

Dec. 4, 1934.

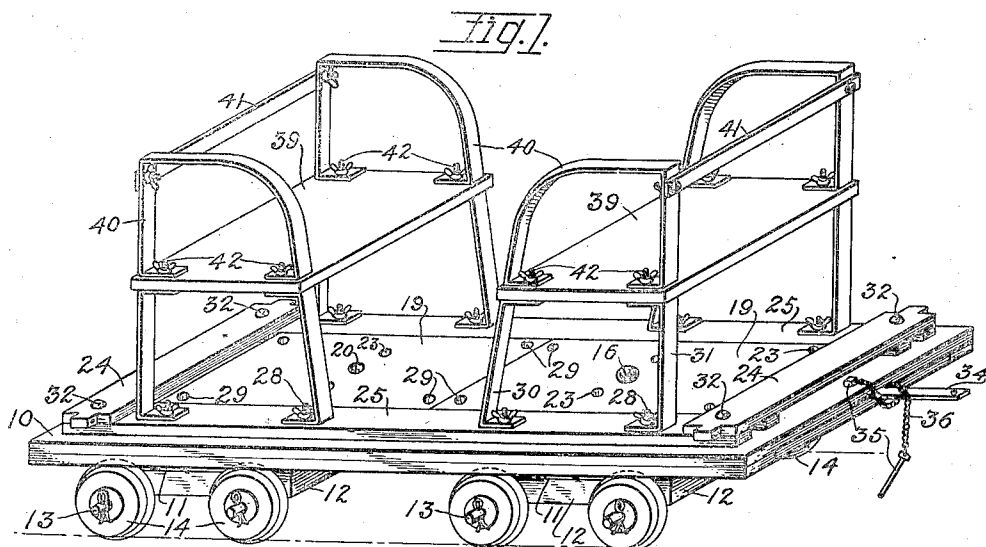
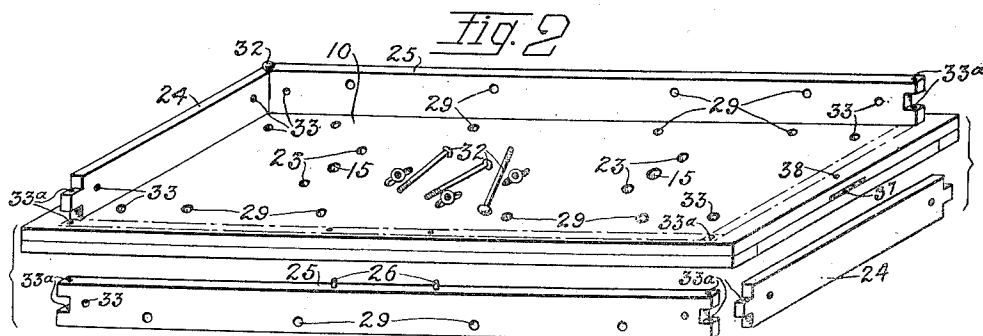
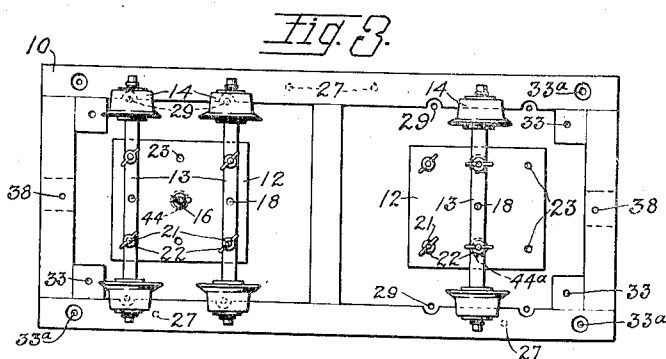
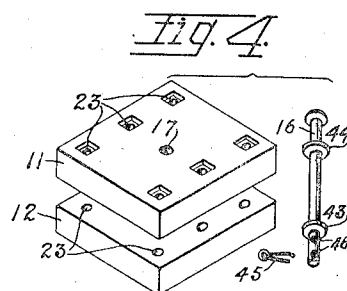
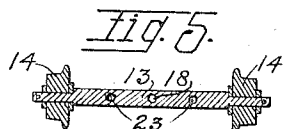
C. O. SMITH ET AL

1,982,834

CONVERTIBLE CARRIAGE

Filed June 29, 1933

2 Sheets-Sheet 1



INVENTORS,
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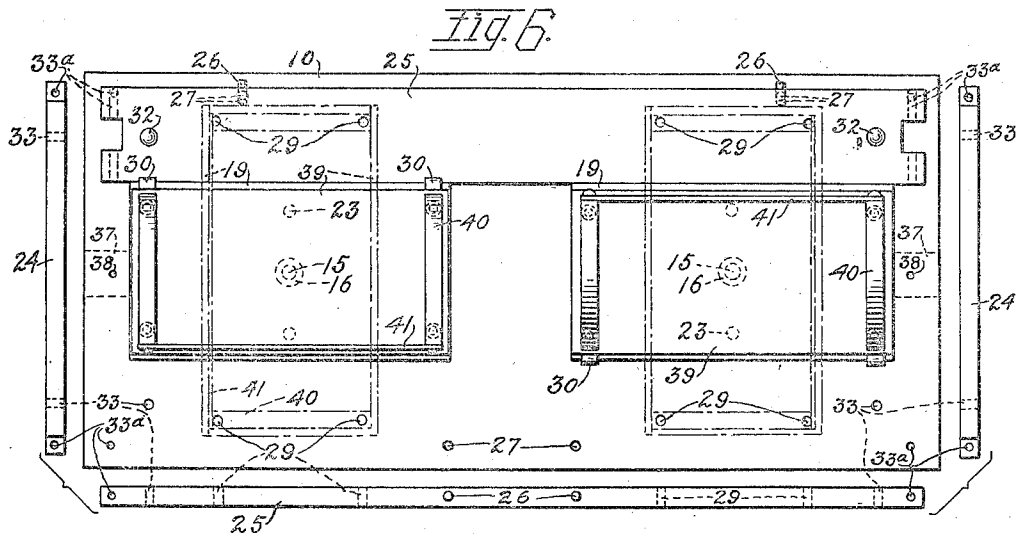
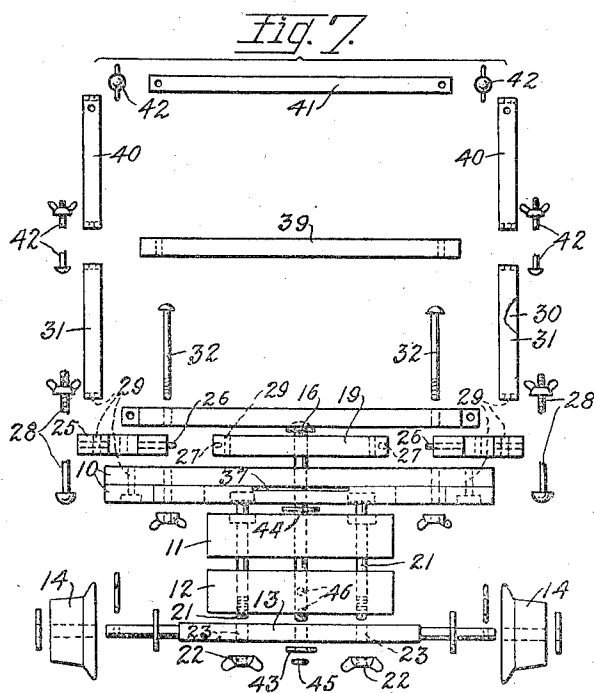
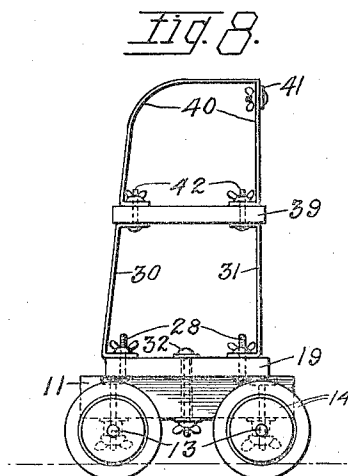
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2 Sheets-Sheet 2



INVENTORS,
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UNITED STATES PATENT OFFICE

1,982,834

CONVERTIBLE CARRIAGE

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Application June 29, 1933, Serial No. 678,264

8 Claims. (Cl. 46—48)

This invention relates to the patent-class of "toys", sub-class of "building blocks"; in another sense, it relates to the patent class of "land vehicles" or "railway rolling stock", being intended and constructed to carry one or more children along a road or rail-track; and in a third sense, it relates to educational devices, as it requires and develops initiative and insight in the child or children who assemble the parts in different ways so as to produce different forms of vehicles and to arrange the parts most compactly for storage or shipment in "knock-down" condition.

Therefore, this invention is entitled Convertible carriage, and it should be understood that it is a carriage in the broadest sense, for though the wheels here shown are flanged for use on a rail-track, other forms of wheels may be used, or this form may be supplemented by tires that make them into a different form. Moreover, sled-runners may be used in lieu of or interchangeable with the wheels, so hereinafter, the term traveling units is employed to broadly refer to any kind of wheels or runners that carry the axles or supporting beams that support the other parts of the device.

The main objects of the invention, therefore, are to provide entertainment, mental exercise, physical exercise, and healthful development, by means of a set of building units that are capable of being built into different forms of vehicles that are useful to carry persons and other things.

Other objects and important features are pointed out or implied in the following details of description, in connection with the accompanying drawings in which:

Fig. 1 is a perspective view showing the building units united to form a visavis-passenger-carriage.

Fig. 2 is a perspective view of the bed-plate or floor having an end-wall and a side-wall secured thereon, and another end-wall and side-wall detached and inverted, the normal positions of these walls being indicated by broken lines on the margin of the floor, the wall-securing bolts, except the one in use, being shown on the floor with their securing nuts.

Fig. 3 is a reduced size view showing the underside of the vehicle having the parts assembled to form a six-wheel vehicle instead of the 8-wheel vehicle shown in Fig. 1.

Fig. 4 is a perspective view showing two blocks or pillows with the pivot therefor and the pivotal adjuncts. Fig. 5 is a sectional view of the wheels and supporting beam or axle that is omitted from the six-wheel vehicle shown in Fig. 3.

Fig. 6 is a top plan view of the floor, four walls,

two seat-plates or bases and two seats; the latter being teteatete as shown in full lines, and visavis as shown in broken lines; one of the side-walls being bolted flat on the floor, and against the seat-plates for keeping them from turning on their pivots; the other three walls being disconnected and inverted in positions opposite to where they are normally seated and secured.

Fig. 7 is an exploded view, viz., an end view in which the parts are seen disconnected or displaced, but in such definite relation to one another that the normal assembled relation is readily understandable by the observers.

Fig. 8 is a left-side view of one of the two four-wheel vehicles or carriages that can be evolved from the parts shown in Fig. 1.

Referring to these drawings by reference characters and lead-lines which are respectively applied to similar parts in the several views, the invention is described in detail as follows:

A bed-plate or floor 10 may be of the plural-piece construction, as shown, or may be of any appropriate construction or of any appropriate material; but in the form shown, the margins and middle are built up with reenforcing strips, while the front and rear halves are hollowed at the underside and provide separate seats for two truck-bodies or superposed pillows 11 and 12 securable to axles or beams 13 which are normally journaled in wheels 14 or fitted in some other kind of traveling unit such as previously mentioned, and secured by cotter-pins or other removable devices that enable the wheels to be removed, replaced, interchanged, or substituted, at will of the users.

The front and rear parts of the floor are apertured to provide pivot-bearings 15 which may also be termed truck-pivot-bearings, inasmuch as they accommodate pins or pivots 16 which also extend thru corresponding pivot-bearings 17 and 18 of the pillows 11 and 12, respectively, as well as through the centers of seat-bases or plates 19 which have pivot-bearings 20 therethrough. In Fig. 1, one of the pivots 16 is omitted to show the pivot bearing 20; but in Fig. 3, one of the pivots is omitted because it is not needed in the front truck because the latter is rigidly united with the floor by means of primary bolts 21 and wing-nuts 22, two of these bolts extending through aligned primary bolt-holes 23 of the superposed members 12, 11, 10 and 19 on the front beam 13, and thru holes 23 of the latter; and two other primary bolts resting idly in the rear pair of primary bolt-holes for convenience

in keeping all parts intact as nearly as is expedient.

In connection with the last part of the preceding paragraph, it should now be understood that this invention includes eight primary bolts, so called to distinguish them from eight secondary bolts and four tertiary bolts; and while these designations are somewhat arbitrary, they are used with relation to the most expedient succession of steps in building up the vehicle; for instance, the trucks may be considered the base or foundation, and should be built up first, using the primary bolts in the primary bolt-holes to secure the pillows 11 and 12 to one another, and to the parts superposed thereon when the truck or trucks is or are not pivoted; next, the floor being pivoted on the trucks, and the seat-bases 19 on the floor (as in Fig. 1), accompanied by the prostrate walls 24 and 25, which latter have dowel-pins 26 fitted in dowel-sockets 27 of the respective seat-bases, the secondary bolts or fasteners 28 are then brought into service by fitting them in secondary bolt-holes 29 that extend through the parts 10 and 25 and through the respective feet of seat-legs 30 and 31 and these bolts are each provided with a wing-nut to combine therewith for securing these parts together. As the third step, building upward, the tertiary bolts 32 are seated in tertiary bolt-holes 33, as in Fig. 1, or in tertiary bolt-holes 33a of the floor 10 and walls 24 and 25 when the wall is erect as in the upper-left of Fig. 2.

The purpose of the erect walls is to combine with the floor 10 in forming a vehicle-bed or box in which sand or other materials may be held and carried so as to provide exercise and entertainment for children, in the loading, unloading and hauling, and to provide a depth of sand in which small children can play in the many ways so much enjoyed by them. The purpose of the prostrate walls being secured to the floor, as in Fig. 1, is to combine with the seat-bases 19 in reinforcing the floor for hauling heavy rocks, etc., with which to build the numerous things that only boys can think of; also to hold the seat-bases against turning from their different adjusted positions, as indicated in Fig. 6; and also to provide raised handles as provided by the prostrate end-walls 24, in Fig. 1, so the boys or children can pull or push the respective cars or carriages thereby when coupling two of such cars to one another by means of the coupling link 34 and pins 35, which latter are permanently and flexibly secured to the center of the link by means of a chain or chains 36. Both ends of the floor are slotted at 37 to receive the links 34, and apertured at 38 to receive the coupling-pins 35.

Each seat which includes the front legs 30 and rear legs 31, also includes a seat-plate 39, arm-rests 40, back-rest 41 and securing clamps 42, each of the latter comprising a bolt and a wing-nut in the present drawings. However, other forms of nuts may be used, instead of wing-nuts, especially where it is wished that the children shall learn how to use wrenches and other tools; and this applies to the nuts on all bolts mentioned in this device.

The washers 43 and 44 (Fig. 4) are removable from the truck-pivot 16, and the latter one of these washers is normally disposed between the floor and upper pillow 11 (Fig. 7), while the washer 43 is normally disposed between the lower pillow and the cotter-pin 45. This cotter pin fits interchangeably in two diametral bores 46

in the lower end of the pivot 16; the lower one being for use when the pivot extends through the seat-base in addition to the floor and pillows; and the upper one being used when the seat-bases are omitted from the assembly, as obviously they may be when the children decide to have only a plain flat car, in which case, the walls and seats may also be left off and used separately; or either the walls or the seats may be used on the floor independently of and exclusively of one another.

It is noted that the rear legs 31 are vertical, and the front legs 30 are oblique, in consequence of their respective angles being different, and this requires the mental act of selecting certain parts for certain places; and, on the other hand, it enables the builders to evolve different designs, by reversal of the front and rear legs, by having all legs vertical on one bench, and all legs oblique on another bench, in which latter cases the bolts would be omitted in the feet of the rear legs.

Now considering Figs. 3 and 4, it is evident that the lower pillows, one or both, may be substituted by additional washers between the upper pillows and the floor, or by using such washers between the beams 13 and the adjacent pillows as indicated at 44a in Fig. 3. Moreover, one of the rear beams 13 and its wheels 14 may be omitted, and the remaining beam and its wheels positioned and secured the same as the front beam and wheels; thus is obtained a two-axle four-wheel carriage or vehicle, leaving two beams or axles (with their wheels) free for use with the two free pillows for building up an additional vehicle, for instance, one similar to that shown in Fig. 8 wherein it is obvious that either one or two of the pillows may be used. Moreover, the major assemblage of Fig. 1 can be transformed so as to produce two vehicles such as shown in Fig. 8, leaving the floor 10 and walls 24 and 25 free to be made into a third amusement device such as a sand-box or a table, the latter by securing the walls together and then placing the floor thereon.

Furthermore, chairs or benches are provided for the table, by removing them from their bases (Fig. 8), and this leaves two coaster-cars comprising the two complete trucks and the plates or chair-bases 19 pivoted thereon so that two children can coast on an inclined track, sitting side by side; or the plates 19 may be turned longitudinally with respect to the line of travel, so the children (sitting single or in tandem) may stretch their legs out on the plate 19 while holding to the edges of the plate with their hands. When the benches or passenger-seats are removed from the plates 19, this leaves bolts 28 free to be used for other purposes, for instance substituting two of the longer bolts 32 which may now be used as pivots for the parts 11 and 19 in Fig. 8, while others may be used in the back-rests or bars 41 removed from the benches or seats and used to couple the trucks to one another so as to combine them into an 8-wheel truck or vehicle on which boards, boxes, brush or what-not may be hauled. The benches or seats may be backless and armless, and the arms may be inverted and bolted to the table to form table-legs, viz., either bolted direct on the floor or plate 10, or on the walls thereunder.

Assuming that the building blocks or elements are built into the two coaster-cars and the table, as described in the next preceding paragraph, it will be seen that such coaster-cars and tables, when knocked-down, can be rebuilt into a car

such as shown in Fig. 1, it being borne in mind that previous to so rebuilding, the plate 10 and bench-arms or passenger-seat-arms 40 constituted the table; and that the parts 11, 12, 13, 14, 30, 31, 39 and 42 constitute the elements of the two coaster-cars described in the first part of the next preceding paragraph.

The players or builders (children) may find it thrilling to build a high platform carriage on which they may sit and let their feet hang down, and this may be done by removing the arms and backs from these devices, shown in Fig. 8, and replacing them with the floor 10, viz., securing the front end of the table or floor to one base 19, and the rear end to the other base 19, by means of the bolts 42 which may be somewhat longer and have long threaded ends; or the bases may also be removed, so that the table or floor 10 rests on the legs 30 and 31 in such position that the bolts 42 pass therethrough and thence through the bolt-holes 29 of the floor or table-top 10. As another interchange that results in a different type of car and a different type of table, the legs 30 and 31 may be transferred from the car of Fig. 8 to the floor or table-top and secured under the latter, by bolts through the holes 29; then the seat-arms 40 may be secured on the base or plate 19 in lieu of the legs 30 and 31. When the parts 10, 30 and 31 are thus used in forming a table, enough parts 11, 13, 14, 19, 28, 32, 40, 41 and 42 are free for building two separate vehicles such as described in the preceding sentence, then the walls or beams 25 may be connected to the seat-arms (while the latter are secured on the load-carrying plates 19, as just previously described), by placing the uprights of the seat-arms in the bifurcated ends of the beams 25 and passing the bolts 32 through the bolt-holes 33a, thereby transforming the two minor or four wheel vehicles into a long major or eight-wheel vehicle on which poles, or other long objects can be hauled while passengers may occupy the seats provided by the load-carrying plates or bases 19 and arms or standards 40.

The foregoing explanations are not intended to be exhaustive of the various devices that can be built from this set of building units, nor is it intended to limit this invention to the precise kind, style or number of building units here shown, for the invention is susceptible of numerous changes within the scope of the inventive ideas as implied and claimed.

Our claims are as follows:

1. The combination in a knock-down toy, of a set of building units including a floor, traveling units under the floor and provided with means removably connecting them to the floor in proper relation for carrying the floor, and walls provided with means removably securing them to the marginal edges of the floor in erect position, the second said means including bolts that extend through bolt-holes in the walls and in the floor, said walls having bolt-holes at right angles to the first said bolt-holes, said bolts being removable from the first said bolt-holes and adapted to be passed through the second said bolt-holes and through the floor for securing the walls in prostrate position on the floor, for purposes specified.

2. The combination in a knock-down toy vehicle, of a set of toy building units including a floor, traveling units provided with means removably connecting them to the under side of the floor in proper relation for carrying the floor, walls provided with means to removably secure them on the floor in erect position and in

prostrate position alternately, a passenger seat, fasteners to removably secure the passenger seat on said walls when the walls are in prostrate position, and a seat-base provided with means to removably secure it on said floor and between said walls, the said passenger seat being removably attachable to said seat-base by means of said fasteners, the latter being effective for holding the passenger seat in position between said walls when the walls are erect.

3. The combination in a knock-down toy vehicle, of a set of toy building units including a floor, traveling units provided with means removably connecting them to the floor in proper relation for carrying said floor, side-walls and end-walls seatable on said floor in erect position and prostrate alternatively and being provided with bolt-holes in their ends, bolts to fit in said bolt-holes and to removably engage with said floor for detachably securing the walls to one another and to the said floor in their erect position, said bolts constituting means to secure said walls to said floor in prostrate position, a passenger seat, a base-plate pivotally and removably mounted on said floor and provided with means to removably secure said seat thereon, said side-walls constituting means to engage said seat-base and prevent it from turning on its pivot when the walls are secured to said floor in their prostrate position, said walls and base being vertically movable with respect to one another to disengage them and permit the seat-base to be turned on its pivot, for the purpose specified.

4. The combination in a toy vehicle, of a set of toy building units comprising a passenger seat having legs, a plate constituting a seat-base and having a central pivot-bearing, means to secure the passenger seat to the seat-base, a pillow having a pivot-bearing, a pivot in the pivot-bearings of said seat-base and said pillow to permit the seat-base to be turned on the pillow, traveling units, and means to operatively connect the traveling units to said pillow for carrying the latter.

5. The combination in a knock-down toy vehicle, of a set of toy building units including a floor having two rows of vertical laterally alined openings therethrough in opposite end portions, each set of said openings including a pivot-bearing equally spaced from the lateral edges of the floor, and each set also including two primary bolt-holes; two pillows on which said floor is removably seated each of said pillows having two rows of bolt-holes substantially parallel with the lateral edges, and each pillow also having a central pivot-bearing alined with two of these bolt-holes; a pivot removably extending thru one of the pivot-bearings of said floor and thru the pivot-bearing of one of said pillows while the latter is under the floor to pivotally support one end of the floor; four axles each having wheels journaled thereon and having bolt-holes therein located for registration with the bolt-holes of said pillows and of said seat; two of said axles being under the pivoted pillow and at opposite sides of said pivot; a set of four bolts extending through registering bolt-holes of the said pivoted pillow and the said two axles and being provided with nuts to hold these axles in place; a pair of bolts that extend respectively thru registering bolt-holes of a third one of said axles and of the second pillow and of said floor and are provided with nuts to hold these units in rigid relation with one another and in such

relation that the third axle crosses the center of the second pillow.

6. The combination in a knock-down toy vehicle, of a set of toy building units including a floor, two trucks under and connected to the floor for supporting the latter, seat-bases on the floor, seats having separable arms and legs and provided with means to secure the legs to the seat-bases, said floor and trucks and seat-bases and seats being separable from one another, means being provided to secure the seat bases respectively on said trucks when the latter are separated from the said floor and thereby disconnected from one another so that the seats on the respective seat-bases separately combine with the respective trucks to form separate passenger vehicles from parts of said knock-down vehicle.

7. A composite toy vehicle produced by combining a table-top or plate and table-legs of a knock-down table with trucks and passenger-seats of two simple or minor vehicles, the combination being as follows;—said table-top being

secured in horizontal position in said trucks and thereby converted into a floor of the composite toy vehicle, said passenger seats being secured on said floor in proper upright positions to receive passengers thereon, and the said table-legs being secured respectively on the ends of said passenger-seats in proper positions for converting them into arms or arm-rests of the respective passenger-seats.

8. A composite toy vehicle produced by combining load-carrying plates and standards and traveling units of two simple or minor knock-down toy vehicles which include means to connect and secure the said plates to the traveling units, with beams each having bifurcated ends provided with bolt-holes through their furcations, and with bolts in said bolt-holes while parts of said standards are seated in said furcations and secured therein by said bolts, all substantially as specified.

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70	145
75	150