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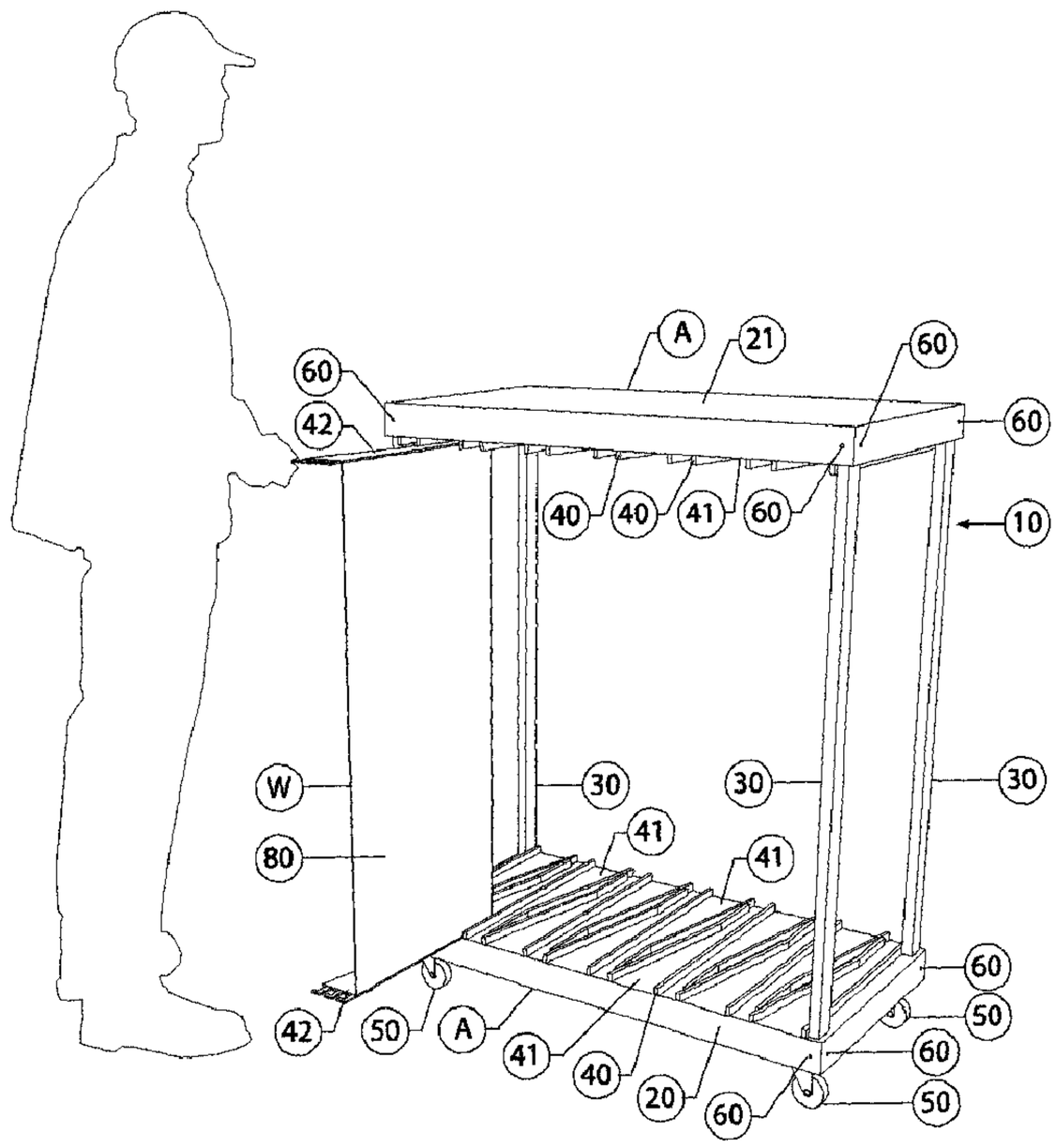
(54) Titre : CHARIOT DE RANGEMENT OU DE TRANSPORT D'ETAGERES DE VENTE AU DETAIL
(54) Title: STORAGE OR TRANSPORTATION CART FOR RETAIL SHELVING



(57) Abrégé/Abstract:
A lightweight utility cart for the transportation and/or storage of retail display shelves comprising a thermoplastic polymer base and top , a plurality of metal corner posts, and a plurality of wheels. Currently available retail display shelves are placed vertically into

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(57) Abrégé(suite)/Abstract(continued):
such a cart from two opposing sides of the cart and secured within the cart by way of integrated partitions formed in the top and base members providing a method of separation and capture for inserted shelves thus eliminating the likelihood of shelf damage resulting from contact with adjacent shelves whilst placed in the cart. Upon the loading of the shelves into the cart, the shelves can be safely stored in the cart for use later or easily transported throughout a typical retail environment safely and securely for placement in a retail shelving system.

ABSTRACT

A lightweight utility cart for the transportation and/or storage of retail display shelves comprising a thermoplastic polymer base and top , a plurality of metal corner posts, and a plurality of wheels. Currently available retail display shelves are placed vertically into such a cart from two opposing sides of the cart and secured within the cart by way of integrated partitions formed in the top and base members providing a method of separation and capture for inserted shelves thus eliminating the likelihood of shelf damage resulting from contact with adjacent shelves whilst placed in the cart. Upon the loading of the shelves into the cart, the shelves can be safely stored in the cart for use later or easily transported throughout a typical retail environment safely and securely for placement in a retail shelving system.

STORAGE OR TRANSPORTATION CART FOR RETAIL SHELVING

BACKGROUND OF THE INVENTION

The present invention relates to utility carts. The present utility cart relates more specifically to utility carts used in the transportation and storage of retail display shelving.

Utility carts are used in a variety of retail applications and typically include an upper and lower shelf positioned horizontally, 4 elongated legs or posts and a plurality of wheels or casters attached to the underside of the shelf or base. The shelves are typically attached to the legs by rivets, screws or welds.

These types of conventional carts are well know in the art and it can be said that wheeled carts have been in commercial and retail service for hundreds of years. The necessity for the transportation of articles that an individual could not physically or safely perform on ones own is well founded. Normally being comprised of 4 wheels, a frame and a plurality of fixed or removable shelves and often a handle, this standard cart design is vigorously employed in all areas of manufacturing and a staple in the retail service sectors of a modern economy. The basic design of the utility cart has changed little since it's inception because of it's ability to be easily produced and it's overall functionality and simplicity. Not only does the utility cart aid in the production and distribution of manufactured articles in a commercial setting, it provides the individual charged with the relocation of articles a safe method of conveyance for achieving this task. Typical carts of this type are shown for example in the following The United States of America patents:

6,213,483

Gaffney

4,595,107

Welsch

5,718,441
Kern et al

4,890,748
Visser

and Canadian patent:

1,308,760
Robert J. Cohn, et al

For most items transported within retail and commercial environments, the conventional shelf carts are the design of choice primarily because manufactured articles typically present in a predominately planar form or are packaged in a manner to acquire this efficient and serviceable design allowing for the relatively safe and secure placement of individual or multiple articles on a single cart shelf. This cubic structure associated with a majority of packaged articles allows most currently available conventional utility carts to demonstrate their proficiency in this area. Yet there are instances where articles for transport do not present generally in this form and thus render the standard utility cart appreciably inappropriate for use and therefore create a need for article specific utility carts to provide safe and efficient conveyance of these often irregularly shaped or cumbersome items as in United States of America patents:

8,534,470
Lin, et al

5,871,219
Elliot

There are also instances where products for storage or transport are positioned vertically in carts or similar apparatuses for reasons of efficiency and product protection as well as occasionally providing the cart operator a potentially easier and safer manner in which to load or unload articles from the cart. Furthermore, the use of article dividers that are often constructed of a pliable yet firm material, whether it be for the placement of articles in a horizontal or vertical alignment, as a damage prevention feature for the articles whilst on utility carts has been employed in the area of product transportation for many years. Typical carts or constructs demonstrating this concept of vertical or horizontal article isolation placement for transport or storage are shown, for example, in the following United States of America patents:

6,986,431
Koester, et al

4,022,326
Marconi

1,272,207
H.L. Bullen

1,912,864
B.M. Stannard

5,924,577
Gessert

3,868,123
Berg et al

4,050,671
Coleman

3,608,920
Rubin

3,349,924
C.J. Maurer et al

and the following Canadian patents:

2,388,115
Smith

1,305197
R.L. Rosa et al

Though such carts have successfully dealt with storage and transportation issues of specific articles, there exists an area for improved safety and efficiency in the field of retail display shelf storage and transport.

SUMMARY OF THE INVENTION

As this consideration relates to the current invention, it is common in retail environments for employees to reposition and replace display shelving. Currently, retail display shelf transportation within a retail setting is customarily achieved by the somewhat improvisational use of the aforementioned standard utility cart. These carts commonly used in retail settings fail to sufficiently address the need for the safe and secure transport of retail display shelving because typical end bracket profiles on a variety of retail display shelves are commonly fabricated in somewhat of a polygonal shape more reflective of a triangle and as a consequence make it very difficult to stack. Most retail display shelf

manufacturers offer this asymmetrical, structurally advantageous design which has proven to be very effective when addressing load bearing issues but unintentionally present a problem when the stacking or laying down of display shelves is attempted. The predominate use of this anomalously shaped end bracket for retail display shelf support in the manufacture of retail shelves has created a need for a dedicated utility cart that can proficiently store and transport these types of shelves. By not only providing a safe and secure method of transport for the previously described irregularly shaped retail display shelves, a retail display shelf specific utility cart will invariably assist in reducing display shelf damage and as a result lessen the operating costs associated with equipment replacement.

An additional concern for retailers is the storage of auxiliary display shelving. In a typical calendar year many retailers alter displays based on seasonal or cultural interests as defined by consumers, thus causing the quantity of shelves in use to fluctuate. For this contributory reason, most retailers maintain a discretionary number of extra retail display shelves in their place of business but unfortunately typical retail store environments invariably have limited storage space for supplemental equipment due to the stocking requirements of products intended for sale. As a result, a designated area for display shelving is occasionally non existent or precarious at best. With this lack of dedicated retail display shelf storage, display shelves are often placed perilously on top of one another with little regard and as a consequence periodically create damaged shelves which then must be replaced immediately for reasons of safety and functionality. Therefore an undamaged supply of surplus display shelves is essential and must be maintained as the need for display shelves fluctuates. With this continuous oscillation of the total number of shelves in use, auxiliary shelving must be maintained and stored in a safe manner that allows them to be conveniently and readily accessible by employees.

Thus it would be advantageous for a utility cart that addresses the current shortcomings of the conventional utility carts presently available in the area of retail display shelf transportation and /or storage.

BRIEF DESCRIPTION OF THE DRAWINGS

Many of the attendant advantages of the present invention will become more readily apparent and better understood as the following detailed description is considered in connection with accompanying drawings, in which:

FIG 1. shows a perspective view of the preferred embodiment of the present invention.

FIG 2. is a perspective view of the top and base members of the cart illustrating an exemplary embodiment of the invention.

FIG 3A. is a perspective view of the underside of the base member and the application of a typical caster to said base member, according to the present invention.

FIG 3B. is a perspective view in exploded form of the application of a typical caster to said base member, according to the present invention.

FIG 4. is a partial exploded perspective view of the application of posts into the base member, according to the present invention.

FIG 5. is a perspective view of the application of the top member on the metal posts for completion of assembly of the present invention.

FIG 6A and 6B. are enlarged fragmentary perspective views of post securement, according to the present invention.

FIG 7. is a perspective view of the present invention illustrating the insertion of shelves into the cart, according to the present invention.

FIG 8. shows a perspective view illustrating a plurality of shelves inserted into the cart, according to the present invention.

FIG 9. is an enlarged fragmentary perspective view of the cart illustrating the arrangement of shelves once positioned in the cart, according to the present invention.

FIG 10. is an exploded perspective view of the cart shown in FIG. 1, according to the present invention.

FIG 11. is a perspective view of a typical application of the fully assembled cart and the operators relative positioning when employing the cart.

DETAILED DESCRIPTION OF THE INVENTION

The present invention provides a light weight modular utility cart which is easy to manufacture and assemble. Ease of manufacture and assembly is accomplished by way of the carts structural design and simplicity of its components.

The term "shelf, shelves or shelving", as used herein shall refer to retail display shelves utilized in a retail display shelving system.

As shown in FIG.1, the foregoing limitations of prior utility carts have been overcome by the present invention in it's various embodiments, in which, according to one embodiment, a utility cart 10 is provided having a one piece moulded base member 20, corresponding one piece moulded top member 21, 4 metal elongated corner posts 30 and a plurality of rotatable casters 50.

Along with providing a rigid yet lightweight apparatus, there are numerous advantages for the use of a moulded thermoplastic polymer material in the composition of the devices'10 upper 21 and lower members 20, as shown in FIG. 1. The fundamental

reason being the ability to incorporate the shelf separation and capture partitions 40 into the base member 20 and top member 21, as shown in FIG. 1, during the casting process achieving enhanced structural integrity of the partitions 40 and the resultant consistency of partition 40 spacing. The use of a non marring thermoplastic polymer in the creation of the top 21 and base 20 members of the device 10 reduces the incidence of aesthetic damage to shelves 80 during the insertion of shelves 80 into the device 10 and, conversely, the retrieval of shelves 80 from the device10.

As shown in FIG. 2, the moulded base member 20 and complimentary moulded top member 21 of the present invention include corresponding shelf separation and capture partitions 40 rising perpendicularly from said base member 20 and, correspondingly, emanating downwardly from said top member 21 ,when the device 10 is assembled, creating vertically protuberant boundaries which will reflect the end profiles 42 of the retail display shelving 80 which are intended for insertion into the device 10 for storage or transport. These shelf separation and capture partitions 40 create a plurality of upper and lower aligned apertures which as a result define access points 41, as shown in FIG. 2, to which the individual shelves 80 could be inserted or withdrawn. These partitions 40, which as well as acting as guide members, would also limit the shelf's depth of insertion into the device 10 and thus position the shelves 80 optimally within the device 10. The integration of these partitions 40, within the top 21 and bottom 20 members, provides a mechanical separation between inserted shelves 80 as well as positive shelf detention. Due to the fact that a considerable number of shelf manufacturers produce a variety of proprietary shelf end profiles 42 as well as an assortment of shelves 80 with varying dimensions, numerous shelf specific moulds would need to be manufactured in order to produce an assemblage of top 21 and base 20 members ensuring accurate mating between the shelf contemplated for insertion into the device 10 and the device 10.

Within the moulded base 20 and top 21 members of the device 10, there would exist 4 cavities 70, as shown in FIG. 2, generated during the injection casting process for acceptance of 4 metal elongated supporting corner posts 30. After firmly urging the 4 post ends into the 4 complimentary bores 70 of the base member 20, as shown in FIG. 4, the top

member 21 would be positioned over top of the 4 now inserted metal corner posts 30, as shown in FIG. 5 to which one can one can now begin firmly engaging the post ends into the receiving cavities 70 formed on the underside of the top member 21. Once positioned in the complimentary bores 70 of the moulded top 21 and bottom 20 members, stainless steel set screws 60 would be driven laterally first through the moulded top 21 and base 20 members, as shown in FIG. 6A and 6B, and then continuing into the portion of the metal corner posts 30 which are now residing in the post cavities 70. The introduction of set screws 60 inhibits the inserted posts 30 from being removed from the device 10 accidentally as well as augmenting the structural integrity of the device 10. The dimensional lengths **Y** of the 4 metal corner posts 30, and the resultant space that would exist between the upper member 21 and lower member 20 once the device 10 was assembled, would be determinate upon width **W** of the display shelves 80, selected to be inserted into the device10. Rotatable stem style casters 50 and caster sleeves 52, as shown in FIG. 3A and 3B, would then be inserted into receiving sockets 51 on the underside 23 of the base member 20, as shown in FIG. 4, securing the casters to the device 10 and thus allowing the device 10 mobility.

With the present invention assembled, as shown in FIG.7, an individual can now begin to insert retail display shelves 80 into the device 10, as shown in FIG. 7. As an individual faces one of the devices' 2 longest sides, also acknowledged as the width **A** of the device 10, as shown in FIG. 7, he or she can now insert vertically oriented shelves 80, as shown in FIG. 7, into the device 10 by way of an insertion access point 41 as defined by the partition 40 spacing created on the base 20 and top 21 members. Advancing the shelves 80 into the device 10 until the shelves 80 achieve a consolidated fit with the partitions 40 in the device 10, as shown in FIG. 8.

To achieve the maximum number of retail display shelves 80 capable of being inserted into the device 10, one half the total number of retail display shelves 80 the device 10 is capable of storing would be inserted from one side of the of the device 10, as in FIG. 7 ,and the other half of the total number of retail display shelves 80 the device 10 is capable of storing, would be inserted from the opposing side of the device 10, as shown in FIG. 7. This loading of retail display shelves 80 from opposing sides of the device 10, as shown in

FIG. 7, allows for the most efficient use of space within the devices'10 dimensional parameters.

Once the retail display shelves 80 are inserted into the device 10, an individual can now move the device 10 safely and securely to a desired location within a retail or commercial environment and then extract the shelves 80,currently positioned in the device 10, for the installation of shelves 80 into a retail shelving system or, furthermore,loaded shelves 80 may remain in the device 10 for future use. FIG.11 illustrates the cart fully assembled and how an operator typically could position him/herself when either loading or unloading shelves from the cart, and as such, demonstrate the physical advantages available to the operator. Minimal physical burden to the operator was a prime concern in the carts design and as a result all shelves removed from the cart or installed in the cart are achieved with nominal effort.

By reason of the foregoing description, a further object of the invention is to provide a utility cart for which replacement components can be easily obtained and incorporated into the device 10 with minimum effort and instruction in the event the device 10 experiences accidental damage.

The above description is not intended to limit the meaning of the words used or in the scope of the following claims that define the invention. Rather it is contemplated that future modifications in structure, function or result will exist that are not substantial changes in what is claimed are intended to be covered by the claims. Thus while preferred embodiments of the present invention have been illustrated and described, it will be understood that changes and modifications can be made without departing from the claimed invention.

CLAIMS

The embodiments of the invention in which an exclusive property or privilege is claimed are defined as follows:

1. A utility cart for the storage and or transportation of retail display shelves in a retail or commercial environment comprised of:

a base member constructed of a thermoplastic polymer material containing integrated shelf positioning and securing partitions, 4 integrated post cavities and 4 integrated stem caster sockets;

a top member constructed of a thermoplastic polymer material containing integrated shelf positioning and securing partitions and 4 integrated post cavities;

a plurality of rectangular tubular steel posts for conjoining and aligning said base member with said top member;

a plurality of rotatable stem casters for insertion into underside of said base member stem sockets enabling device portability.

2. The utility cart as set forth in claim 1 wherein said base member and said top member of the device are individually cast of a thermoplastic polymer material by way of an injection moulding process.

3. The utility cart as set forth in claim 2 wherein said shelf positioning and securing partitions for the objective of shelf capture and separation, are propagated simultaneously during the injection moulding process and thus become integrated into what comprises said base member and said top members of the device.

4. The utility cart as set forth in claim 2 wherein the resulting shelf positioning and securing partitions generated on said base member and said top member during the process of injection moulding, efficaciously delineate end bracket profiles of retail display shelving for deliberate shelf positioning demarcation on what is generally considered the top surface area of said base member and conversely what is generally considered the underside surface of said top member when the device is assembled comprising a designated shelf containment area for the expressed purpose of passively securing and isolating shelves whilst said shelves reside in a designated vertical position whilst in the device.

5. The utility cart as set forth in claims 1,3 and 4 wherein the shelf positioning and securing partition patterning created during the injection moulding process of said base member represents a mirror image of the shelf positioning and securing partition patterning of said top member created during the injection moulding process.

6. The utility cart as set forth in claim 1 wherein a plurality of post receiving cavities disposed in the corner positions of a substantially rectangular shape, are incorporated into said moulded base member and said moulded top member during the injection moulding process.

7. The utility cart as set forth in claim 1 and 6 wherein a plurality of rectangular tubular steel posts are firmly inserted into post receiving cavities, and achieving a mechanical bonding commonly referred to as a "friction fit" for the expressed purpose of conjoining and aligning said base member with said top member.

8. The utility cart as set forth in claim 1 wherein a plurality of stem caster receiving sockets are incorporated into underside of said base member during the injection moulding process and disposed in the corner positions of a substantially rectangular shape.

9. The utility cart as set forth in the claims 1 and 8 wherein said rotatable stem casters are inserted into stem receiving sockets which are disposed on the underside of said base member.

10. The utility cart as set forth in claim 1, wherein the general footprint of the device is that most representing a rectangle to which the width refers to the longest dimension of the device observed in a horizontal plane and the depth refers to the dimension of the device observed in a generally horizontal plane which is perpendicular to that which is defined as the width and the height of the device refers to the dimension of the device initially observed at what is generally considered ground level and terminating at the uppermost point of the device observed in a general vertical plane.

11. The utility cart as set forth in claims 1 and 10 wherein the overall dimensions of said device, that which define the height, the width and the depth parameters of the device, will be expressly contingent upon the dimensional parameters of available said retail display shelves intended for use in the device as defined by various manufacturers of said retail display shelving.

12. The utility cart as set forth in claims 1,3, 4 and 5 and by reason of the arrangement thus far described, wherein the method of insertion of retail display shelves into the device for the purposes of storage is accomplished with the grasping of what is generally known as the "back of the shelf" whilst said shelf intended for insertion into the device disposes vertically and shelf positioning and securing partitions presented on top of said base member and on the underside of said top member generally appear to be oriented in a substantially parallel relationship to what would normally be considered the shelves' end bracket profile, all the while being anteriorly disposed to one of a pair of corresponding upper and lower apertures, for the objective of advancing said shelf transversely toward device for insertion into the device.

13. The utility cart as set forth in claims 1, 3, 4 and 12 wherein 1/2 the total number of shelves the device is capable of storing are inserted from one side of the device and the remaining 1/2 the total number of shelves the device is capable of storing are inserted from the opposing side of the device and thus providing a resultant inserted shelf arrangement in which the back of one shelf generally appears adjacent to the front of the next shelf successionally inserted from the opposing side of the device.

14. The utility cart as set forth in claim 12 wherein the "back of the shelf" refers to that portion of said retail display shelf which is generally considered the width of the shelf as well as that portion of the retail display shelf which abuts what is normally considered the wall section of a retail display shelving system when the shelf is mounted into said shelving system.

15. The utility cart as set forth in claim 1, wherein the "front of the shelf" refers to that portion of said retail display shelf which is generally considered the width of the shelf as well as that portion of the retail display shelf which generally appears furthest from what is normally considered the wall section of a retail display shelving system when the shelf is mounted into said shelving system.

16. The utility cart as set forth in claim 1 in which the term "vertical", when referencing said shelf positioning for the purpose of shelf insertion or retrieval from the device, refers to the shelf in rotation of 90 degrees, either clockwise or counter clockwise, from the position in which the shelf would normally appear while in use and affixed to a retail display shelving system and hence placing what is generally known as the width of the shelf in a vertical position.

17. The utility cart as set forth in claims 1,6 and 7 wherein set screws are further provided as additional attachment means and enhanced structural integrity of the fastening of said rectangular tubular steel posts to said base member.

18. The utility cart as set forth in claims 1,6 and 7 wherein set screws are further provided as additional attachment means and enhanced structural integrity of the fastening of said rectangular tubular steel posts to said top member.

19. The utility cart as set forth in claim 1 wherein the device may be shipped in a compact unassembled state for initial assembly or conversely, once in use, disassembled and shipped in a compact state for reassembly at an alternate location.

20. The utility cart as set forth in claim1 where in the the overall width of the device is dependant upon the total number of shelves intended for insertion into the device in conjunction with what is generally considered a most dimensionally amenable utility cart.

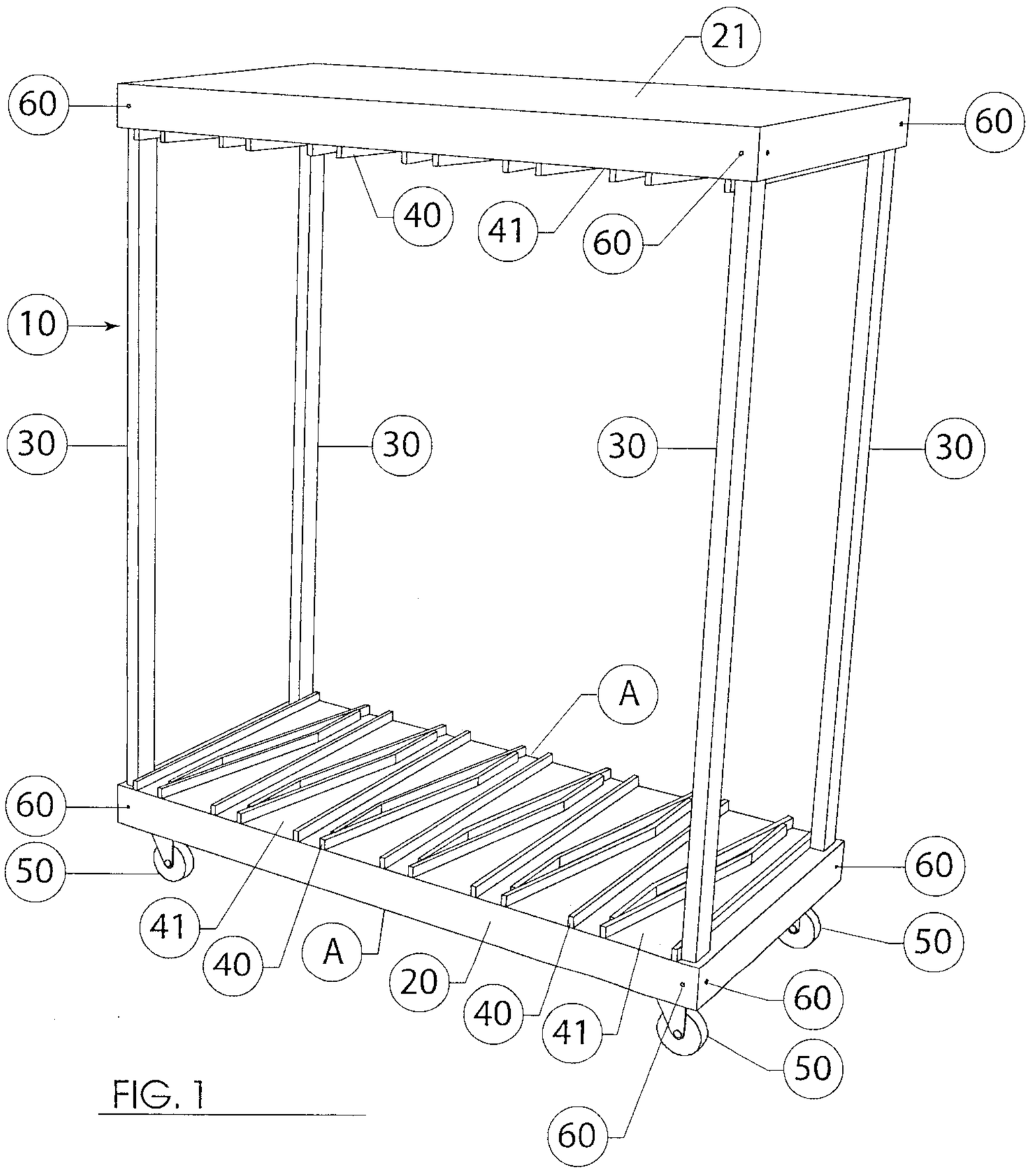

FIG. 1

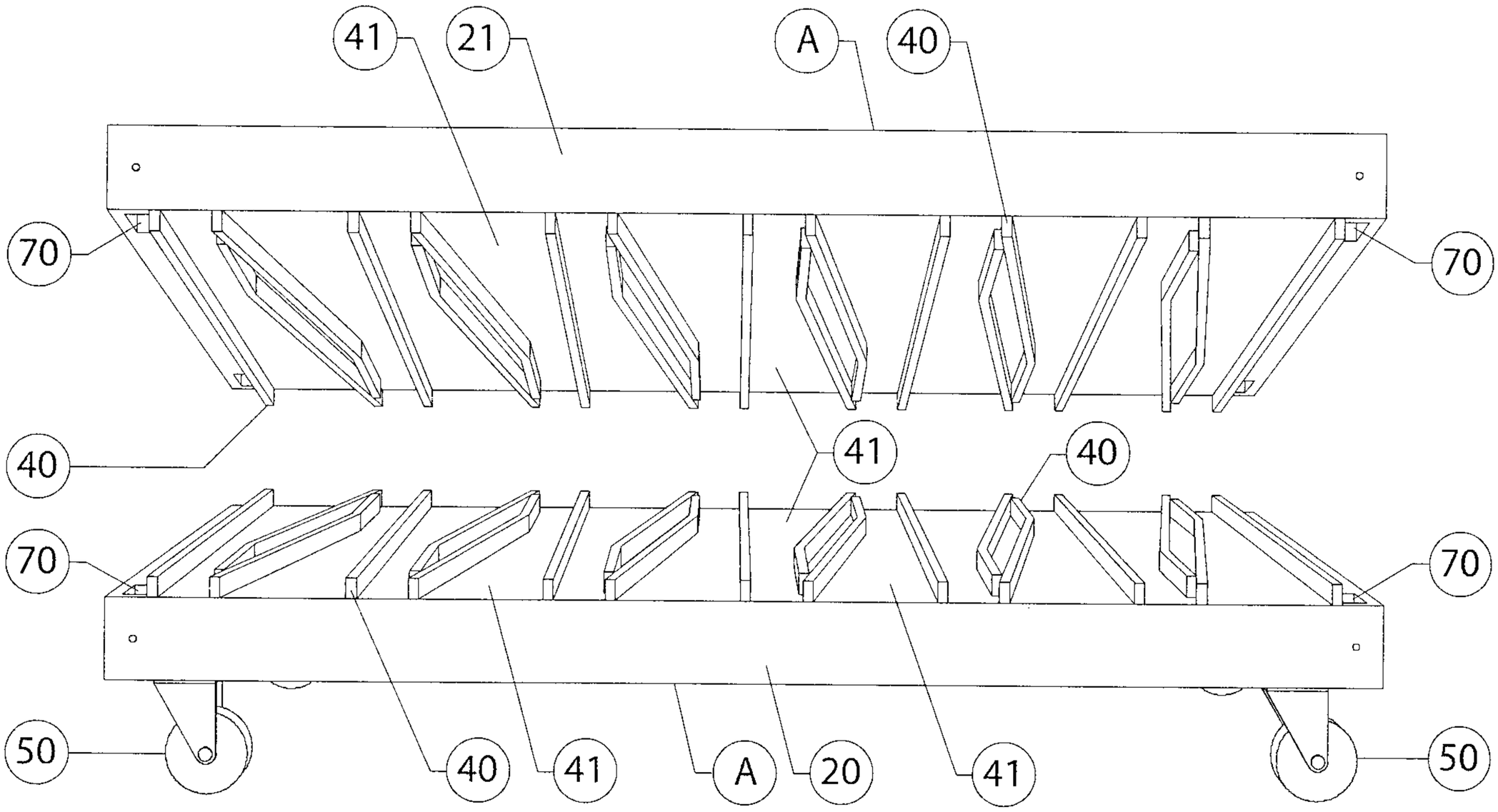

FIG. 2

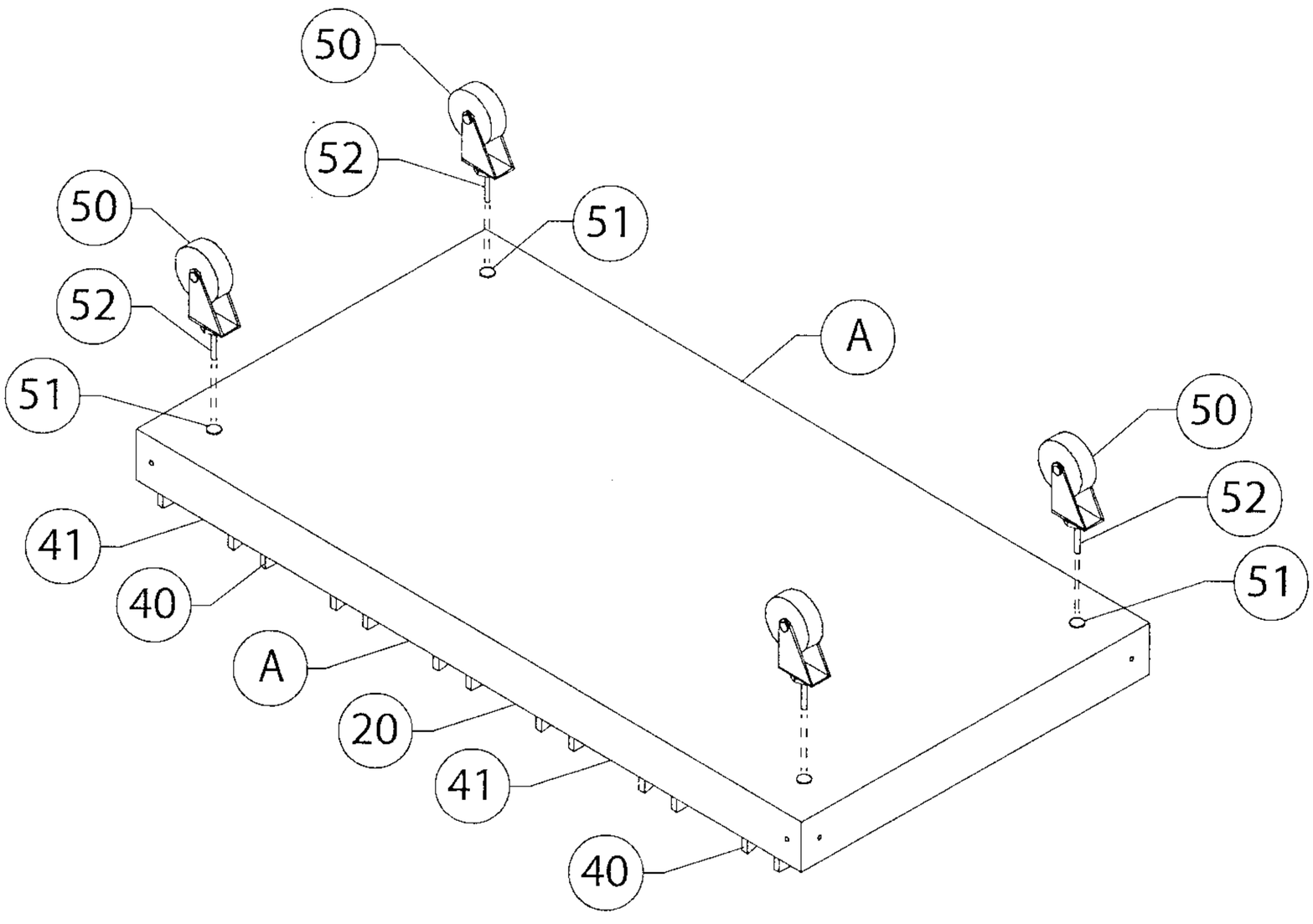

FIG. 3A

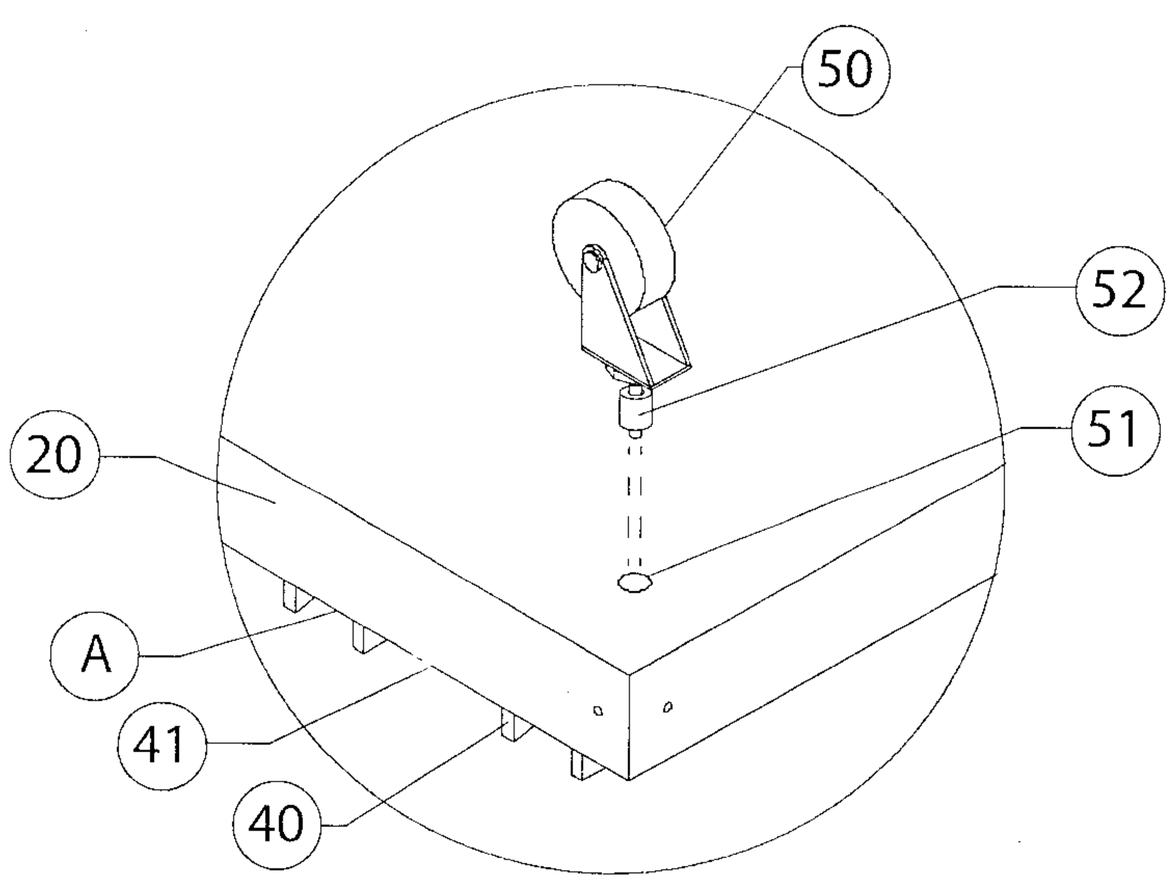

FIG. 3B

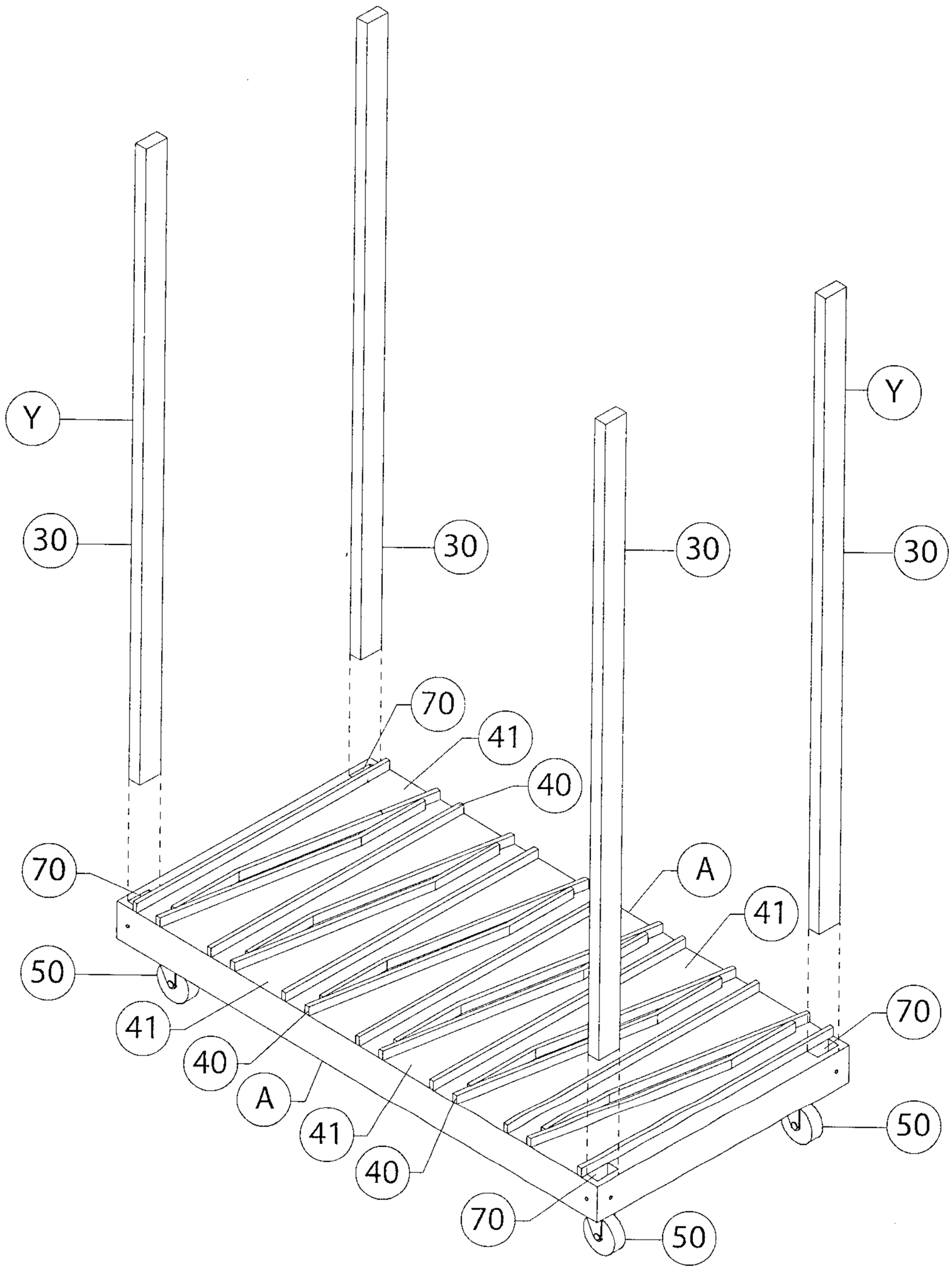

FIG. 4

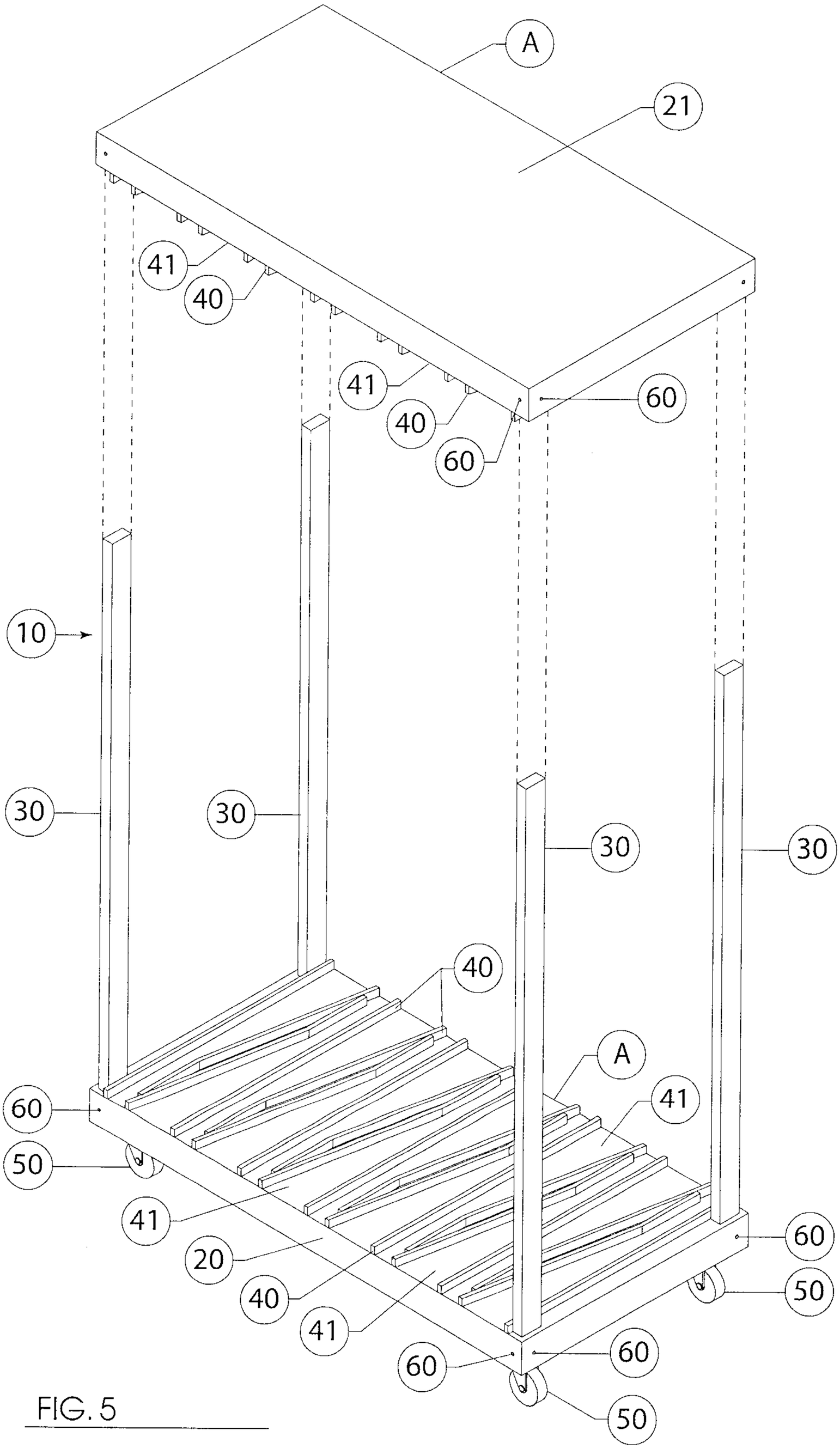
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FIG. 5

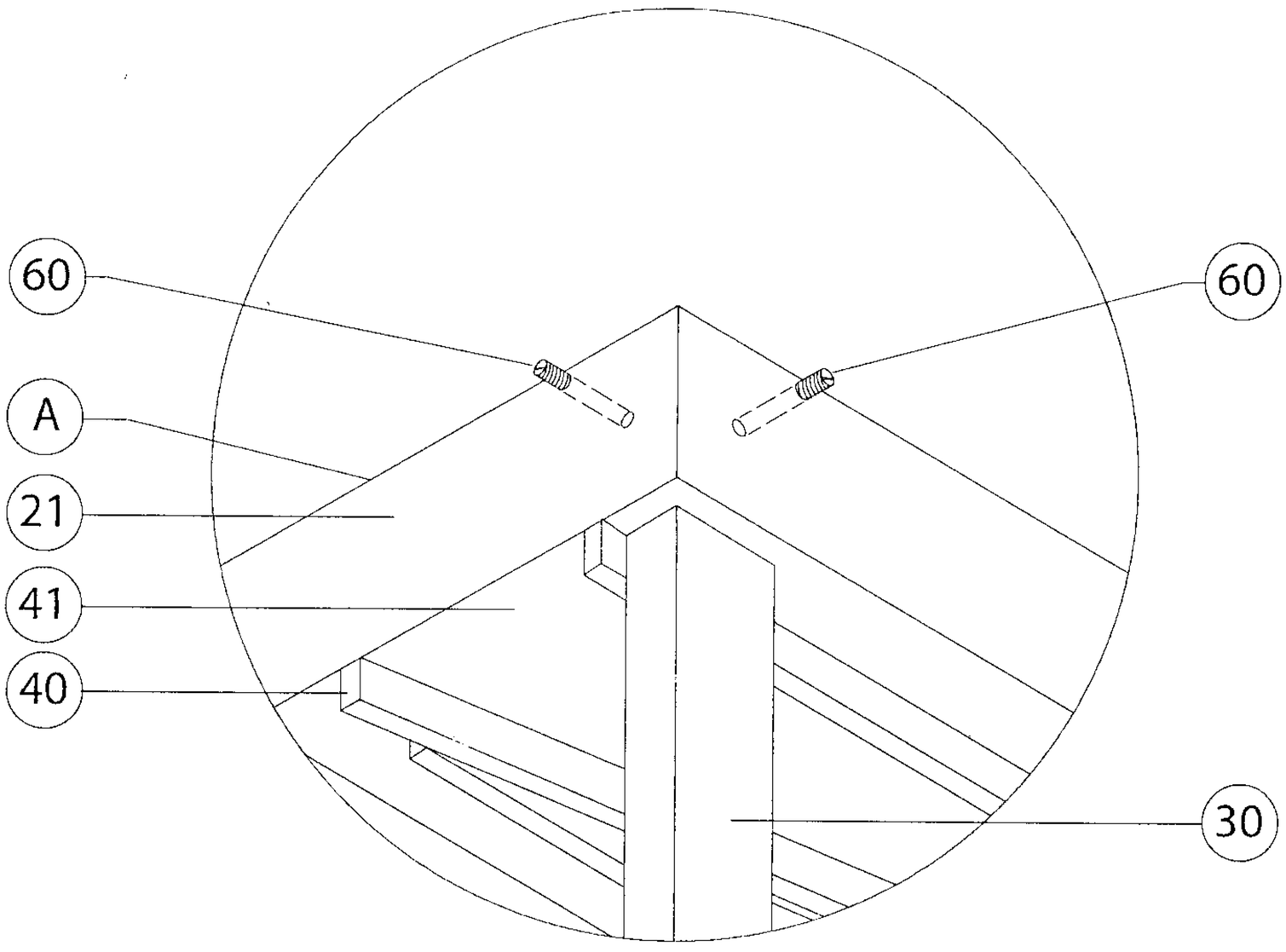

FIG. 6A

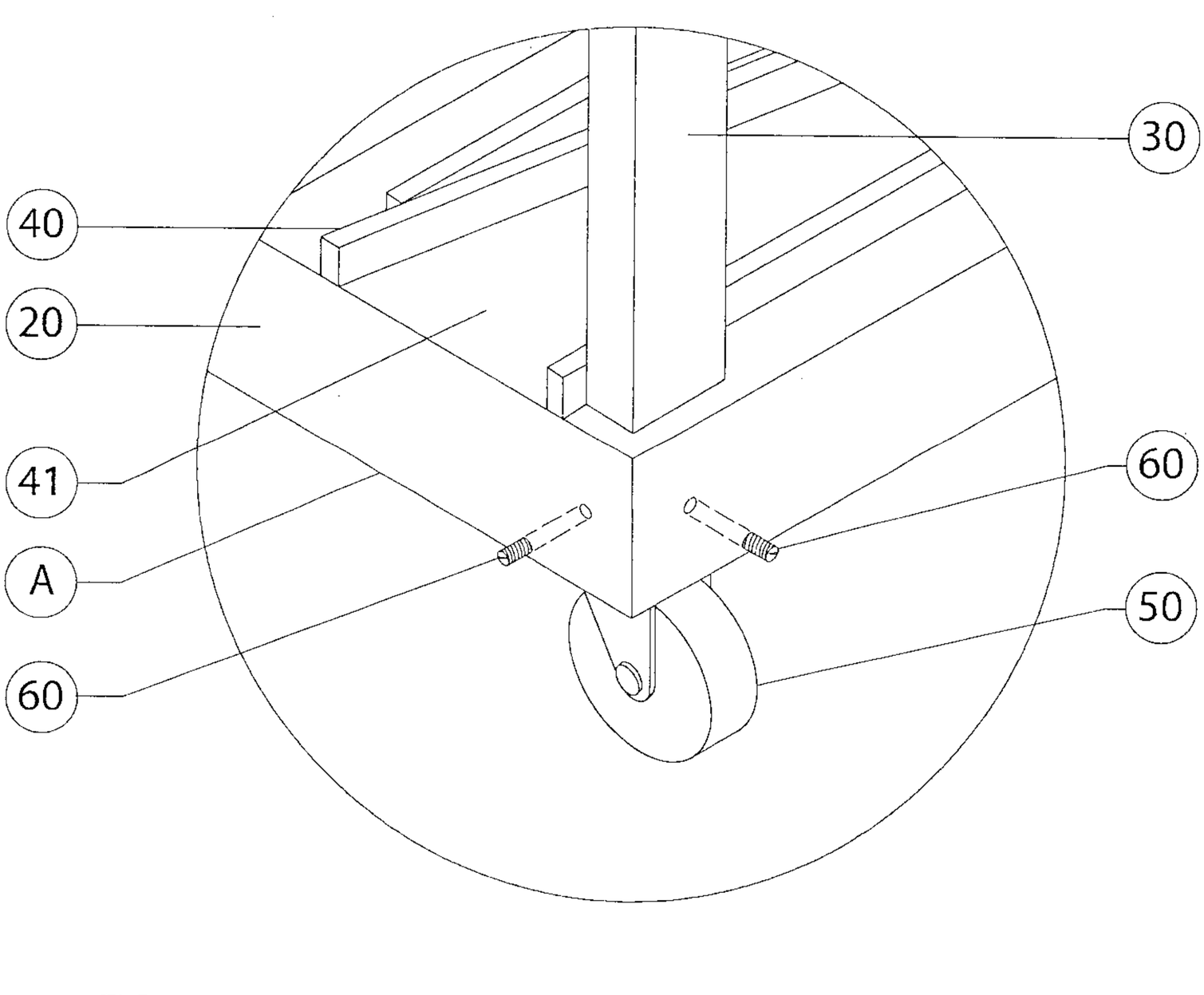

FIG. 6B

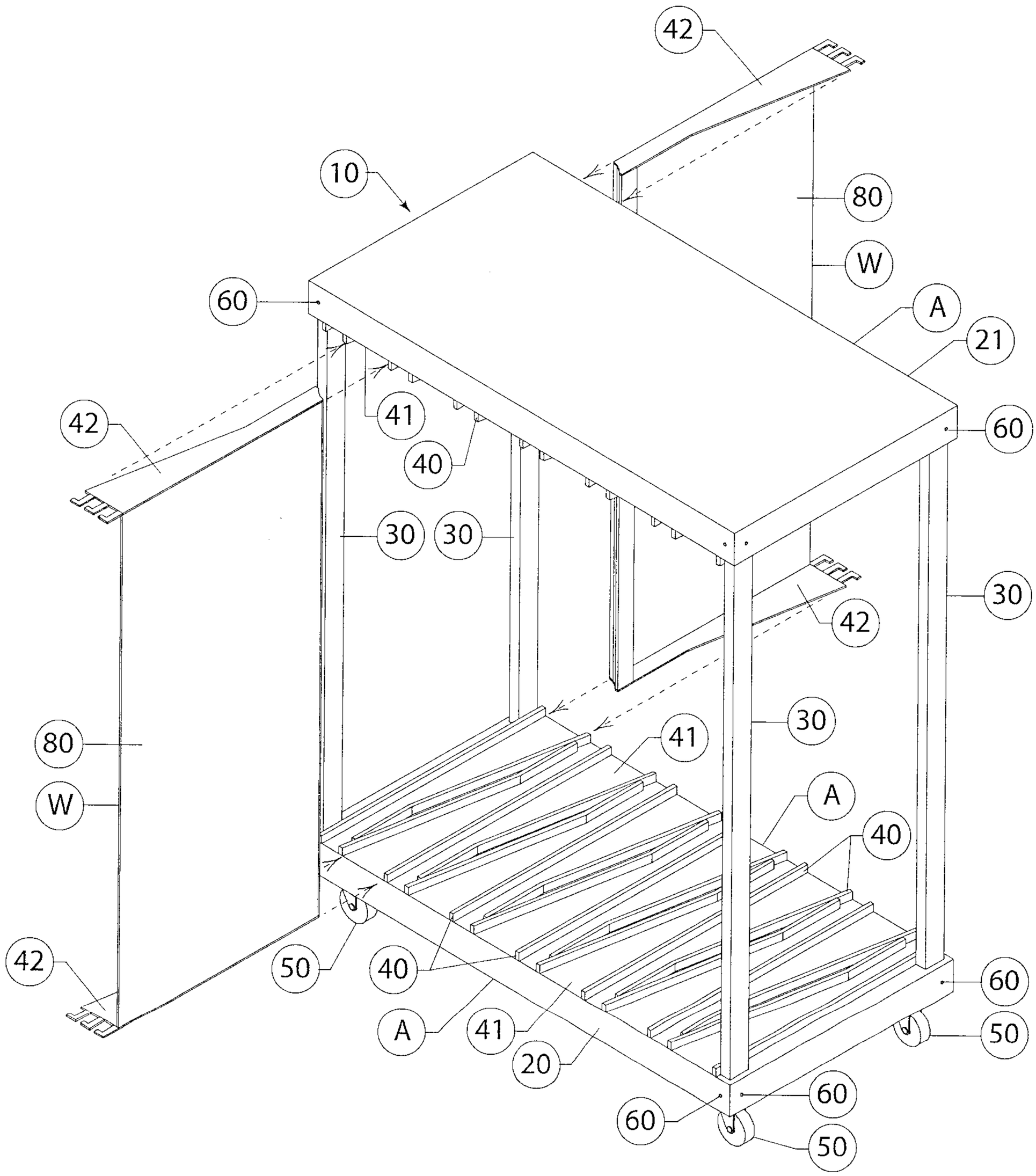
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FIG. 7

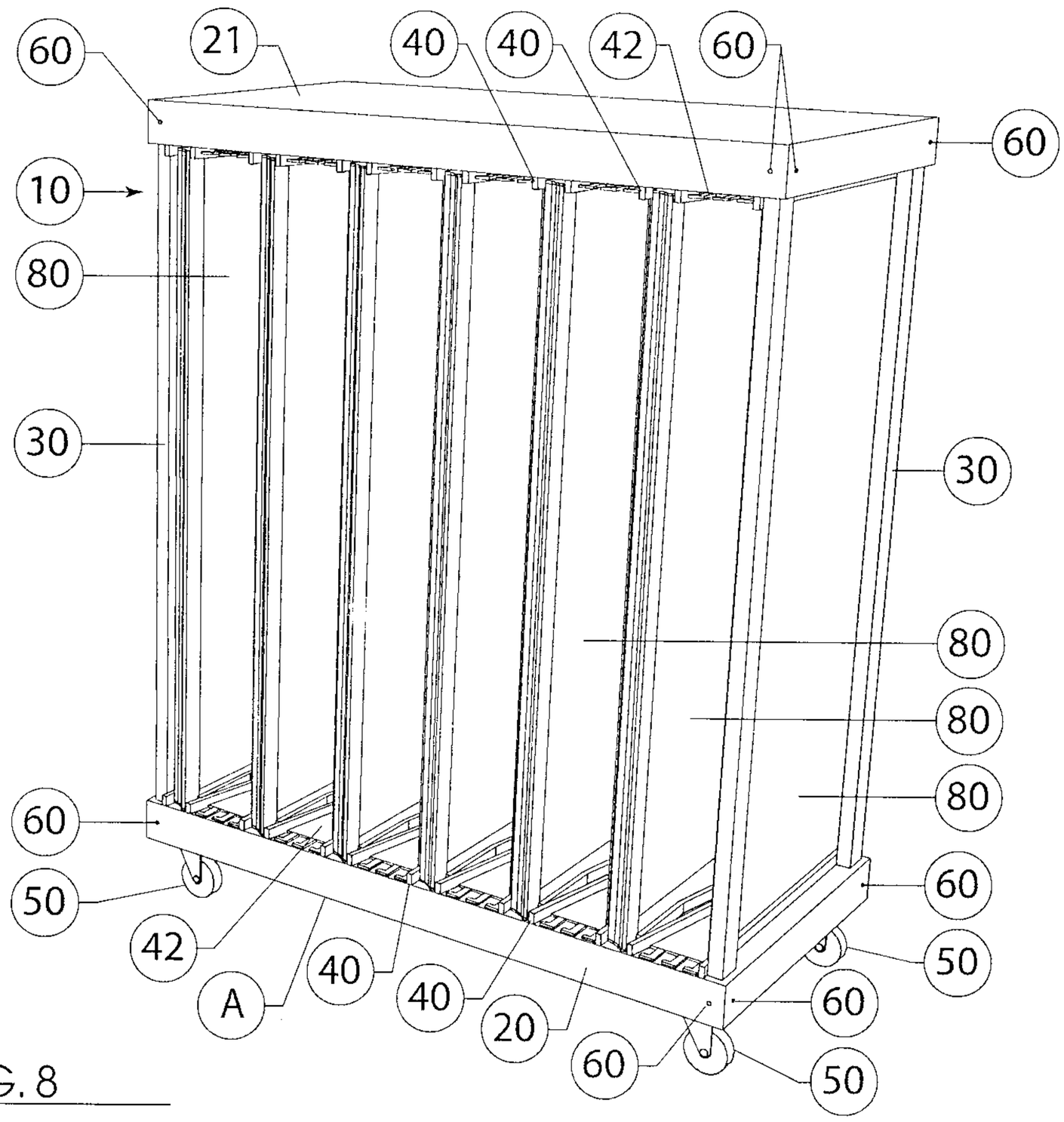
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FIG. 8

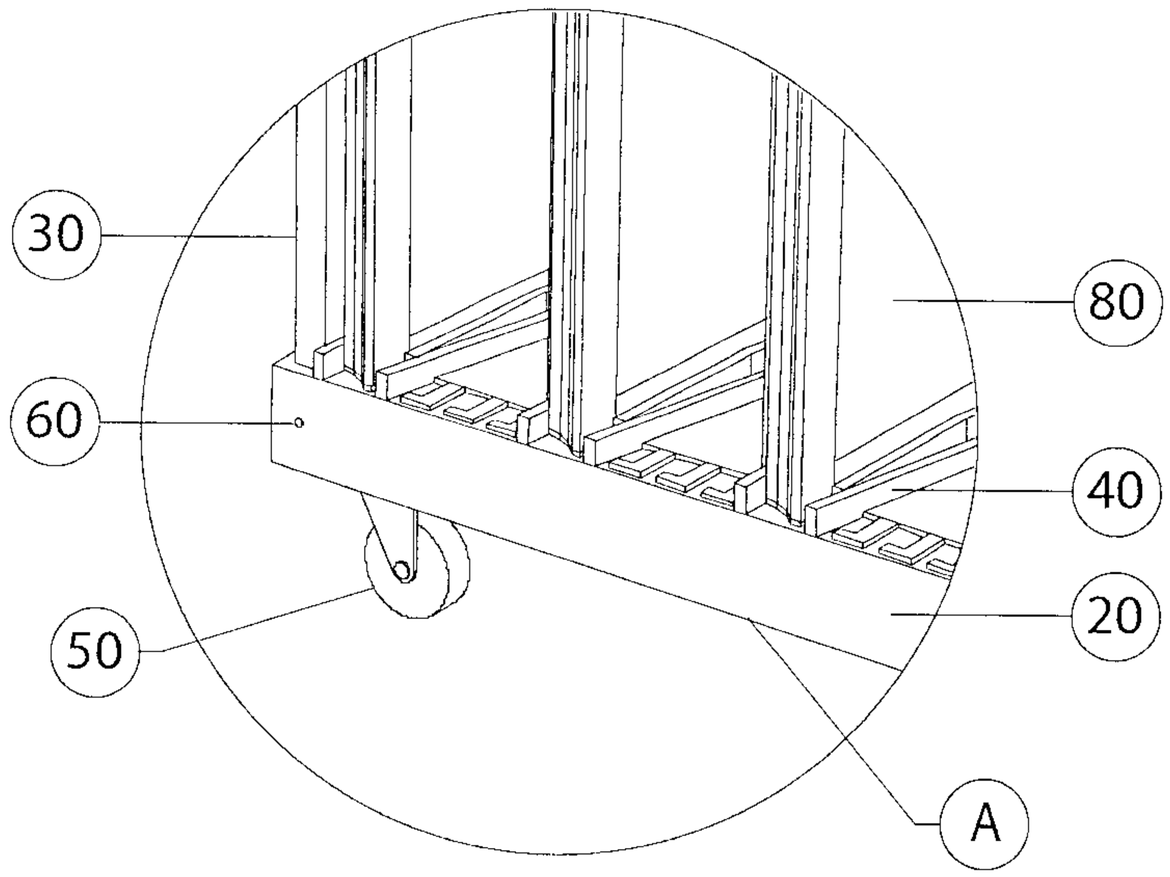
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FIG. 9

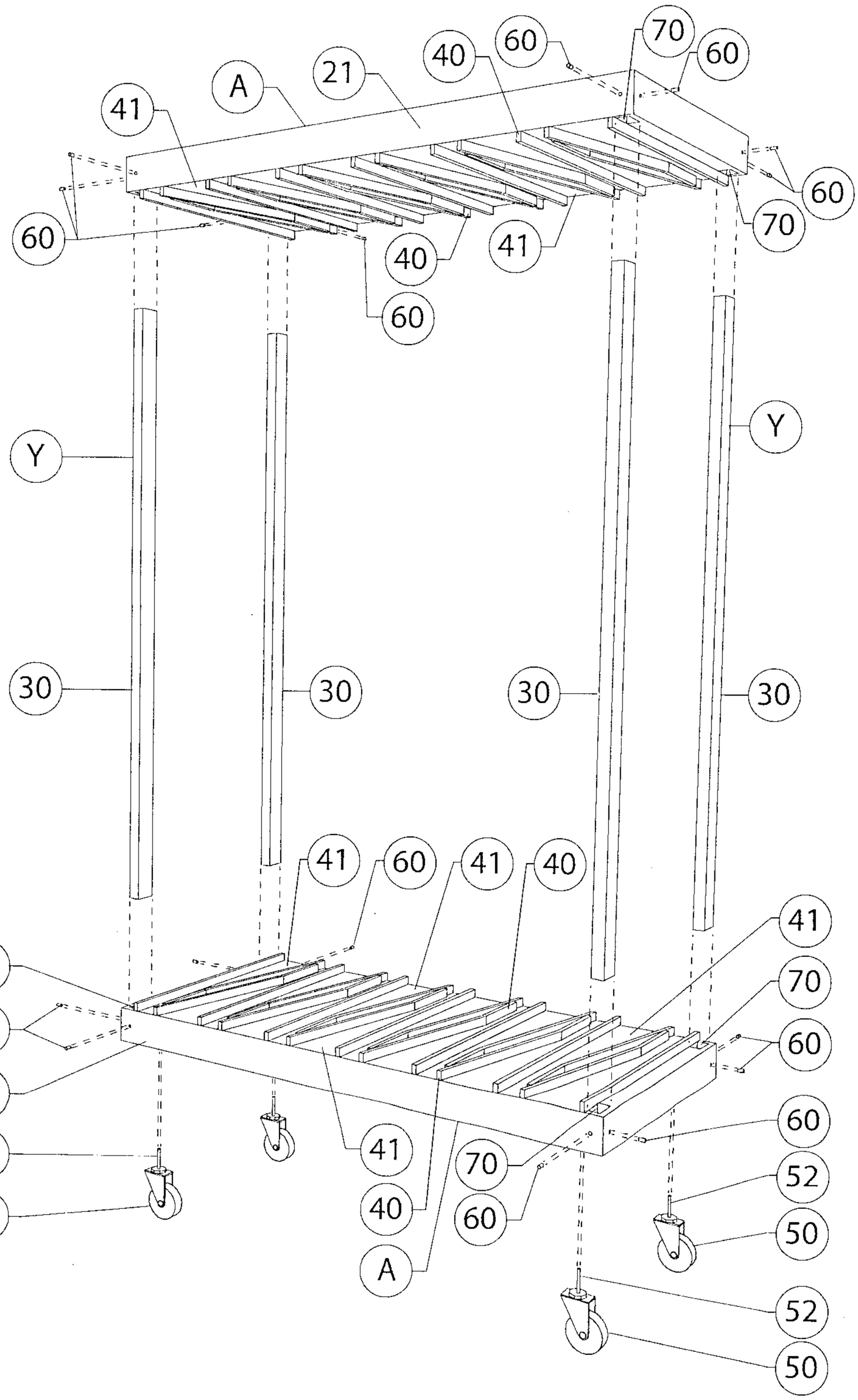
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FIG. 10

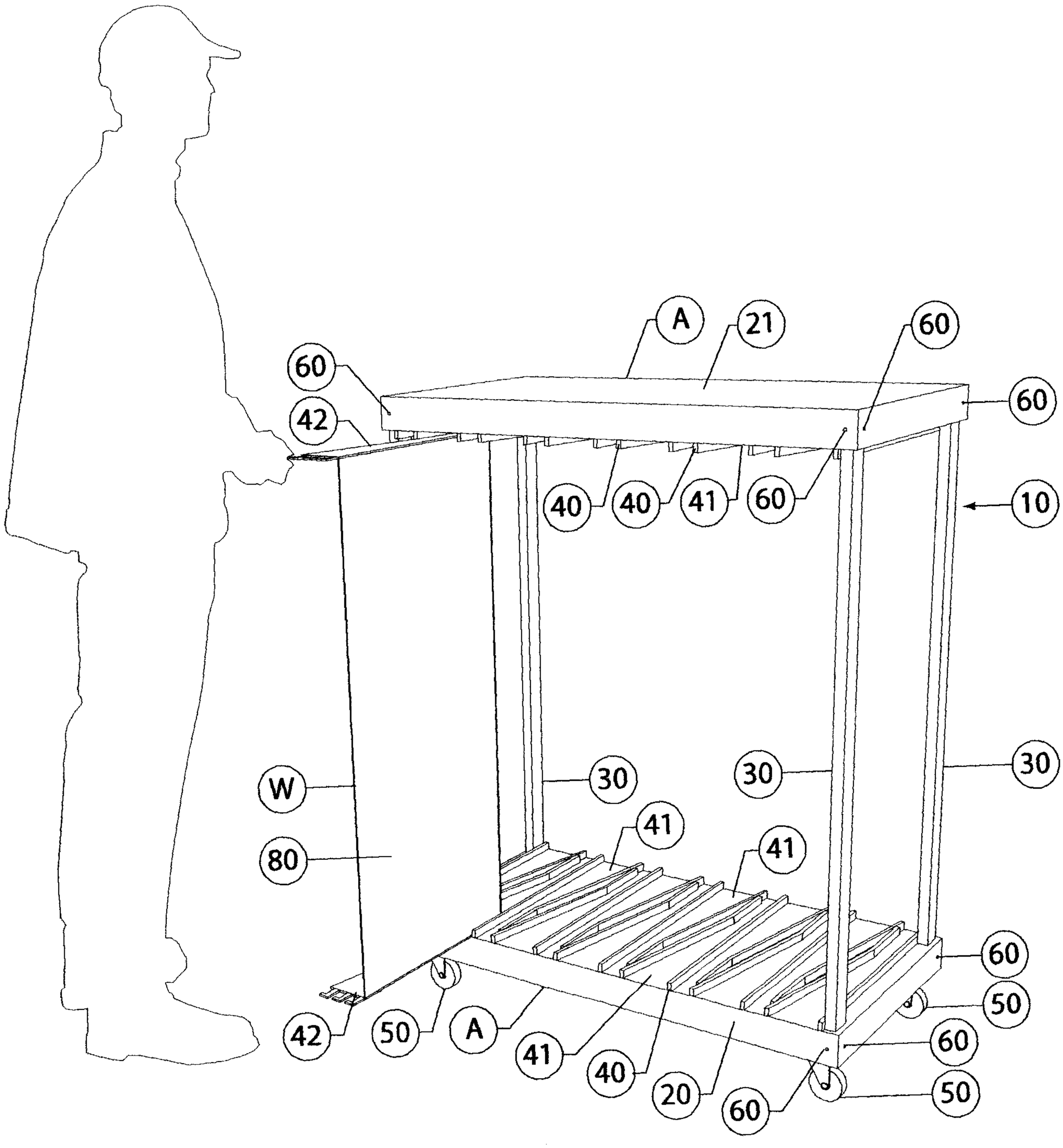
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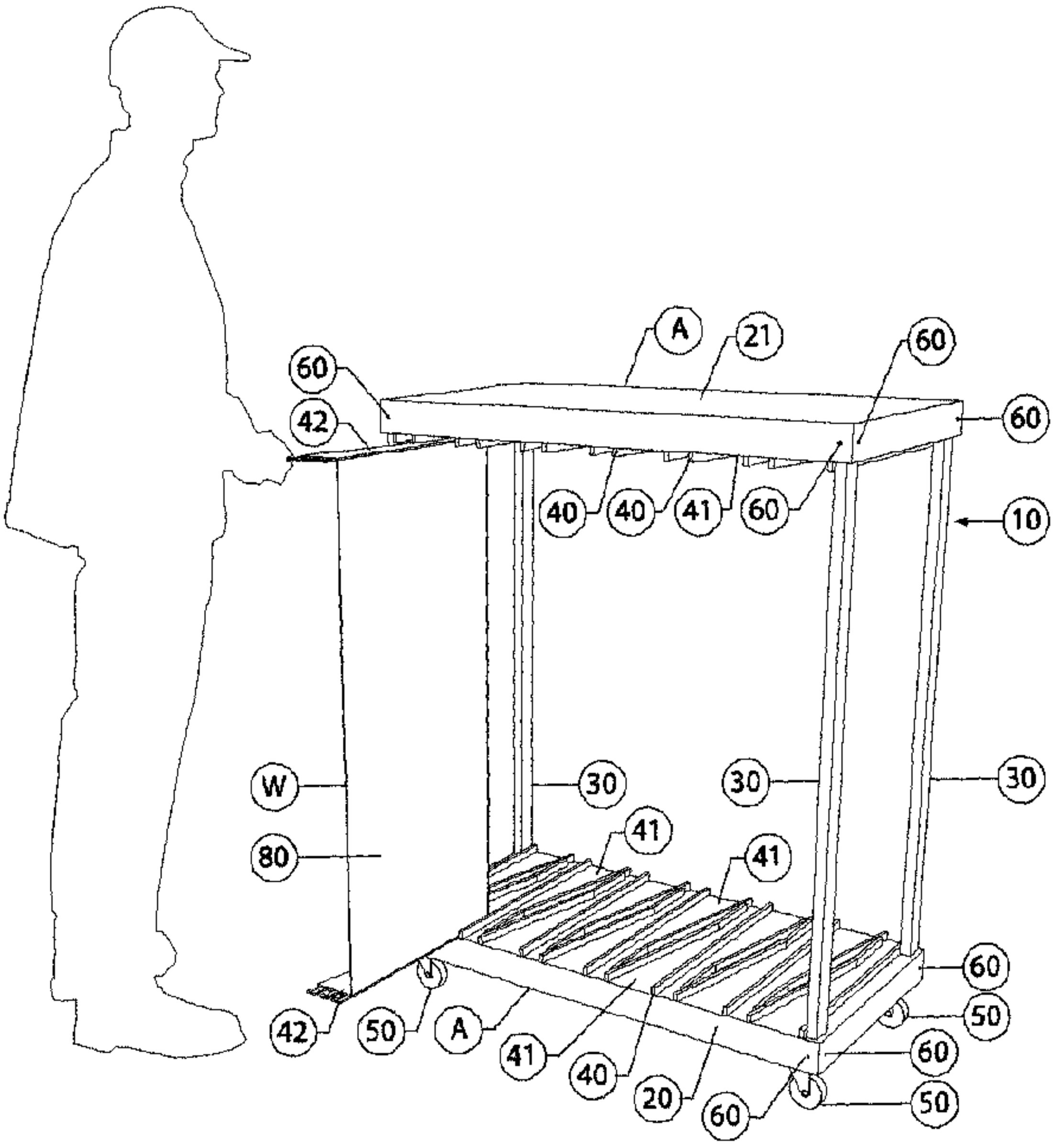
FIG. 11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