A. T. RAYNOR.

PIANO TRUCK.

APPLICATION FILED SEPT. 14, 1911.

1,035,903.

Patented Aug. 20, 1912.

2 SHEETS—SHEET 1.

Fig. 2.

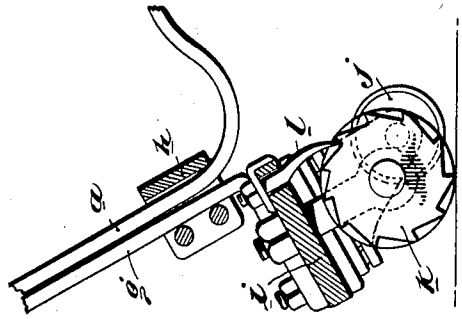
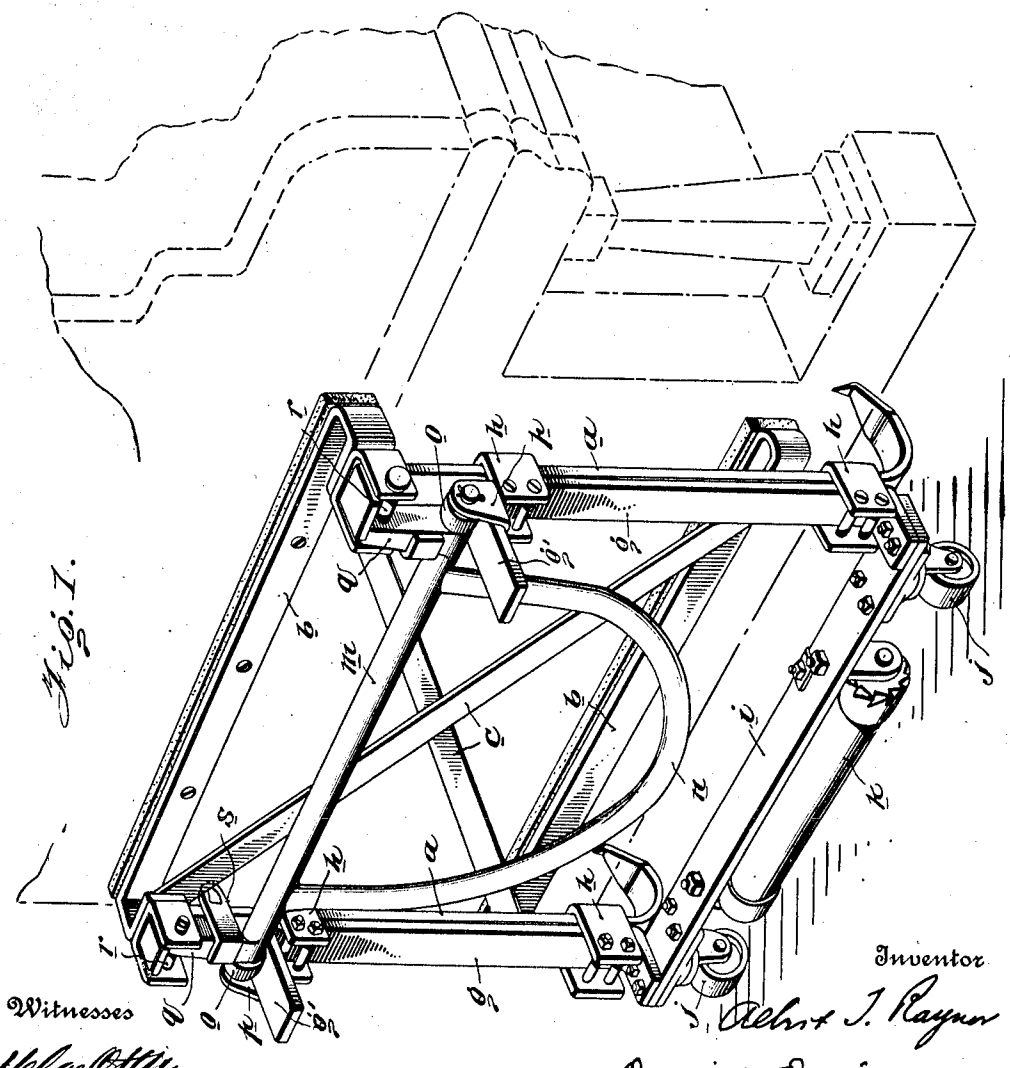


Fig. 1.



Witnesses

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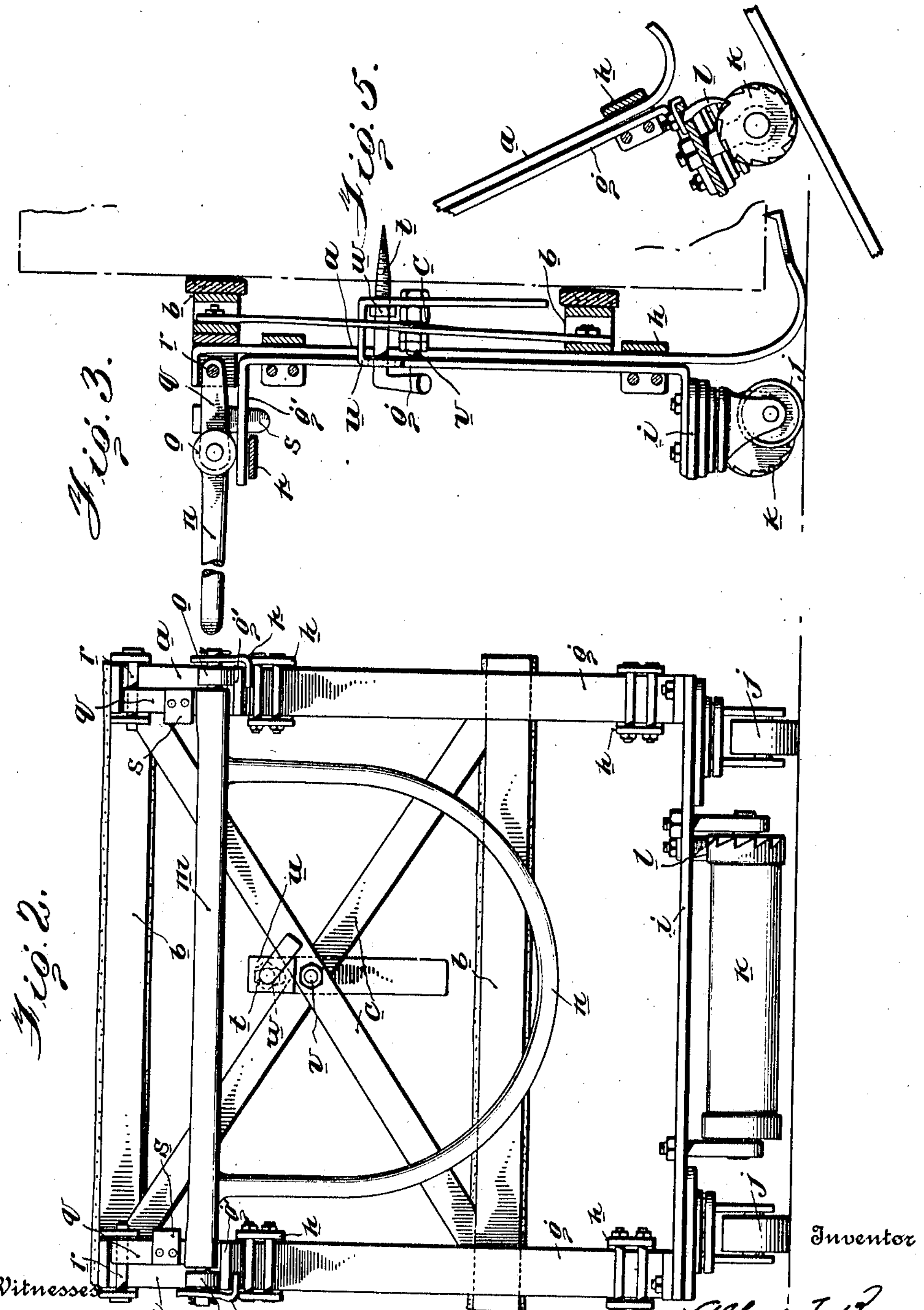

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UNITED STATES PATENT OFFICE.

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PIANO-TRUCK.

1,035,903. Specification of Letters Patent. Patented Aug. 20, 1912.

Application filed September 14, 1911. Serial No. 649,341.

To all whom it may concern:

Be it known that I, ALBERT T. RAYNOR, a citizen of the United States, and a resident of Findlay, in the county of Hancock and State of Ohio, have invented certain new and useful Improvements in Piano-Trucks, of which the following is a full and clear specification, reference being had to the accompanying drawings, in which—

Figure 1 is a perspective view of one of my improved trucks, showing it applied to a piano; Fig. 2 a front elevation thereof; Fig. 3 a vertical longitudinal section of the truck; and Figs. 4 and 5 detail vertical sections showing the manner of using the roller between the casters.

The object of this invention is to provide a simple truck for use in expediting the moving about of pianos, heavy boxes, etc., and the invention consists of certain novel features of construction hereinafter described and claimed.

This truck is adapted especially to be used in pairs, one at each end or side of the article which is to be moved. I have illustrated but one of the trucks in the drawing.

The truck consists of a pair of vertical bars *a* connected rigidly by horizontal bars *b* and diagonal brace rods *c*, the said bars *b* being each provided with a suitable strip of cushioning material to prevent the surface of the piano or other article being marred by contact with the bars. The lower extremity of each of these bars is bent forwardly, and at the extreme forward ends of these bent portions they are provided with upstanding sharp points. The frame just described is adapted to be placed against the end or side of the piano or box, and the lower bent extremities of the side bars are inserted under the article, the article (if it be a box) first having been raised from the floor by a suitable crow-bar or jack sufficiently to permit the bent arms to be inserted far enough under the article to bring the cushions against the adjacent side thereof.

Slidably mounted on the outer face of each of the side bars *a* is a sliding vertical bar *g*, these bars being confined slidably to the bars *a* by means of clips *h* carried by the bars *g*. These slidable bars *g* have their upper ends bent horizontally outward to form bearings *g'* and their lower ends are bent outward and rigidly bolted to a horizontal cross plate or bar *i*. Swivelly mounted on the under side of the horizontal bar or plate *i* is a pair of casters *j*, one at each end of the bar, and journaled in bearings depending from the lower face of the bar *i*, between the casters is a horizontal roller *k*. This roller *k* is free to rotate backwardly but is prevented from rotating forwardly by means of a spring pawl *l* attached to the bar *i*.

The slidable roller-carrying frame is moved up and down by a lever arrangement, consisting of a transverse rod *m* having connected to it a bail-like handle *n* and carrying at its extreme ends rollers *o* which are adapted to bear upon the upper faces of the bearing arms *g'*. Clips *p* are fastened to the ends of the rod *m* and bent so as to extend inwardly under the bearing arms *g'*, and attached to said rod *m* near each of its ends is a short arm *q* whose upper end is pivotally connected to the front face of the adjacent bar *a* by means of a horizontal pivot *r*. Each of these arms *q* is provided with a spring clip *s* which is adapted to spring over the inner edge of the adjacent bar *a* and lock the lever frame down, when the lever frame is adjusted to that position.

After attaching the main frame to the piano or box in the manner set forth, the lever frame (consisting of a bail, transverse rod and short arms *q*) is swung downwardly, with its rollers impinging against the upper faces of the arms *g'* and rolling toward the main frame bars. If sufficient leverage be applied, the resulting action will be to lift the main frame together with its burden off the floor a short distance and thus shift the weight of the box or piano entirely upon the casters. When the lever frame is swung downwardly to a vertical position, as shown, the clips *s* snap over the inner edges of the side bars *a* and lock the lever frame in that position. In this locked position the short arms *q* lie against the main frame bars *a* and in a vertical position, so that the weight of the piano or other article is transmitted directly through the short arms and the rollers on the ends of the rod *m* to the uprights of the slidable frame. When another truck similarly constructed is applied to the other side or end of the article to be moved, the article may be readily rolled about on the floor, the casters permitting the article to be readily moved in any direction.

It is sometimes desirable in moving the article about, especially in moving it up a

plank laid on a stair-way to tilt the article over toward the operator, with its adjacent side or end standing at an angle of about forty degrees; in this position the casters will swing forwardly out of the way and the weight will be brought entirely upon the roller, whereupon the article may be readily rolled straight forwardly up an incline or on a level. When moving the article up an incline in this tilted position it is desirable to prevent the roller rotating forwardly as to permit such rotation would permit the truck and its load to move backwardly down the incline; to do this I provide the spring pawl *l* which engages ratchet teeth on one end of the roller.

It will be observed that the roller *k* has its axis above and a little to the rear of the axes of the casters when the casters are in position to bring their axes in alinement, the object of this arrangement being to keep the roller above and out of contact with the floor until the truck is tipped backwardly a sufficient distance to lift the casters off the floor and bring the weight upon the roller.

When this truck is used on pianos, one truck is applied to each end of the piano and these two trucks are fastened to the piano by long straps passed around underneath and over the top of the piano. When the truck is applied to boxes, any suitable device may be employed to fasten it to the side or end of the box to which it is applied. I have shown in the drawing a lag screw *t* mounted on the frame in such position that after the truck is applied to the box the screw may be turned and forced into the box sufficiently to fasten the truck thereto, the screw having a suitable gimlet point to enable it to readily enter the wood of the box. This screw is mounted slidably in the upper end of a bar *u* which is pivotally supported on a bolt *v* which passes through and clamps together the two diagonal cross braces *c* at their point of intersection. The screw is slidably mounted within the downwardly bent portion of the upper end of the bar, and its endwise movement is limited by a nut-like enlargement *w* on the screw. This limited sliding movement of the screw enables the screw to be pulled back so as to avoid injuring the piano when the truck is used on pianos.

The object of mounting the screw *t* in the upper end of the swinging bar *u* is to permit the screw to be bodily swung sidewise a limited distance to enable the screw to be fastened to the box or crate at the most desirable point, that is, at a point where the box casing is best adapted to receive the screw.

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

1. In combination with a frame adapted to engage the article to be moved, a slidable frame mounted on the outer face thereof and carrying casters at its lower end and outwardly extending bearing arms at its upper end, and a lever arrangement consisting of a handle and a transverse bar and a pair of arms carried by the bar and pivotally attached at their upper ends to the article-engaging frame, said rod being provided with rollers which run on said bearing arms, for the purpose set forth.

2. The combination with a truck of the type set forth, of a plate mounted on the truck and capable of a movement from side to side, and a wood screw mounted on said plate and movable with it, said screw having its entering end pointing forwardly and being provided with means for turning it, whereby the truck may be fastened to the side of the box to be transported.

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

ALBERT T. RAYNOR.

Witnesses:
PERRY J. BIGHAM,
JAMES CULLEN.