

No. 667,575.

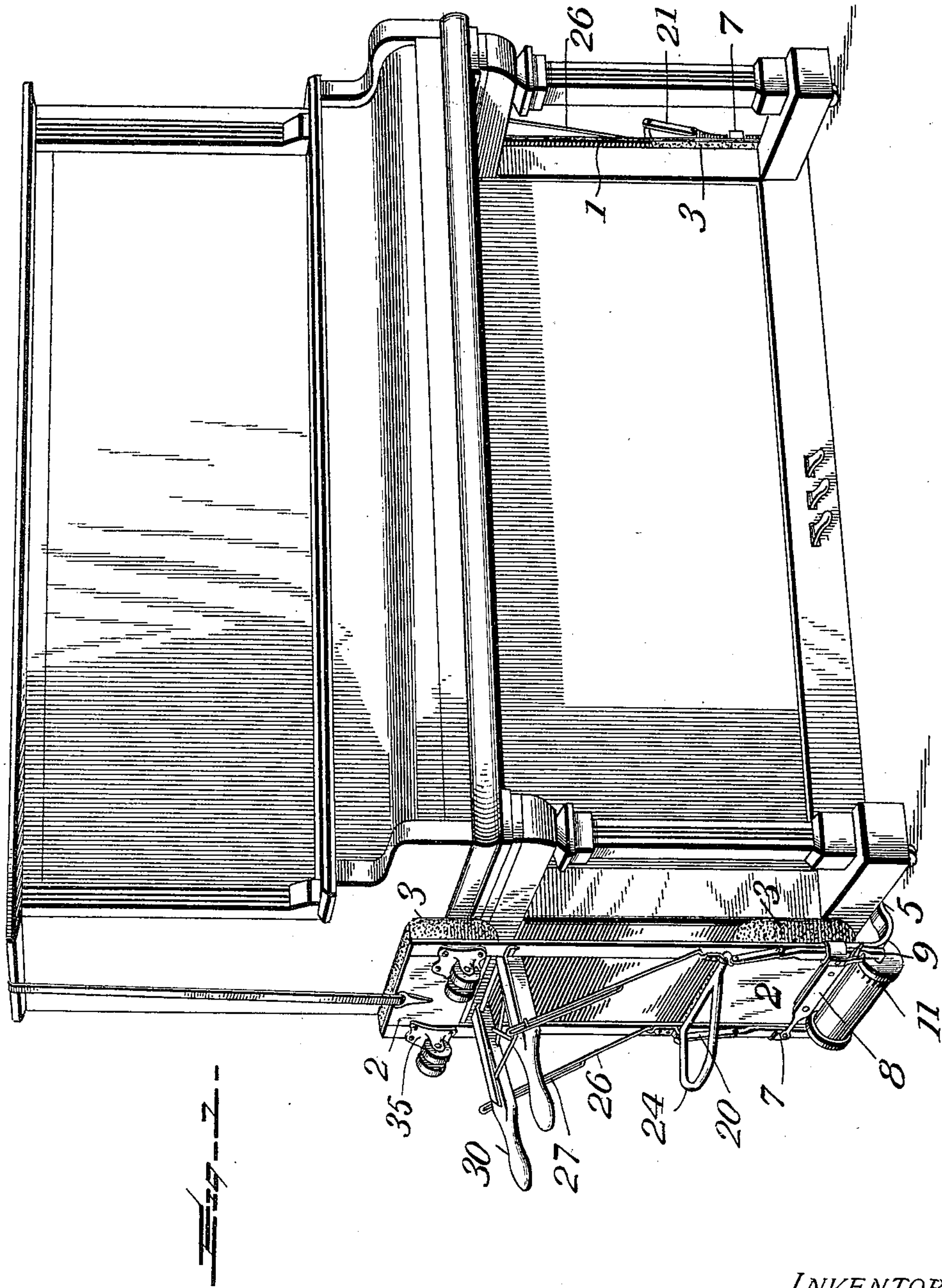
Patented Feb. 5, 1901.

A. T. RAYNOR.
PIANO TRUCK.

(Application filed Oct. 23, 1900.)

(No Model.)

2 Sheets—Sheet 1.



WITNESSES:

L. C. Mills.
H. G. Bishop.

INVENTOR

Albert T. Raynor

BY

R. H. Bishop.

Attorney

No. 667,575.

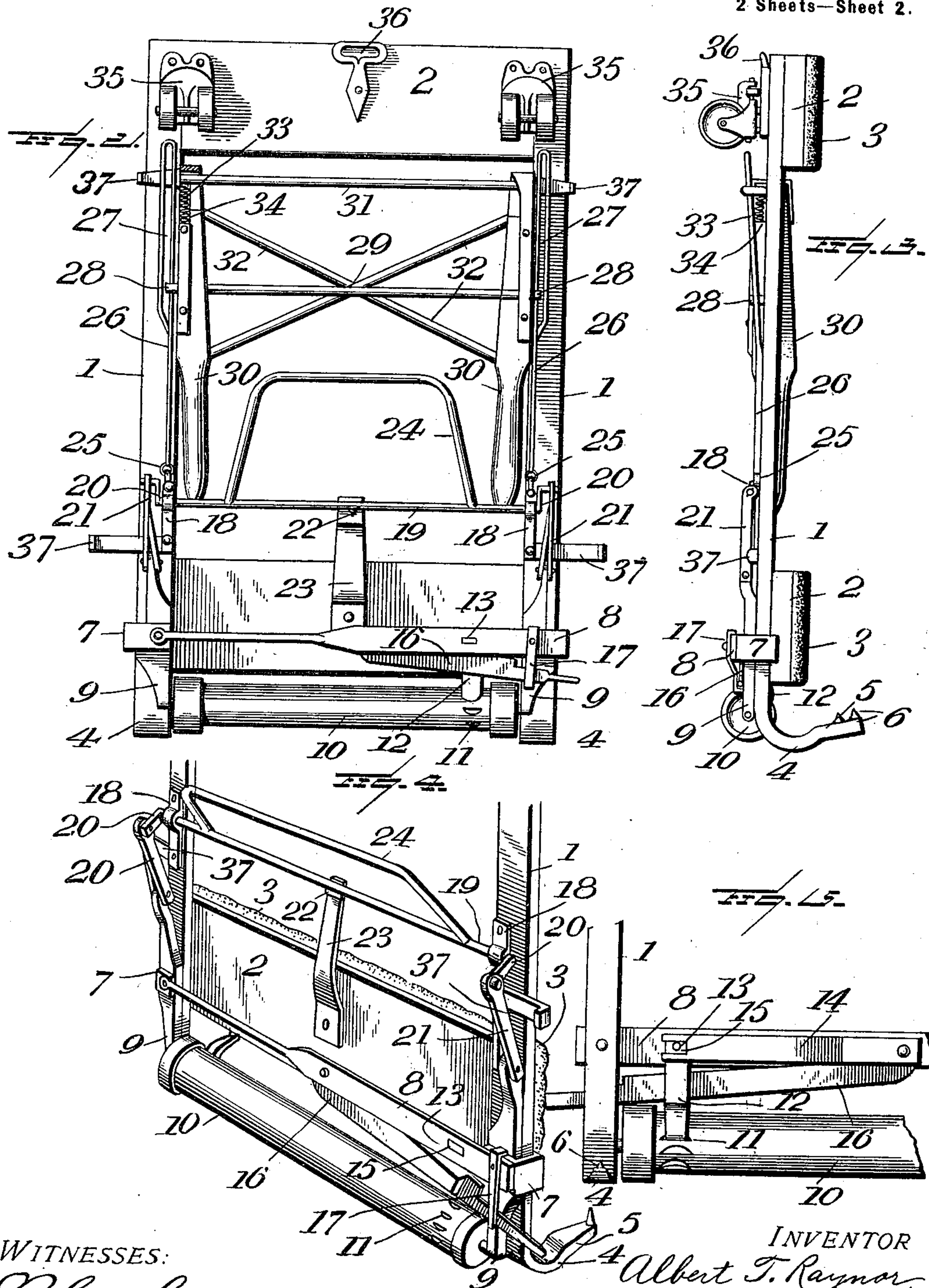
Patented Feb. 5, 1901.

A. T. RAYNOR.
PIANO TRUCK.

(Application filed Oct. 23, 1900.)

(No Model.)

2 Sheets—Sheet 2.



WITNESSES:

L. C. Hills.

N. G. Bishop.

INVENTOR

Albert T. Raynor,

By

R. H. Bishop,

Attorney

UNITED STATES PATENT OFFICE.

ALBERT T. RAYNOR, OF DETROIT, MICHIGAN.

PIANO-TRUCK.

SPECIFICATION forming part of Letters Patent No. 667,575, dated February 5, 1901.

Application filed October 23, 1900. Serial No. 34,009. (No model.)

To all whom it may concern:

Be it known that I, ALBERT T. RAYNOR, a citizen of the United States, residing at Detroit, in the county of Wayne and State of Michigan, have invented certain new and useful Improvements in Piano-Trucks, of which the following is a full, clear, and exact specification.

My invention relates to improvements in devices for moving pianos, and while it is intended more especially for use in moving upright pianos it is also adapted to be used for moving square or grand pianos.

It consists in certain novel features hereinafter first fully described and then particularly pointed out in the claims.

In the annexed drawings, which illustrate the preferred form of my invention, Figure 1 is a perspective view showing the application of the truck to a piano. Fig. 2 is a front elevation of the truck as it appears before being applied to the piano. Fig. 3 is an edge view of the truck. Fig. 4 is an enlarged detail perspective view of the devices for raising and lowering the roller, and Fig. 5 is an elevation of the pawl for preventing movement of the roller and its connections.

In carrying out my invention I employ two side bars 1, which are connected by cross-beams 2 at their upper and lower ends. Upon one face these cross-beams are provided with heavy pads 3, which are intended to bear against the piano-case and protect it against scratching or other injury. The lower ends of the bars 1 are formed into piano-supporting feet by being turned inward in a broad curve, as at 4, from which they incline upward in a straight portion 5, terminating in vertical teeth or hooks 6. It will be noticed that in order to properly engage the truss of the piano I have made one supporting-foot longer than the other; but they may be equal in length without departing from the invention. Slidably mounted on the side bars, just above the lower ends thereof, are clips 7, connected by a bar 8, and passing through and secured to said clips are hangers 9, which have their lower ends turned into journals for the roller 10, by means of which the truck is moved. This roller has an annular series of notches 11 near one end, which are engaged by a pawl 12, depending from the bar 8. The

pawl is mounted at its upper end in an eye 13 in the said cross-bar, and it is held normally against the roller by a spring 14, secured at one end on said cross-bar and having its other end bifurcated and fitting over a stud 15 on the pawl. To permit disengagement of the pawl from the roller, I provide a lever 16, which is pivoted at one end on the cross-bar 8, between the said bar and the spring 14, and extends past the pawl and beyond the side bar of the truck, being held in place by a keeper 17, secured to the bar 8 and the hanger 9, as clearly shown. This lever 16 bears against the opposite side of the pawl from the spring and acts thereon in opposition to the said spring. A short distance above the lower cross-beam I secure to the side bars of the truck metallic straps, keepers, or plates 18, in which a rock-shaft 19 is journaled. This rock-shaft is provided at its ends with cranks 20, to which are pivoted the upper ends of links 21, which have their lower ends forked and fitting over and pivoted to the upper ends of the hangers 9. At its center the rock-shaft is provided with an offset or locking-crank 22, which bears against a spring 23, secured to and projecting upward from the lower beam 2. The combined action of this spring and crank holds the shaft in any position to which it may be turned. The rock-shaft is of course provided with a suitable handle, which may be of any convenient design, it being shown in the form of an integral bail 24.

Just above the brackets 18 eyes 25 are provided on the side bars of the truck, in which are hinged the lower ends of the swinging guide and stop plates 26, which have extended longitudinal slots 27 in their upper portions. The upper slotted portions of these plates are engaged by eyes 28 at the ends of a rod 29, journaled in the handles 30, which are hung on a rod 31, secured to and extending between the side bars just below the upper cross-beam. The handles are hung loosely on the cross-rod 31 and are held at a fixed distance apart by braces 32, as will be readily understood. Springs 33 are seated in recesses 34 at the upper ends of the handles and bear against the rod 32 and the bases of the said recesses to force the handles normally toward the rock-shaft 19. As a consequence of this

arrangement when the truck is flat the handles will be pressed over and rest upon the rock-shaft and be prevented from dropping to the floor or the ground.

5 At the upper corners of the truck I provide casters 35, and to the upper cross-beam, at about the center of the same, I secure a loop or bracket 36, which carries a strap adapted to pass over the top of the piano and be at-
10 tached to a similar loop or bracket on a truck at the other end of the piano. Projecting laterally from the side bars are brackets 37, to which may be attached straps passing along the sides of the piano.

15 The manner of using the truck will be readily understood. The rock-shaft is turned so that the roller will be in its highest position above the piano-supporting feet. A truck is then placed against each end of the piano,
20 with the feet projecting thereunder and the straps connecting the two trucks secured, as will be readily understood. The lever 16 is then raised, so as to disengage the pawl from the roller and permit the same to rotate. The
25 rock-shaft is then lowered, so as to throw the roller against the floor, and as the said roller is forced to its lowest position the truck will be slightly raised and the piano lifted off the floor. The handles are now raised, and the
30 piano may be readily moved from a store to a wagon and lifted thereinto. When passing through narrow doorways or passages or making short turns, the piano may be turned on end and the truck moved upon the roller
35 and the casters.

Should it be necessary for any reason to leave the piano temporarily while it is on the trucks, the pawls are engaged in the rollers, so that the piano cannot be accidentally
40 moved and damaged. As the pawl permits the roller to rotate in one direction, one pawl may be left in engagement with its roller when the piano is being moved by a single person, so that the instrument will be prevented from
45 moving backward against the person. When turning the handles into position for use, they must be slightly lifted in order to clear the rock-shaft before being swung outward. The
50 slotted guide-plates limit the upward movement of the handles, so that after they reach a horizontal position all pressure exerted thereon will be applied directly to the lifting of the piano. The plates do not interfere with the free operation of the handles, but
55 move with them, as their upper ends are free and their lower ends hinged.

The construction of the supporting-feet effectually prevents the dropping of the piano from the truck. Inasmuch as the greater
60 portion of the foot is inclined upward, when the weight of the piano rests thereon the foot will not be depressed so as to slip from under the piano, but will be, rather, caused to assume a position enabling it to more closely bear against the bottom of the instrument.
65 The broad curve constitutes a strong spring which resists the tendency of the foot to be

depressed under the weight of the piano, and the hook or tooth overcomes all objections which have been raised against feet with
70 smooth ends.

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

1. A piano-truck the side bars of which
75 have their lower ends turned inward in broad curves and then inclined upward in straight lines from the said curves at an acute angle to the bar, the extremities of the straight portions being provided with teeth or hooks. 80

2. In a piano-truck, the combination with the side bars, of hangers slidably mounted on the said side bars and supporting a roller between their lower ends, a rock-shaft jour-
85 naled on the side bars above the hangers, and connections between the rock-shaft and the hangers.

3. In a piano-truck, the combination with the side bars, of hangers slidably mounted thereon and supporting a roller between their
90 lower ends, a rock-shaft journaled on the side bars above the hangers and provided with cranks at its ends, and links connecting the said cranks with the hangers.

4. In a piano-truck, the combination with
95 the frame, of sliding hangers mounted thereon and supporting a roller between their lower ends, a rock-shaft journaled on the frame above the hangers and provided with a handle and having a locking-crank at its center,
100 connections between the said rock-shaft and the hangers, and a spring secured on the frame and bearing on the locking-crank at the center of the rock-shaft.

5. In a piano-truck, the combination with
105 the supporting-roller having an annular series of notches, of a pawl supported above the roller and engaging the said notches, a spring bearing on the said pawl to hold it normally in engagement with the said notches,
110 and a lever acting on the pawl in opposition to the said spring.

6. In a piano-truck, the combination with the frame, of clips slidably mounted on the side bars of the frame, a cross-bar connecting
115 the said clips, hangers passing through and secured to said clips, a roller mounted between the lower ends of the hangers and provided with an annular series of notches, a pawl secured to the said cross-bar and en-
120 gaging the notches in the roller, a spring secured on the said cross-bar and bearing on the pawl, a lever pivoted to the said cross-bar and acting on the pawl in opposition to the spring, and means for raising and lower-
125 ing the hangers.

7. In a piano-truck, the combination with the frame, of suitably-braced handles loosely hung thereon, and guide-plates mounted on the frame and engaged by the handles to
130 limit the upward movement thereof.

8. In a piano-truck, the combination with the frame and the handle mounted loosely thereon, of a guide-plate hinged at one end

to the frame, and an eye on the handle engaging the guide-plate and free to turn therewith.

9. The combination with the frame and the
5 handles mounted loosely on a cross-rod thereof, of springs between the said cross-rod and shoulders of the handles, and a support for the free ends of the handles.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

ALBERT T. RAYNOR.

Witnesses:

W. F. BRICKMAN,

H. E. BRUBAKER.