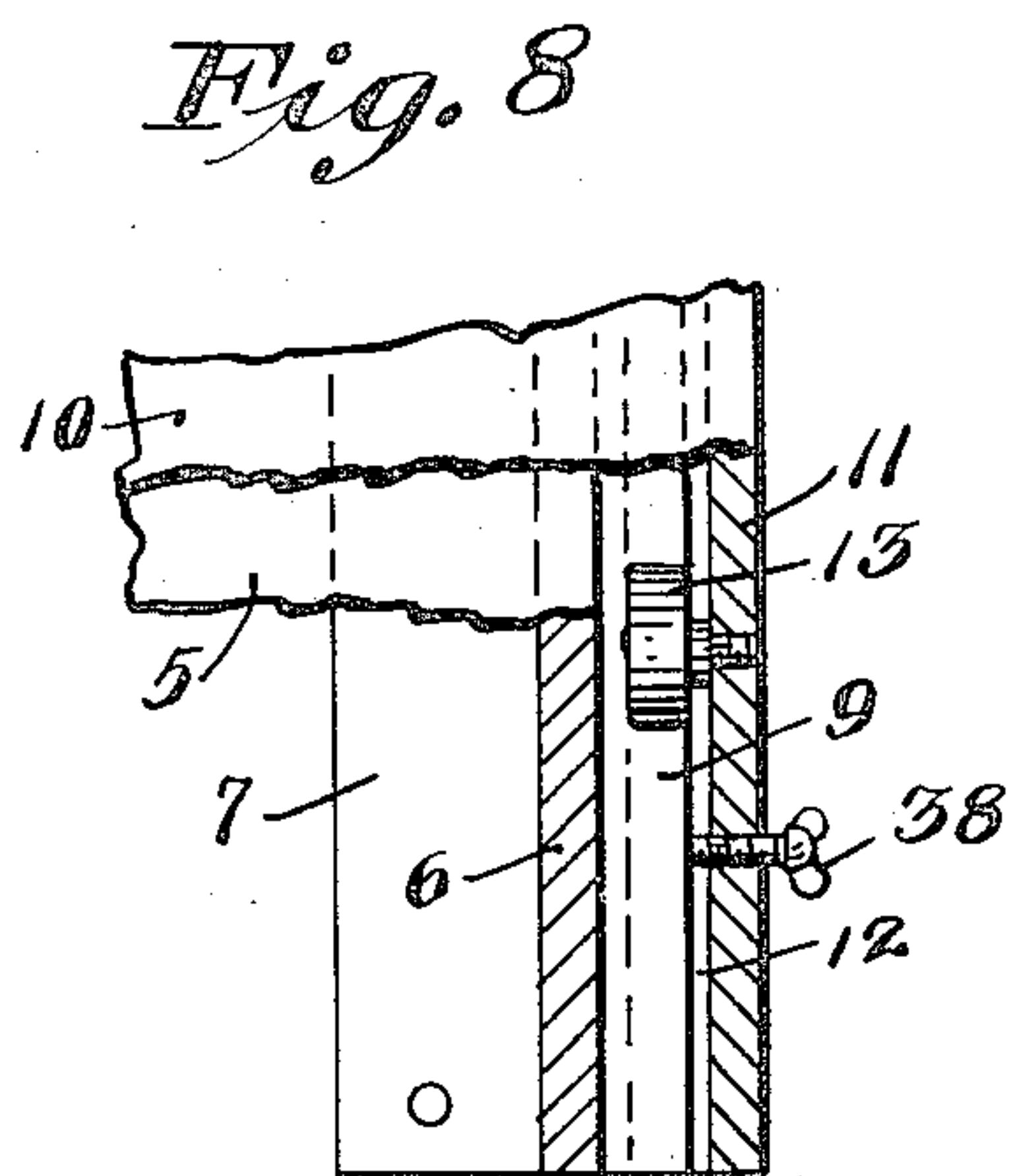
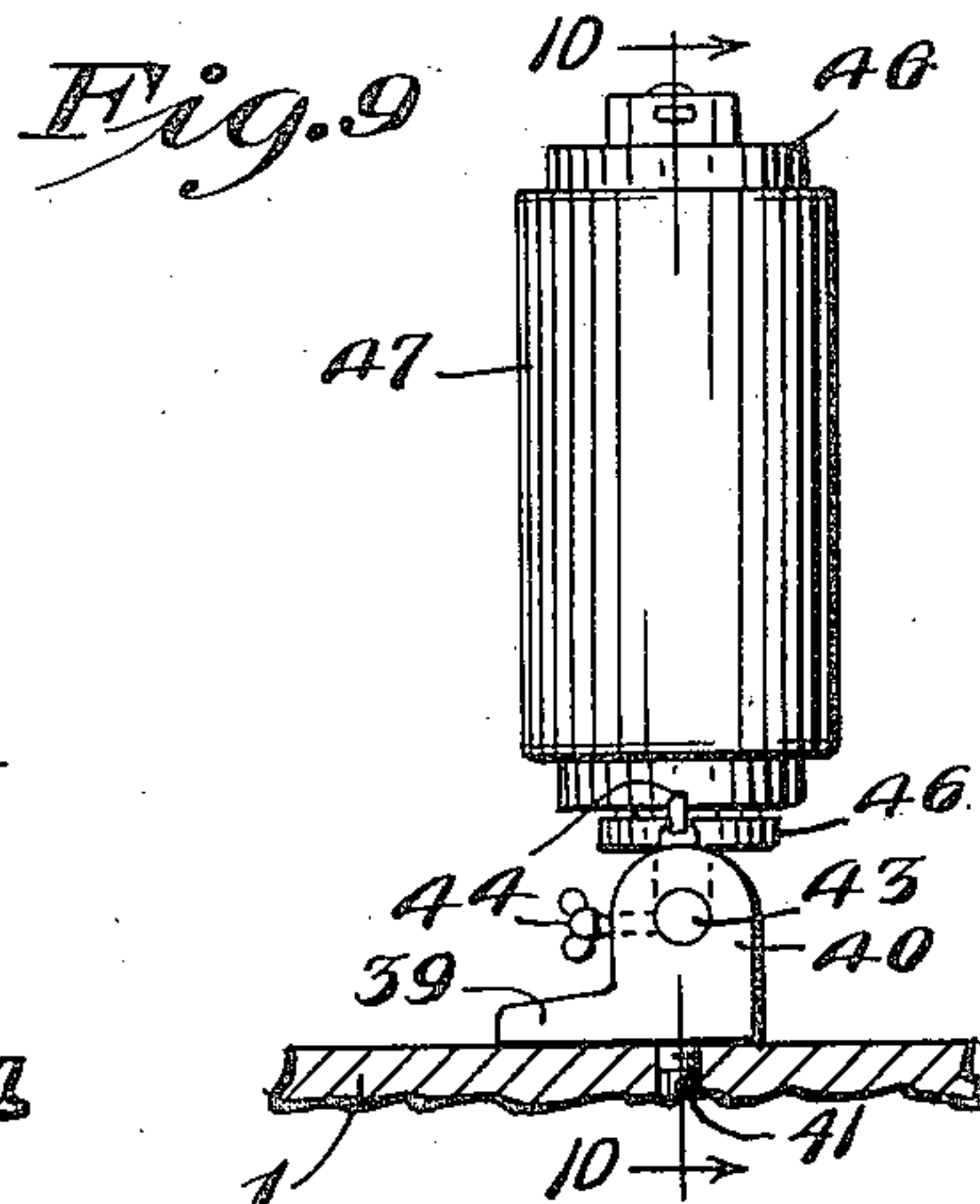
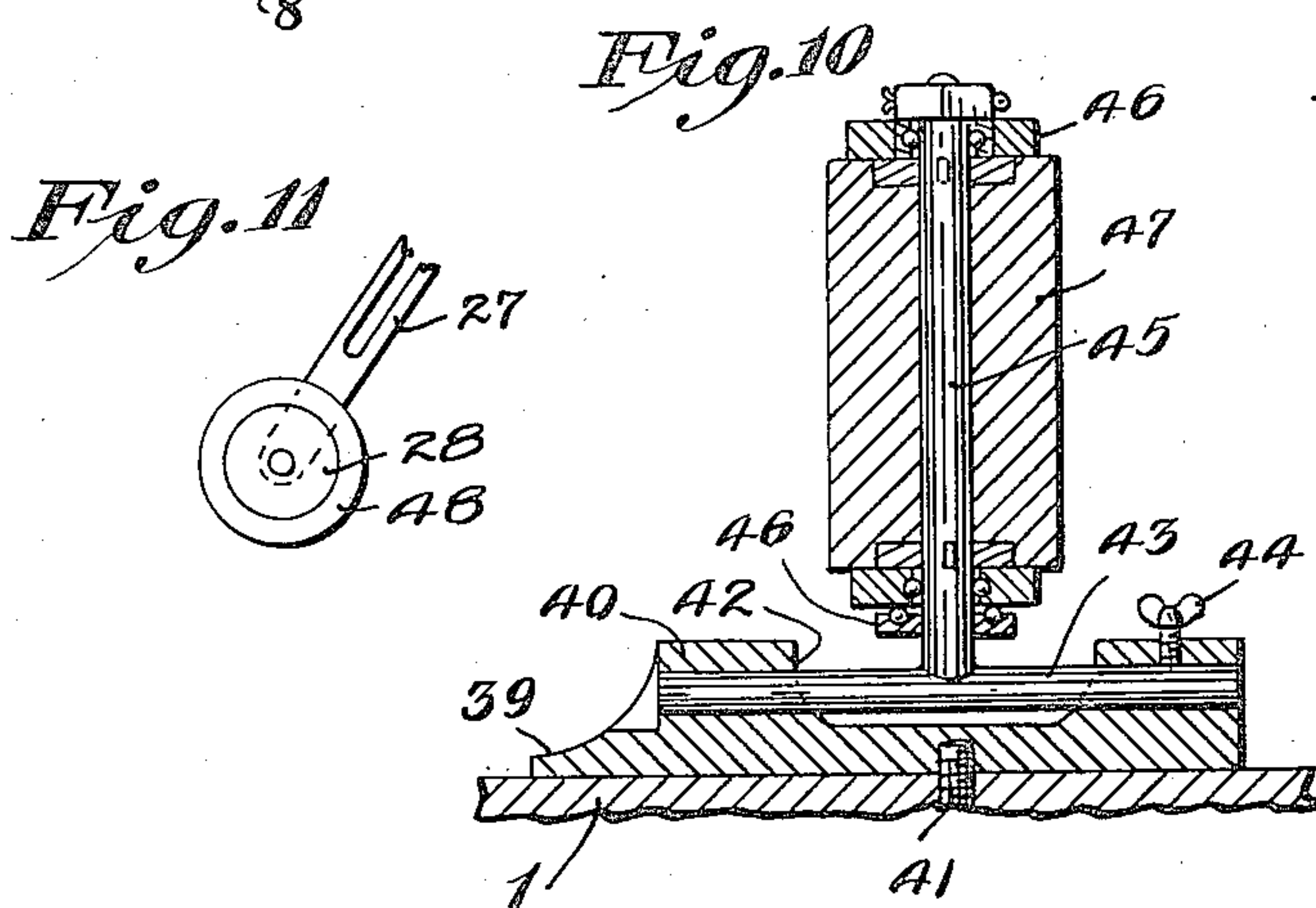
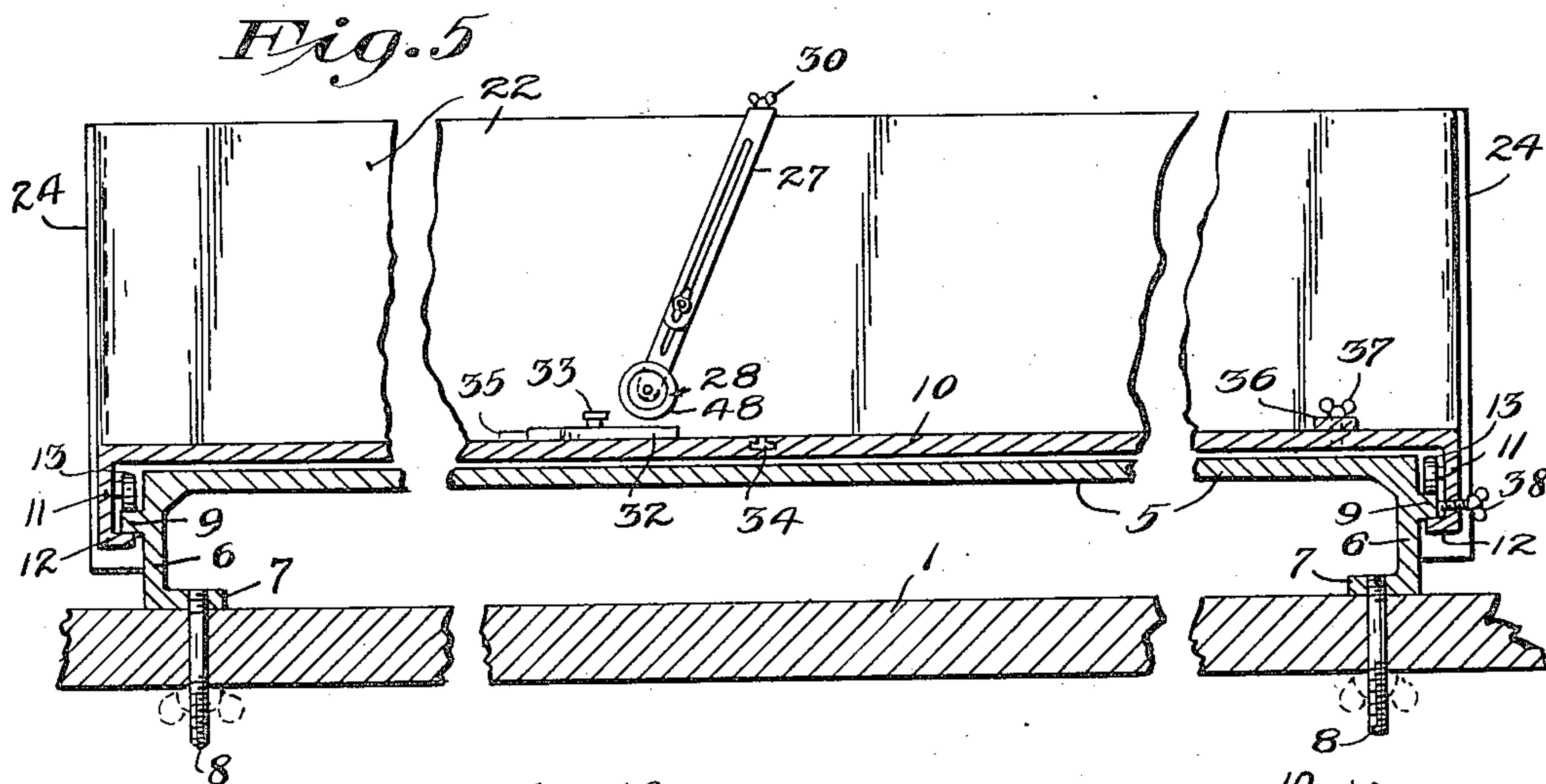
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## SANDING APPARATUS

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3 Sheets-Sheet 3



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## UNITED STATES PATENT OFFICE

2,012,163

## SANDING APPARATUS

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Application December 31, 1931, Serial No. 584,070

3 Claims. (Cl. 51—137)

This invention relates to abrasive or sanding machines and more particularly to devices especially adapted for sanding edges.

It is an object of my invention to provide a comparatively simple and highly efficient machine for sanding an edge at any desired angle.

It is a further object to provide an edge sanding machine of the class described having comparatively few working parts, durable in structure, capable of being manufactured at low cost and adapted to be conveniently and easily controlled and adjusted.

These and other objects and advantages of the invention will be more fully set forth in the following description made in connection with the accompanying drawings, in which like reference characters refer to similar parts throughout the several views, and in which:—

Fig. 1 is a front elevation of an embodiment of my machine, some parts of the endless sanding belt and table being broken away;

Fig. 2 is a top plan view of the same;

Fig. 3 is a fragmentary rear elevation of the adjustable belt positioning back;

Fig. 4 is a vertical cross section taken on the line 4—4 of Fig. 2, looking in the direction indicated by the arrows;

Fig. 5 is a vertical section taken longitudinally of the work-holding table, substantially along the line 5—5 of Fig. 2;

Fig. 6 is a detail top plan view of the back member for positioning the belt;

Fig. 7 is a perspective view showing the removable board constituting an important part of the adjustable back;

Fig. 8 is a fragmentary view mainly taken in horizontal section showing a means for adjustably mounting the work-supporting table on its base;

Fig. 9 is an elevational view showing one of the sanding belt rollers;

Fig. 10 is a vertical section taken substantially along the line 10—10 of Fig. 9 and showing one of the belt guide rollers, and

Fig. 11 is a detail view showing an end of the work retaining rollers.

In the embodiment of the invention illustrated my machine is mounted on a suitable support such as a bench 1. An electric motor 2 is mounted on one end of the bench and drives a large pulley 3 mounted for rotation on a horizontal axis above the level of the bench. An endless sanding belt 4 is trained about said pulley for driving and is also trained over a second pulley

(not shown) mounted in the opposite end of bench 1.

I provide a machine bed or base 5 detachably secured to bench 1 and disposed inwardly somewhat from the sanding belt 4. Bed 5 is provided with downturned ends 6 terminating in inturned attachment flanges 7 which may be secured to bench 1 by winged bolts 8 or other suitable attachment means. The sides 6 of base 5 are provided with horizontal tracks 9 in the form of integral flanges disposed below the upper surface of the base.

A work-supporting table 10 is mounted on the base or bed 5 for travel over tracks 9 toward and away from sanding belt 4 and to this end table 10 has depending end portions 11 which terminate in inturned retaining flanges 12 disposed beneath tracks 9 for preventing upward displacement of the table from its base. The end portions 11 of the adjustable table carry inwardly projecting wheels or rollers 13 which work on the upper surfaces of tracks 9 and support the table.

Referring again to the base or bed 5, it will be noted (see Fig. 4) that the downturned side portions 6 terminate at their outer or forward ends in diminished arms 14 having inclined upper edges 15 and terminal portions 16 which are rigidly connected by a cross bar 17, as best shown in Fig. 3. A backing plate or supporting back 18 is hinged to the arms 14 by trunnions 19 and rigidly carries at points somewhat above its hinged edge and at its two ends large arcuate arms 20 which are slotted and adjustably secured or clamped to upstanding lugs or arms 21 which are attached to the extremities 16 of the arms 14. Supporting back or plate 18 detachably carries a belt-engaging board 22 constructed of non-abrasive material. I have found that a wooden board having a shellacked surface and covered with flaked graphite is entirely satisfactory for the purposes desired. The board or plate 22 is provided with grooves 23 in its ends for slidably receiving retaining flanges 24 formed on the ends of back 18 (see Figs. 6 and 7).

The supporting back 18 at its upper edge is provided with a longitudinal flange 25 upon which the hook portions 26 of a hanger 27 is slidably mounted. Hanger 27 includes an adjustable depending section 27a disposed in parallel relation to the face of belt engaging board 22 and carries at its lower end a horizontally disposed work engaging roller 28 which is adapted to press a piece of work 29 against the work table 10. The hook end of hanger 27 is provided with set screws



30 for engagement with the upper edge of back plate 18. The sections of the hanger 27 are longitudinally slotted and are clamped together in an adjusted position by a bolt and wing nut 31.

5 A block or carriage 32 is slidably mounted upon table 10, being provided with a head which is guided and retained in a T-shaped groove 34 formed diagonally in the work table 10 (see Figs. 1 and 2). Block 32 has affixed to the outer end thereof a series of spring work-engaging fingers 35 which are adapted to engage the inner edge of the work and to yieldingly hold the work against the sanding belt 4. A removable work abutment 36 is detachably mounted upon the top of table 10 and at one end thereof, as shown in Fig. 2, for engagement with one end of a piece of work to facilitate the positioning of the longitudinal edge of the work. Abutment 36 may be suitably and detachably secured to table 10 by means of wing screws 37.

20 Work holding table 10 may be secured in a desired adjusted position by suitable means, such as one or more set screws 38 (see Fig. 8) which threadedly engage the side portions 11 of the table 10 and jamb against the longitudinal edges of tracks 9.

At the forward or outward edge of the base or bed, longitudinally extending supporting arms 39 are provided (see Figs. 1 and 4), these arms, as shown, lying flush against the bench 1 and terminating in bearings 40 which may be suitably secured to the bench as by attachment elements 41. Bearings 40 have cut out central portions and have journaled therein shafts 43 which are adjustably secured against turning by set screws 44. Spindles 45 extend perpendicularly to the shafts 43 and are rigidly secured thereto and on each of said spindles a belt guiding roller is rotatably mounted, ball bearings 46 being preferably provided. The lower run of the sanding belt is turned or twisted through approximately 90 degrees and trained against the rollers 47. The lower run of the belt, as will be seen in Fig. 2, engages against the outer sides of the rollers 47 and is backed or supported by the board 22 carried by the supporting back or plate 18.

#### Operation

50 A piece of work, such as the board 29 is positioned flatwise on work table 10 with the edge to be sanded extending parallel to the lower turned run of belt 4. Table 10 is then suitably adjusted by releasing set screws 38, shifting the table and then tightening the screws. Roller 28 may then be positioned against the work to hold the same against displacement by adjusting the clamping bolt 31. Roller 28 is preferably constructed of a somewhat compressible material, such as rubber, to prevent injury to the work. 60 The spring work engaging fingers 35 are then adjusted by properly positioning and securing block carriage 32 in its guide and yieldingly hold the longitudinal edge of the work against the sanding belt. The several edges of the work may be successively sanded at any desired angle by adjusting and securing the belt supporting back structure at the desired angle. Belt guide rollers 47 are then also adjusted to a corresponding angle by manipulating the set screws 44. The belt in 65 its traveling movement is correctly backed or supported by the belt engaging board 22 and the smooth or shellacked surface of the board provided with a lubricant, such as graphite, which permits the belt to slide smoothly over the face,

producing substantially perfect sanding of the edge of the work. When boards 22 become worn the same may be easily replaced.

Table 10 may be adjusted horizontally on the supporting base 5 in accordance with the different 5 requisites, such as the variation in the angular adjustment of the supporting back 13 as well as the width or other dimensions of the piece of work to be edged.

It will be noted that the arrangement and construction of the belt guiding rollers, supporting back and work supporting table enable boards or work varying substantially in length to be efficiently accommodated.

It will, of course, be understood that various 15 changes may be made in the form, details, proportions and arrangement of the parts, without departing from the scope of my invention, which, generally stated, consists in a device capable of carrying out the objects above set forth and in the novel parts and combinations of parts disclosed and defined in the appended claims. 20

What is claimed is:—

1. A sanding machine having in combination, a base, a belt supporting back mounted on said 25 base for angular adjustment relatively thereto, an endless sanding belt having a run extending across said back structure, said base having tracks extending substantially perpendicularly to said back structure, a work supporting table mounted 30 on said tracks for adjustment toward and away from said back structure, means for locking said table to said base in desired adjusted positions and means associated with said table for engaging the inner edge of a piece of work 35 to hold the same against said sanding belt.

2. A sanding machine having in combination, a horizontal base having a work supporting surface thereon, an upstanding, rigid back structure mounted for angular adjustment at one side of 40 said base and swingable on an axis disposed below said work supporting surface, means for rigidly securing said back structure in an infinite number of adjusted positions disposed at angles with reference to the plane of said work supporting surface, an endless sanding belt extending 45 in general, longitudinally of said back and base, means for guiding one run of said sanding belt flush across said back structure in slidable relation thereto, said means being angularly adjustable to conform to the adjustment of said back structure and means associated with said base and work supporting surface for engaging the inner edge of a piece of work to hold the same 50 against said sanding belt.

3. A sanding machine having in combination, a horizontal base provided with a work supporting table thereon, an upstanding rigid back structure mounted for angular adjustment within relatively 60 wide limits at one side of said base, an endless sanding belt extending in general, longitudinally of said back and base, means for guiding one run of said sanding belt flush across said back structure longitudinally thereof and in slidable relation thereto, means associated with said base and work supporting table for engaging the inner edge 65 of a piece of work to hold the same against said sanding belt and adjustable means mounted on said back structure and depending from the upper portion thereof for engaging the upper surface of a piece of work to hold the same against said supporting table. 70

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