

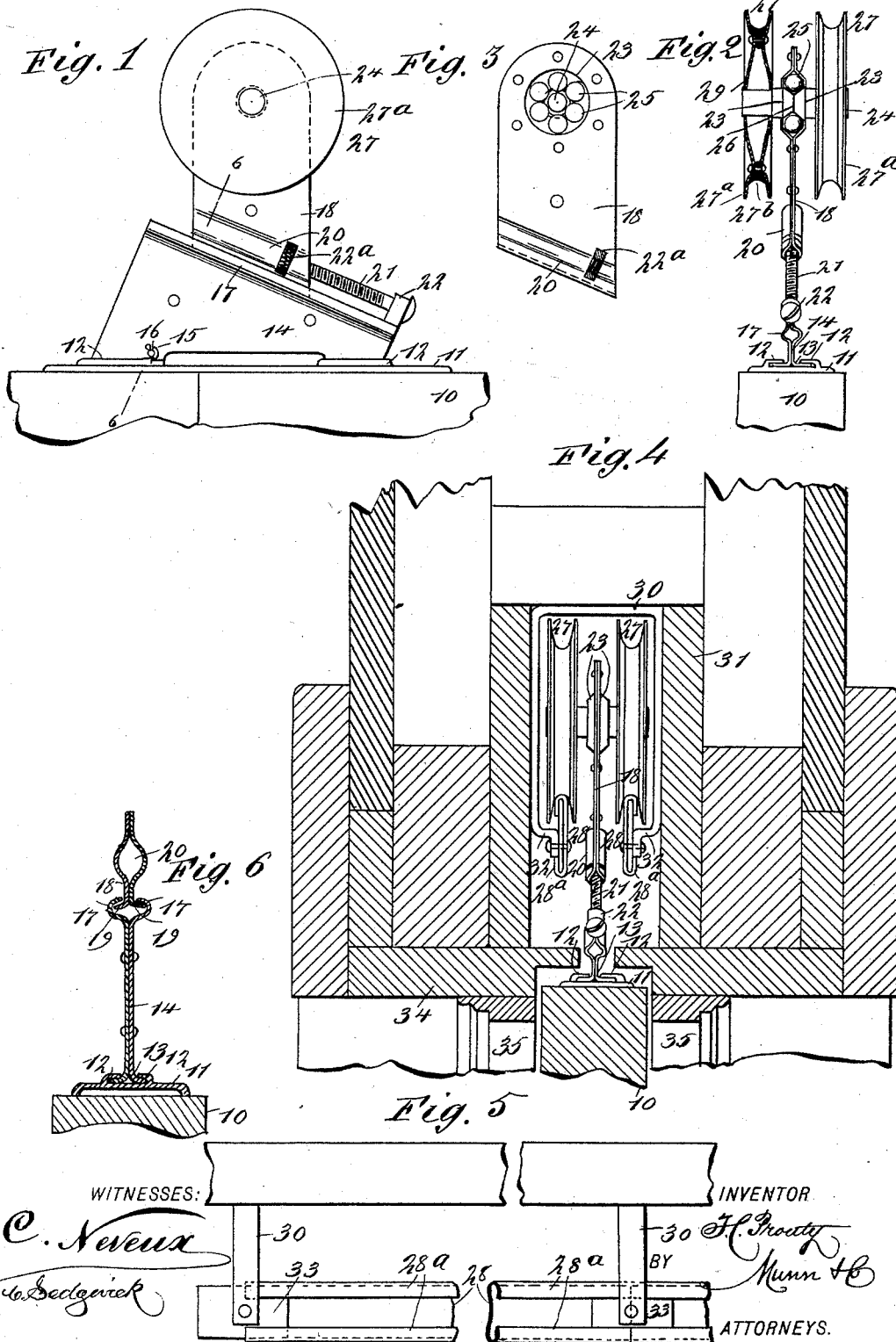
(No Model.)

2 Sheets—Sheet 1.

T. C. PROUTY.
DOOR HANGER.

No. 524,609.

Patented Aug. 14, 1894.



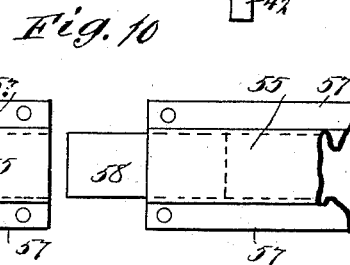
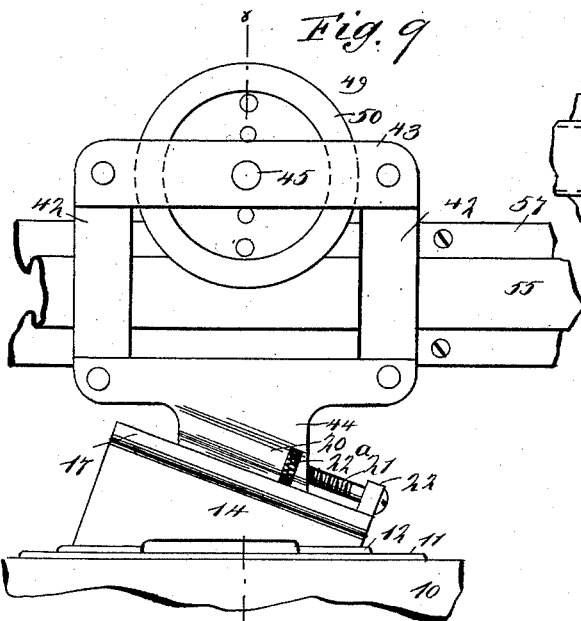
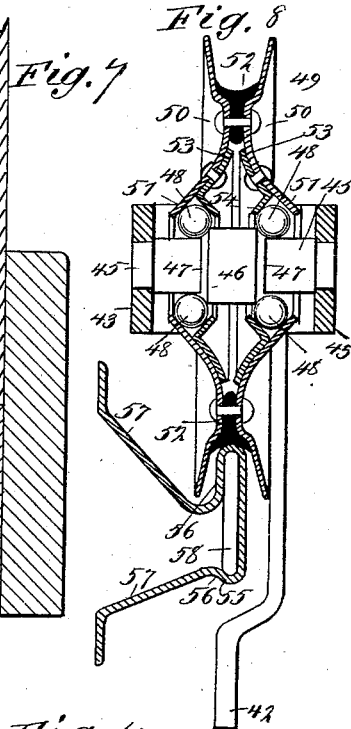
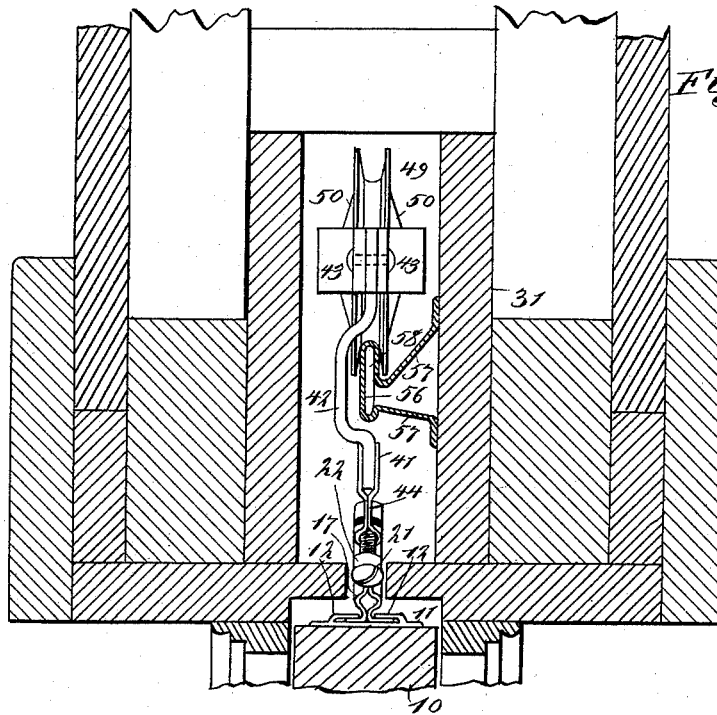
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T. C. PROUTY.
DOOR HANGER.

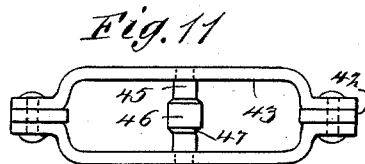
2 Sheets—Sheet 2.

No. 524,609.

Patented Aug. 14, 1894.



WITNESSES:
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UNITED STATES PATENT OFFICE.

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THEODORE C. PROUTY COMPANY, OF SAME PLACE.

DOOR-HANGER.

SPECIFICATION forming part of Letters Patent No. 524,609, dated August 14, 1894.

Application filed September 28, 1893. Serial No. 486,693. (No model.)

To all whom it may concern:

Be it known that I, THEODORE C. PROUTY, of St. Joseph, in the county of Berrien and State of Michigan, have invented a new and Improved Door-Hanger and Track, of which the following is a full, clear, and exact description.

My invention relates to improvements in that class of hangers and tracks which are used in connection with sliding doors; and the object of my invention is to construct a ball bearing wheel which may be used in connection with the hanger, to arrange the hanger in such a way that the bearing balls will always be in proper place and will not need adjustment, to produce a light and substantial track which may be pressed from sheet metal, preferably sheet steel and put up conveniently in sections, to the end that it may be easily applied and as easily taken down, if necessary; and in general to produce a hanger adapted to meet the requirements of sliding doors so as to enable the doors to slide easily and noiselessly.

To these ends my invention consists of certain features of construction and combinations of parts, as will be hereinafter described and claimed.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar figures of reference indicate corresponding parts in all the views.

Figure 1 is a side elevation of my improved hanger, as applied to a door and adapted for a double track constructed according to my invention. Fig. 2 is a front elevation of the hanger with one of the wheels in section. Fig. 3 is an inside detail view of one-half the carriage which is used in connection with the form of hanger shown in Figs. 1 and 2, and illustrates the manner in which the bearing balls are arranged. Fig. 4 is a detail sectional view, showing the door suspended upon the improved double steel track by means of the hanger illustrated in Figs. 1 and 2. Fig. 5 is a broken detail side elevation of my improved track. Fig. 6 is a detail sectional view on the line 6—6 of Fig. 1. Fig. 7 is a detail sectional view of a door suspended by my improved hanger, but with a modified form of hanger shown which is adapted to run on a

single track constructed according to my invention. Fig. 8 is a cross section of the wheels used on a single track, the section being taken on the line 8—8 of Fig. 9. Fig. 9 is a side elevation of the hanger mounted on a single track constructed according to my invention. Fig. 10 is a detail side elevation illustrating the manner in which two track sections may be connected end to end so as to form a smooth running surface; and Fig. 11 is a plan view of the hanger frame shown in Figs. 7, 8 and 9.

The door 10 is of the usual kind, adapted to be suspended overhead, and to facilitate its connection with the hanger it has fastened to its upper edge a plate 11 on which are pressed-up lugs 12, and between these lugs are inserted the feet 13 of the inclined adjusting plate or plane 14, this being held in place in the lugs in any convenient way, a good way of fastening it being shown in Fig. 1 where one of the lugs is turned up, as shown at 15, and a pin 16 is passed through the inclined plane and abuts with the turned-up end of the lug. The inclined plane 14 has its upper surface at an inclination to the top of the door 10, and the plane is formed of two plates of sheet metal riveted together and the upper edges are curved oppositely to form a slideway 17 which is adapted to receive the foot of the carriage 18, this carriage being formed like the inclined plane of sheets of metal riveted together, and its flanged foot 19 is held in the slideway 17, as shown best in Fig. 6.

The carriage 18 is provided, near its lower end and parallel with the slideway 17 with a bore 20, formed by pressing outward the sides of the carriage, and this bore is adapted to receive the adjusting screw 21 one end of which is held in a collar 22 struck up on the lower end of the inclined plane 14, while the thread of the screw engages a nut 22^a which is held in the bore 20 of the carriage, and it will be readily seen that by turning the screw the carriage may be moved up and down in the slideway 17 so as to adjust the vertical length of the hanger, of which the carriage and the inclined plane form parts.

The two sheets of metal forming the carriage 18 are pressed outward in opposite directions near the top of the carriage, as shown

at 23 in Fig. 2, and these parts or outpressed disks hang on the shaft 24 which extends transversely through them, and the outpressed portions of the hanger are shaped so as to form a circumferential groove having a V-shaped cross section, and adapted to contain the bearing balls 25 which turn in a groove 26 of the shaft 24.

On the outer ends of the shaft are secured the wheels 27 which are pressed from sheet metal, preferably sheet steel, and each wheel is formed of two similar disks 27^a which are pressed outward in the center, as shown at 29 to give them the greatest possible strength, and they are riveted together near their outer edges, which edges are curved outward slightly so as to form grooves between them adapted to run on the tracks described below.

The complete wheel is formed by uniting the disks 27^a as specified, and between the disks is preferably secured some bearing material 27^b which may be of canvas, rubber, or anything capable of deadening sound, and this material lies in the groove of each wheel so as to come in contact with the track 28. In connection with the form of hanger just described, double tracks 28 are employed, which extend horizontally and lie parallel with each other, as shown in Fig. 4, each track being formed of sheet metal which is doubled over at the edges, as shown at 28^a in Figs. 4 5, and the tracks are supported by means of brackets 30 which are of a generally inverted U-shape and which fit snugly in the dividing header 31 above the door to which header the brackets are secured.

Each bracket 30 has its lower ends bent inward, as shown at 32, and to these ends are fixed slide blocks 33 which are adapted to fit the tracks 28 and be held within the turned-over flanges 28^a of the said tracks, and this arrangement enables the tracks to be slipped endwise upon the slide blocks and to be supported in a very substantial manner. The hanger is adapted to hang down through the slot in the soffit 34 in the usual way, so that the door may run between the stops 35.

When my improved hanger is used in connection with a single track, the hanger and track are constructed in the manner illustrated in Figs. 7 to 11 and described below. In connection with a single track, the door is arranged as above described, and the slideway 14 and the accessory parts are also like the said parts previously described, but instead of the carriage 18, a carriage 42 is used, which has clamped to its lower end, as shown at 41, a sheet metal extension 44 which connects with the inclined plane in the manner already described, and the upper end of this carriage 42 terminates in oppositely curved plates 43 which are riveted together at the ends and are also riveted to the vertical bars of the carriage, these vertical bars being bent outward in the center, as shown clearly in Fig. 7, to enable the carriage to avoid the track.

The carriage 42 is provided with a transverse shaft 45 which is supported in the plates 43 of the carriage, and the shaft is enlarged in the center, as shown at 46, this enlargement having inclined shoulders 47 at the ends against which the bearing balls 48 lie, these balls being arranged in two rows around the shaft, as clearly shown in Fig. 8, and on them the wheel 49 of the carriage rides.

The wheel 49 is made on the same principle as the wheel 27 already described, except that it is adapted for a single track and hence is provided with two rows of bearing balls. The wheel is composed of oppositely arranged steel disks 50, although they may be made of other metal, and these disks are pressed outward, as shown at 51, to form sides of the bearing cones which ride on the balls 48, and the other sides of the cones are formed by the annular plates 53 which are riveted to the inner sides of the wheel and which have flanges 54, which extend at right angles to the hub portions 51 of the wheel.

The wheel 49 is preferably provided with a bearing portion 52, arranged between the opposite disks and in the groove of the wheel, this being formed of suitable material to deaden the sound. The wheel 49 is arranged to run on the track 55 which is made of sheet metal, this being doubled over at the upper and lower edges, as shown at 56, to give to the track the correct shape, as well as the necessary rigidity, and after being doubled as described, the track terminates in opposite flaring arms or members 57 which form a bracket to support the track and which may be secured in the dividing header 31, as shown clearly in Fig. 7. The track 55 is made up in short sections which are placed end to end, and the several sections are united by means of a coupling or slide block 58, which fits in the track, as shown clearly in Figs. 8 and 10.

From the above description it will be observed that the entire mechanism constituting my invention may be struck up out of a sheet metal, that means are provided for adjusting the hanger and the suspended door in relation to each other, and that the bearings of the hanger are such that the hanger runs very smoothly, noiselessly and steadily without any lateral motion whatever.

Having thus described my invention, I claim as new and desire to secure by Letters Patent—

1. In a door hanger, the combination with the tracks having longitudinal recesses or slideways, of the slide blocks constructed to enter and support the tracks, substantially as described.

2. In a door hanger, the combination with the sheet metal tracks having their upper and lower edges doubled over, as described, of the supporting brackets and the slide blocks thereon to enter and support the tracks, substantially as described.

3. In a door hanger, the improved track formed of sheet metal doubled over to form

the upper and lower edges of the track, and slide blocks or couplings adapted to lie within the track and connecting the several sections thereof, substantially as described.

- 5 4. In a door hanger, the improved track for the hanger wheels comprising sheet metal sections, each section being doubled over to form the edges of the rail and terminating in diverging members serving as a bracket to
10 support the track, and coupling blocks held within the track rail and connecting the sections, substantially as described.

5. A wheel for door hangers or analogous purposes, comprising two oppositely arranged disks whose central portions are pressed outward, and an annular flange extending inwardly from each of the disks at the central portion thereof, to form therewith a ball-receiving groove, substantially as described. 15

THEODORE C. PROUTY.

Witnesses:

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O. O. JORDAN.