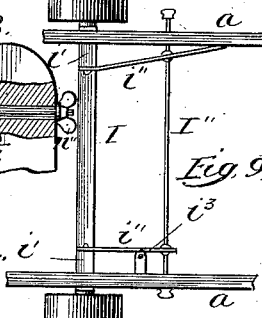
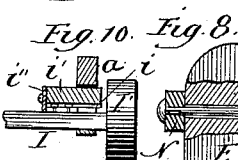
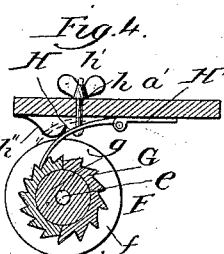
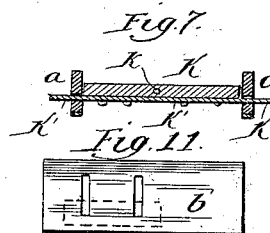
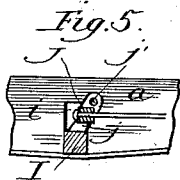
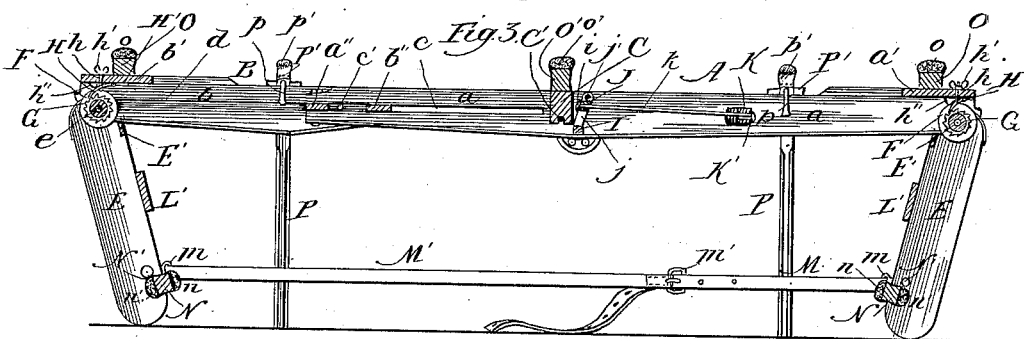
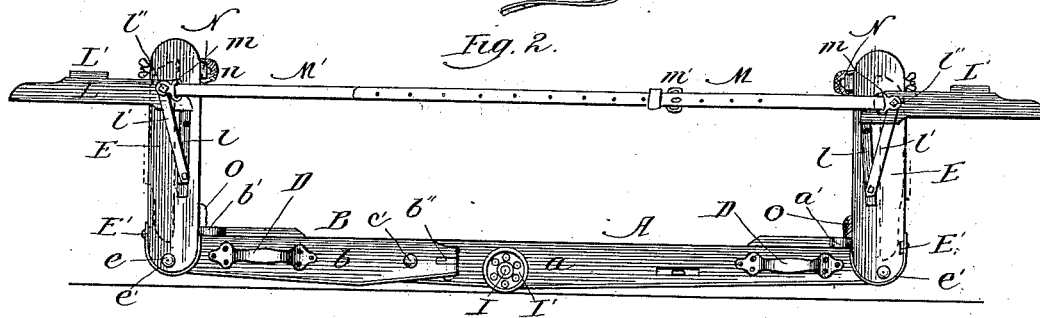
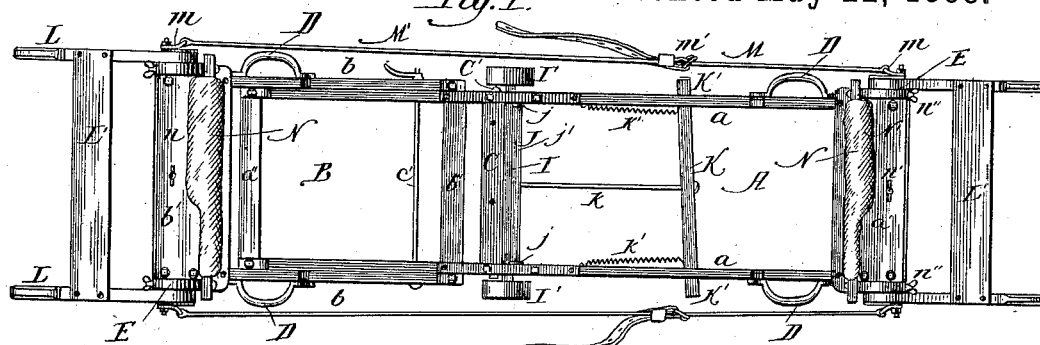


Patented May 22, 1888.



Witnesses:

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 Ott. Gametson,

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Walter S. Reynolds.

UNITED STATES PATENT OFFICE.

WALTER S. REYNOLDS, OF DE KALB, ILLINOIS, ASSIGNOR TO HIMSELF,
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PIANO-MOVER.

SPECIFICATION forming part of Letters Patent No. 383,190, dated May 22, 1888.

Application filed September 14, 1887. Serial No. 249,686. (No model.)

To all whom it may concern:

Be it known that I, WALTER S. REYNOLDS, residing at De Kalb, in the county of De Kalb and State of Illinois, and a citizen of the United States, have invented a new and useful Improvement in Piano-Movers, of which the following is a full description, reference being had to the accompanying drawings, in which—

- Figure 1 is a top or plan view showing the parts arranged to receive an upright piano. Fig. 2 is a side elevation of the parts, as in Fig. 1. Fig. 3 is a longitudinal section showing the parts arranged for a square piano. Fig. 4 is a detail in section showing the lock for the roller for operation in going up or down stairs. Figs. 5, 6, and 7 are details of the lock and operating device therefor for the center axle and wheels. Fig. 8 is a detail, partly in section, showing the means for securing the reversible end blocks. Figs. 9 and 10 are details showing a modification of the locking device for the center axle and wheels. Figs. 11 and 12 are details showing the attachment for the end rest-blocks.

This invention relates to a carrying device on which either upright or square pianos can be placed and supported for the purpose of moving from place to place, and has for its objects to improve the construction and operation of the end carrying-rollers to enable the roller to be locked for running up or down stairs; to improve the construction and operation of the center carrying-wheels by locking the wheels to carry the carriage on the center wheels or allow it to rise to run on the end rollers; to improve the form of the rest-blocks which support the piano, and to improve, generally, the construction and operation of the carriage or mover as a whole; and its nature consists in the several parts and combinations of parts hereinafter described, and pointed out in the claims.

In the drawings, A represents one section of the carriage-frame formed of side pieces *a* and end pieces *a'*, and, as shown, the ends of the end piece *a'* project beyond the outer face of the side pieces *a*. B is the other section of the carriage-frame formed of side pieces *b* and end pieces *b'*, and in width

this frame section is wider than the section A, so that the side pieces *a* just fit within the side pieces *b*. The side pieces *a* are slotted at that end adjacent to the side pieces *b* for the passage of the end piece *b'* and a tie-rod, *c'*, both of which pass through the slot *c* of the side piece *a* and are secured to the side pieces *b*, and, as shown, the inner face of each side piece has a groove, *d*, to receive the projecting end of the end piece *a'*, by which and the slots *c* and end piece *b'* the sections A B are held and moved in a straight line.

C is a cross-piece between the side pieces *a*, and held in place and to the side pieces by a draw-rod, *C'*.

D are handles, one for each side piece, *a* *b*, at the outer end, to be grasped by the parties using the carriage for lifting purposes.

E are supports, one for each corner of the frame A B, and pivotally attached to the side pieces *a* *b* by a rod, *e*, so that they can be turned up to form standards, as shown in Fig. 2, or turned down to form legs, as shown in Fig. 3; and running from each pair of supports E is a cross-bar, *E'*, which, when the supports are turned down to form legs, come in contact with the under face of the side pieces, *a* and *b*, and limit the inward swing of the supports and give them a rigid bearing when acting as legs.

F are rollers, one for each end of the frame A B, located between the side pieces, *a* and *b*, and mounted on the rod *e*, which forms a shaft on which the roller turns, and each roller at the center is cut away to form a groove, *f*, as shown in Fig. 4.

G is a ratchet-wheel secured to each roller F in the groove *f* around the center or hub *g*.

H is a pawl the free end of which when down engages with the teeth of the ratchet G, and, as shown, this pawl is pivoted or hinged to a plate, *H'*, secured to the under side of the end piece *a'* and the pawl is held down in contact with the ratchet-wheel by a spring, *h''*, attached at one end to the under side of the end piece *a'* to have its free end bear upon the pawl H, and the pawl H, as shown, is raised by a screw-threaded stem, *h*, having a head lying beneath the pawl and receiving a thumb-nut, *h'*, by which the stem can be

raised to lift the pawl from engagement with the ratchet-wheel or lowered to bring it into engagement therewith, the pawl being forced into engagement by the spring h'' . The roller 5 F, when the pawl H is clear of the ratchet-wheel G, is free to roll in either direction; but when the pawl H is in engagement with the ratchet-wheel G the roller is locked against movement in one direction, but is free to rotate in the other, and when in this condition 10 the carriage is arranged for use in moving up or down stairs.

I is an axle located midway of the frame of the carriage, and having its acting end on each 15 side projecting through slots i , formed in the side pieces a , which slots are of a greater depth than the depth of the axle, as shown in Fig. 6, and on each end of the axle is formed a spindle, on which is mounted a wheel, I'.

J is a bar located between the side pieces a adjacent to the axle I, and having at each end a piece, j , the acting end of which, as shown in Figs. 5 and 6, is beveled, and these 20 pieces j are pivotally mounted on a rod, j' , running from side piece to side piece a , so that the cross-piece J is free to swing on the rod.

K is a cross-piece located between the side pieces a and mounted on a plate, K', in the arrangement shown in Figs. 1, 2, and 3, which 30 plate extends through slots in the side pieces a , as shown in Fig. 7, and the cross-piece K is connected with the cross-piece J by a rod, k , and, as shown, the cross-piece K is returned to its normal position after being moved by 35 coiled springs k' , one for each end of the cross-piece, and connected with the cross-piece and with the side piece a . The cross-piece K in its normal position holds the cross-piece J to have the end pieces, j , lie above and in contact with the top of the axle, as shown in Fig. 40 5, and when the cross-piece K is moved back by pressing on the projecting end or ends of the plate K' the rod k swings the cross-piece J back, withdrawing the ends j from engagement with the axle I and allowing the axle, 45 by the drop of the carriage-frame, to pass into the upper end of the slot i , as shown in Fig. 6. The blocks or ends j , when in engagement with the axle, hold it down to throw the wheels below the bottom of the carriage, as shown in Fig. 3, and when disengaged the carriage 50 drops to bring the lower edge of the side pieces into line with the wheels, as shown in Fig. 2, and when in the position shown in Fig. 3 the carriage rides on the wheels I', and when in the position shown in Fig. 2 the carriage rides 55 on the end rollers, F.

L are handles, one for each side of the carriage at both ends and connected by a cross-piece, L', and pivoted to the supports E by a 60 bolt, l'' , and, as shown, on each support is a block, l , with the end of which the end of the handles comes in contact, to form a lock and stop for the handle, and for additional strength 55 the brace l' runs from the block l to the pivot-bolt l'' . The handles, when not in use, can be turned down, as shown by the dotted lines in

Fig. 2, and for use are turned up, as shown by the full lines in Fig. 2.

M and M' are straps, two for each side of 70 the carriage, and each strap, as shown, is connected to the post or support by a stirrup or loop, m , and the strap M is provided with holes to receive the tongue of a buckle, m' , on the end of the strap M'. These straps M M' 75 when buckled together form a brace for the supports E, and also a guard for the side tipping of the piano, and when the carriage is in the position (shown in Fig. 3) to receive a square piano the straps if desired, can be 80 buckled together to prevent the supports E from spreading apart.

N are rest-blocks, one for each end of the carriage, and against which the end of the piano lies in contact, and in order to prevent 85 injury to the finish of the piano the blocks are padded or covered with felt or other suitable material. Each rest-block on one side is left straight, and its opposite side, N', is projected somewhat and covered with a padding or felt 90 or other suitable material. Each block extends from support to support E at the end, and for use in moving an upright piano the straight face with the padding n is inside, and the block is bolted to the inside of the supports 95 E by suitable bolts, n'' , as shown in Figs. 1 and 2, and for use in moving a square piano the blocks are reversed, and the projecting portion N' with the padding n' is brought inside, and the block as a whole is secured to the outer 100 edge of the supports E, as shown in Fig. 3.

O are the rest-blocks on which the piano lies, a block being provided for each end of the carriage, secured to the top of the end 105 pieces a' and b' and covered by a padding or felt or other suitable material, o , and for moving an upright piano the blocks O are all that are required. An intermediate block, O', is secured to the cross-piece C for use in moving 110 a square piano, and this block is also covered with a padding or felt or other suitable material, o' , so that when the square piano is on the carriage it is supported at both ends and at the center.

P are sticks provided with a top or head, 115 P', on which is a block covered by a padding, p' , and each top or head is provided with a hook, p , to hook over the side rails, a and b , and attach the stick and head to the carriage, and these sticks are for the purpose of forming 120 a rest onto which a square piano can be turned edgewise over onto the supports O O', and for this purpose the length of the stick is the same or nearly the same as the length of the leg of a square piano. 125

The axle I can be locked down by means of a sliding block, i , carried by a spring, i'' , secured to the side piece a , as shown in Figs. 9 and 10, and with this construction a sliding 130 rod, I'', is provided, passing through the springs i'' and engaged with the springs by set-nuts or otherwise, and one of the springs i'' lies in contact with a projection, i^3 , on the side rail, so that by moving the sliding rod both

5 springs will act and withdraw the sliding blocks *i'* from the recesses *i*, allowing the carriage to drop and the axle to pass to the top of the slot *i*, and by raising the carriage the 5 springs *i''* will act and throw the blocks *i* into the slots to lock the axle down.

In use the carriage can be rolled or carried by extending the handles *L* to the place where the piano is located, and for an upright piano 10 the carriage is placed in the position shown in Figs. 1 and 2, with the central supporting-block, *O'*, removed. The piano is placed on the carriage, with the ends resting against the blocks *O*, and the end blocks arranged as 15 shown in Figs. 1 and 2, and the straps *M M'* buckled together, and for moving on a floor or other level surface the carriage is carried by the center wheels, *I'*, the wheels being locked down by the locking-pieces *j* and *i'*; but, if 20 desired, the wheels *I'* can be thrown out of use by releasing the axle *I*, in which case the carriage is carried by the end rollers, *F*, and in case the piano is to be carried up or down stairs the center wheels, *I'*, are thrown out of 25 use and the end roller, *F*, locked against movement except in one direction, and the carriage is run on such end rollers, suitable boards being placed on the stairway for the roller to travel on. The carriage is arranged to receive 30 a square piano by lengthening it, as shown in Fig. 3, and a square piano is placed on the carriage by turning the supports *E* down to form legs and arranging the sticks *P* so that the rear edge of the piano can rest thereon, 35 when by lifting on the front the piano can be turned edgewise and then slid onto the carriage, resting on the blocks *O* and *O'*, after which, by taking hold of the handles *D* and raising each end of the carriage, the supports 40 *E* can be turned up into the position shown in Fig. 2, allowing the carriage to rest on the rollers *F* or the wheels *I* in the same manner as for an upright piano, and the carriage can be run from place to place on the wheels or 45 the roller and be moved up and down stairs in the same manner as an upright piano.

The legs of a square piano are to be removed, as usual, and when the destination is reached the legs can be again put into place 50 and the supports *E* thrown down to form legs on which the carriage rests, and the sticks *P* hooked onto the side rail and the piano slipped onto the heads *P'*, to be turned down to stand on its legs. The handles *L* also furnish a

means for carrying the piano on the carriage 55 independent of the wheels and rollers. The end rest-blocks, *O*, are attached to the end pieces, *a'*, by bolts passing through the solid portion of each block and through slots in the end piece, *a'*, as shown in Figs. 11 and 12, and 60 by this manner of attachment the rest-blocks can be adjusted to the position desired for the ends of the piano to rest thereon. The tie-rod *c'* at one end is provided with a head, and the other end is screw-threaded to receive a hand- 65 burr or nut, by means of which the side pieces *b* can be clamped against the side pieces *a* and prevent movement of the side pieces in or out, and hold the carriage-frame either in its lengthened or shortened condition. 70

What I claim as new, and desire to secure by Letters Patent, is—

1. The combination, with a frame adapted to receive a piano, of a central axle and wheels, and a locking mechanism for the axle for 75 changing the wheels to carry the carriage or run clear thereof, substantially as specified.

2. A frame to receive a piano, having side pieces provided with slots *i*, in combination with an axle, *I*, having carrying-wheels *I'*, and 80 a lock for engaging and disengaging the axle to carry the weight on the wheels or allow the wheels to pass out of use, substantially as specified.

3. The combination, with a frame adapted 85 to receive a piano, of a roller, *F*, at each end, and central carrying-wheels, *I'*, mounted on a movable axle having a lock therefor, substantially as and for the purposes specified.

4. The combination, with the frame *A B* and 90 supports *E*, of the rest-blocks *N*, having a straight face on one side and a projected face, *N'*, on the opposite side, substantially as and for the purposes specified.

5. The combination, with the frame-sections 95 *A B* and end pieces *a' b'*, of the rest-blocks *O*, adjustable in and out on the end pieces *a' b'* for adapting the rest-blocks to the reception of different pianos, substantially as specified.

6. The combination, with the sections *A B* 100 of a carriage-frame and supports *E*, of the reversible blocks *N N'* and rest-blocks *O O'*, substantially as and for the purpose specified.

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Witnesses:

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