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A modular storage assembly for fluid couplings and adaptors

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ABSTRACT

A modular storage assembly for fluid couplings and adaptors such as those used for fire hose, the assembly having a frame member which has an elongate recess, and a plurality of plate members which are positionable in the recess in a side by side relationship and are held in the recess, at least some of the plate members having attachment means to allow a said fluid coupling or adaptor to be releasable attached to a said plate member.

THE CLAIMS DEFINING THE INVENTION ARE AS FOLLOWS:

1. A modular storage assembly for fluid couplings and adaptors such as those used for fire hose, the assembly having a frame member which has an elongate recess, and a plurality of plate members which are positionable in the recess in a side by side relationship and are held in the recess, at least some of the plate members having attachment means to allow a said fluid coupling or adaptor to be releasable attached to a said plate member.

2. The assembly of claim 1, wherein the recess has opposed side walls each side wall having guide means to hold the plate member in the recess and to allow the plate member to slide along the guide means.

3. The assembly of claim 1 or claim 2, substantially as hereinbefore described with reference to the drawings.

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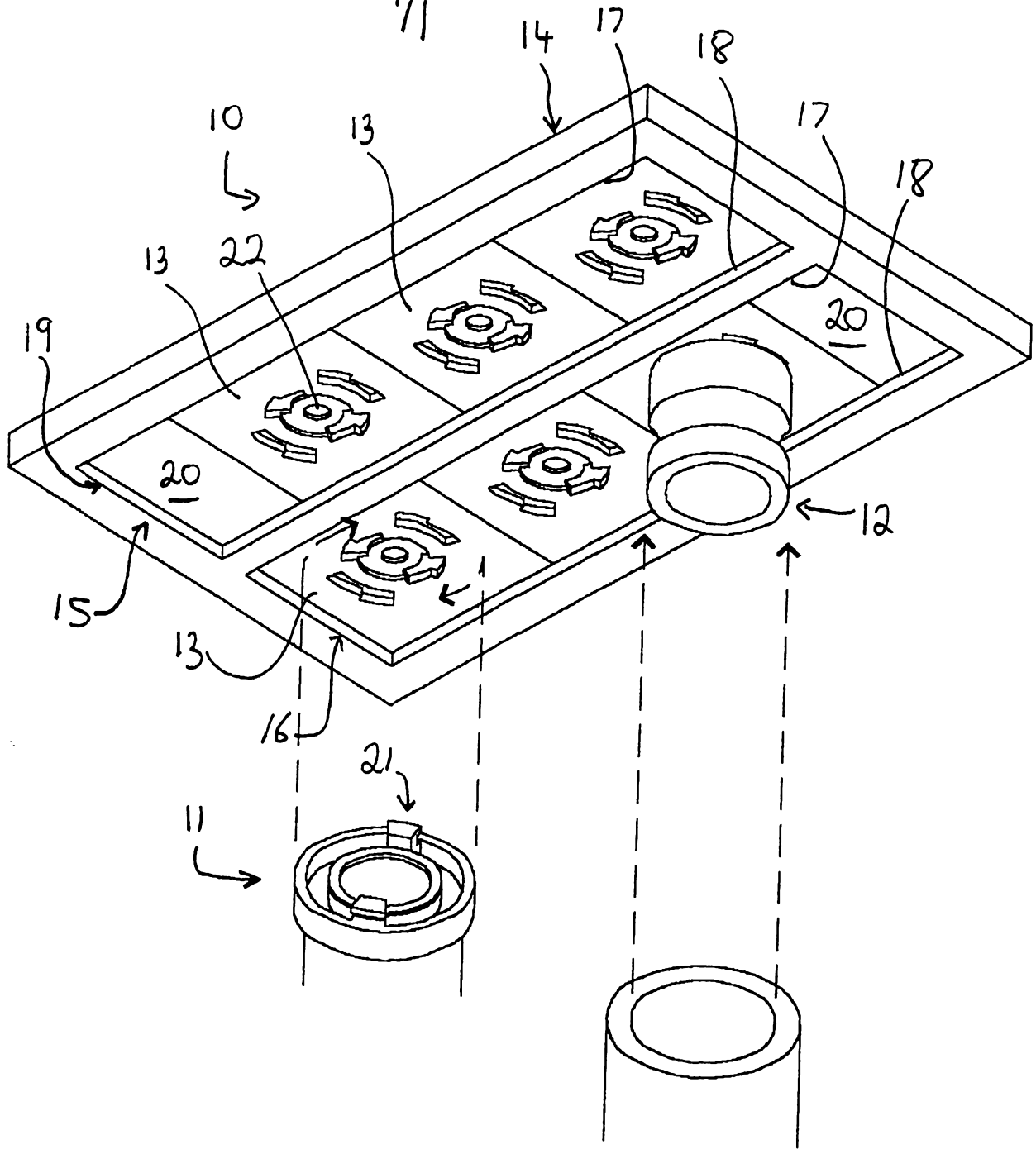

Fig1

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COMPLETE SPECIFICATION
FOR A PETTY PATENT

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Invention Title:	A MODULAR STORAGE ASSEMBLY FOR FLUID COUPLINGS AND ADAPTORS

The following statement is a full description of this invention including the best method of performing it known to us:

A MODULAR STORAGE ASSEMBLY FOR FLUID COUPLINGS AND ADAPTORS

This invention relates to a modular storage assembly for fluid couplings and adaptors such as those used for fire hose. The invention will be described with reference to fluid couplings and adaptors which are in use throughout fire brigades, rural fire brigades, forestry organisations, councils and other organisations that use such fluid couplings and adaptors and carry them in their vehicles. The invention is however not considered to be limiting to only this type of fluid coupling and adaptor.

Fire fighting or fire control vehicles are required to carry a fairly large range of adaptors and couplings which are used to couple fire hose together to form a longer hose, to couple different types of nozzles to the fire hose, and to attach the fire hose to a fire hydrant or other source of pressurised water. These fluid couplings and adaptors are well-known and common types include Storz and Camlock couplings.

To date, there has not been a readily acceptable way to store and quickly retrieve such couplings. Placing these couplings in a box or other type of container is not convenient as it is often difficult to quickly see and retrieve the desired type of coupling. Some couplings are formed with coupling flanges or fins which could be bent or otherwise damaged if jumbled together in a box. Movement of the vehicle can also cause the couplings to rattle and hit each other which may cause damage or undue wear and tear to the couplings and adaptors.

It is not entirely satisfactory to have the couplings and adaptors placed on pegs or hooks as this type of attachment is not very secure and the couplings can become dislodged during motion of the vehicle. As well, vehicles can carry different types and numbers of couplings and adaptors and it would not be convenient to have a large array of pegs placed somewhere on the vehicle and which can form snag points or injury points.

It is an object of the invention to provide a storage assembly which may at least partially overcome the abovementioned disadvantages or provide the consumer with a useful or commercial choice.

In one form, the invention resides in a modular storage assembly for fluid couplings and adaptors such as those used for fire hose, the assembly having a frame member which has an elongate recess, and a plurality of plate members which are positionable in the recess in a side by side relationship and are held in the recess, at least some of the plate members having attachment means to allow a said fluid coupling or adaptor to be releasable attached to a said plate member.

In another form, the invention resides in the storage assembly as described above wherein the recess has opposed side walls each side wall having guide means to hold the plate member in the recess and to allow the plate member to slide along the guide means.

The modular storage assembly uses a plurality of plate members which have an attachment means to allow a coupling or adaptor to be attached to the plate member. Thus, the storage assembly can provide a smooth relatively flush appearance and does not have projecting hooks or pegs which can be snagged or form injury points.

The frame member has an elongate recess, and can have a number of elongate recesses to allow an adequate number of plate members to be positioned in the recess. For instance, the frame assembly can be such to allow four, six, eight, ten or more or more plate members to be positioned in one or more elongate recess.

An advantage of the storage assembly, according to the invention, is that the plate members can be removed fairly easily from the frame member and different plates can be fitted to allow different types of couplings or adaptors to be attached to the assembly. Thus, if a vehicle has say six couplings of two different types, and two adaptors, a modular assembly, according to the invention, can easily be assembled with the required number of plate members each member being specific for one or more couplings.

If desired, the plate members can be clearly marked to identify the particular type of coupling which will attach to a plate.

In one form, the attachment means on the plate member is of

the type which is multi-purpose, meaning that different couplings and/or adaptors can be attached to the same plate member. This can reduce the number of separate plates required and increases the versatility of the storage assembly.

The attachment means on the plate member can be in the form of recesses, slots and/or projections which can mate with an end profile of a coupling or adaptor (it being appreciated that couplings and adaptors have some form of end profile which allows them to be quick coupled to a nozzle, fire hydrant and the like). It is preferred that the attachment is a twist lock attachment which allows the couplings and/or adaptors to be twist locked and twist unlocked to the respective plate member.

The storage assembly can be fitted to the wall/ceiling of a vehicle. For instance, most fire vehicles are provided with storage lockers and the modular storage assembly can be attached to the walls, ceiling or floor of the storage locker. This is an advantage over storage boxes which are not able to store the couplings and/or adaptors in an upside-down position.

The storage assembly is of course not limited to attachment to any particular type of vehicle and can be fitted to any convenient wall, ceiling or floor be it in a vehicle, a trailer, a building, or elsewhere.

The frame member which forms part of the assembly is suitably sufficiently strong to support the plate members and the couplings/adaptors. The frame member can be formed from suitable material such as metals, plastics, composites, and the like. In an embodiment, the frame member is formed from a plastics material such as an engineering nylon. The frame member in an embodiment is substantially rectangular when viewed in plan.

The frame member has an elongate recess in which the plate members are held. The recess may extend into one side face of the frame member but need not extend entirely through the frame member. The depth of the recess is typically approximately the same or slightly more than the thickness of a plate member which means that when the plate member is in the recess, the front face of the plate member can be flush with, spaced

inwardly or projecting from the recess. It is preferred that the recess is such that when the plate member is in the recess, the front face of the plate member is slightly recessed such that the opposed side walls of the recess provide a slight locating function to locate the coupling or adaptor against the attachment means on the plate member.

In one form of the invention, the plate members can slide along the recess and one end of the recess can be open or provided with a slot to allow the plate members to be inserted and slid along the recess. The recess is preferably long enough to hold three or more plates. In this form, the recess is provided with guide means which hold the plate members in the recess while still allowing the plate members to slide along the recess. In a simple form, the guide means can be in the form of a channel extending into each side wall and which can capture the opposed edges of the plate members.

Not all of the plate members need be provided with attachment means. Some of the plate members may be spacer plates or blank plates which can be cut to size if necessary to ensure that once the plate members are in the recess, they cannot slide around.

An embodiment of the invention will be described with reference to Figure 1 in the accompanying drawing.

Figure 1 illustrates a modular storage assembly 10 which allows a number of fluid couplings and adaptors 11, 12 to be attached to plate members 13.

More specifically, the modular storage assembly has a backing member or frame member 14 which is formed of engineering nylon material (this being preferred only) and is rectangular when viewed in plan. Frame member 14 has a substantially planar front and back wall which allows it to be easily attached (for instance by fasteners and the like) to the wall of ceiling of a storage locker (this being preferred only). The size of the storage assembly can vary depending inter alia on the number of couplings to be attached. In the embodiment, the frame member has a length of between 50 to 150cm and a width of between 20 to 60cm. The thickness of the frame member can

also vary but is typically between 10 to 30mm.

In Figure 1, the frame assembly is provided with two elongate recesses 15, 16, and in the embodiment each recess holds four plate members. The recesses are moulded into the frame member and do not extend entirely through the frame member. Each recess has opposed side walls 17, 18. The depth of the recess depends on the thickness of the plate member 13 but in the embodiment is between 5 to 10mm. Each recess is elongate and rectangular when viewed in plan.

Each recess can accommodate a plurality of plate members 13. In the embodiment, the plate members are formed of metal and are square when viewed in plan which allows the plate member to be inserted into the recess along any side. The plate members 13 can be between 5 to 10cm along each side and can have a thickness of between 3 to 8mm. This can of course vary to suit.

The plate members can be slid into a respective recess 15, 16 and in Figure 1, recesses 15, 16 can each accommodate three square plate members. The side walls 17, 18 of the recesses are formed with a longitudinal channel which captures the edges of each plate member which allows the plate members to slide along the recess but makes them unable to be removed from the recess except by sliding the plate members to an open end 19 of each recess. A spacer plate 20 is inserted into each recess to completely fill the recess thereby preventing plates 13 from inadvertently sliding along the recess. Plate 20 can be cut to size.

Plate members 13 are provided with an arrangement of holes, grooves, recesses, slots and projections which can twist lock into the end of the couplings 11 or adaptors 12. For instance, in Figure 1, coupling 11 has a pair of opposed locking flanges 21 which twist lock in a bayonet-type manner against corresponding flanges on plate members 13.

The attachment means on each plate member can attach 38mm and 25mm Storz fittings, and each plate member has a central hole of 12mm 22 which can be utilised for other fittings such as a Camlock, fire couplings/adaptors etc. In the embodiment, the attachment means of each

plate member is a multi-purpose attachment means which allows both a coupling or an adaptor to be attached to each plate member. This increases the versatility of the arrangement.

In use, a customer can specify a particular size and arrangement of modular storage assembly depending on the type and number of couplings/adaptors which are required to be held. The plate members can be simply slid into the recess and spacer plates can be fitted to keep the entire arrangement locked together. If desired, the opposed side walls can be profiled to allow the plates to slide along the recess but not freely. That is, the side walls may be profiled to lightly clamp against the plates to hold them in place but still allowing the plates to be slid out of the recess if enough force is applied.

The plates can be freely interchanged and rearranged to suit the customer's needs.

The couplings and adaptors are securely held onto a respective plate member and are clearly visible for easy identification. The couplings and adaptors are held apart which means that there is little likelihood of the couplings and adaptors becoming damaged. The storage assembly can be fitted to the roof of a storage locker which frees up other space in the storage locker. The couplings can be easily twist locked and twist unlocked.

It should be appreciated that various other changes and modifications may be made to the embodiment described without departing from the spirit and scope of the invention as claimed.

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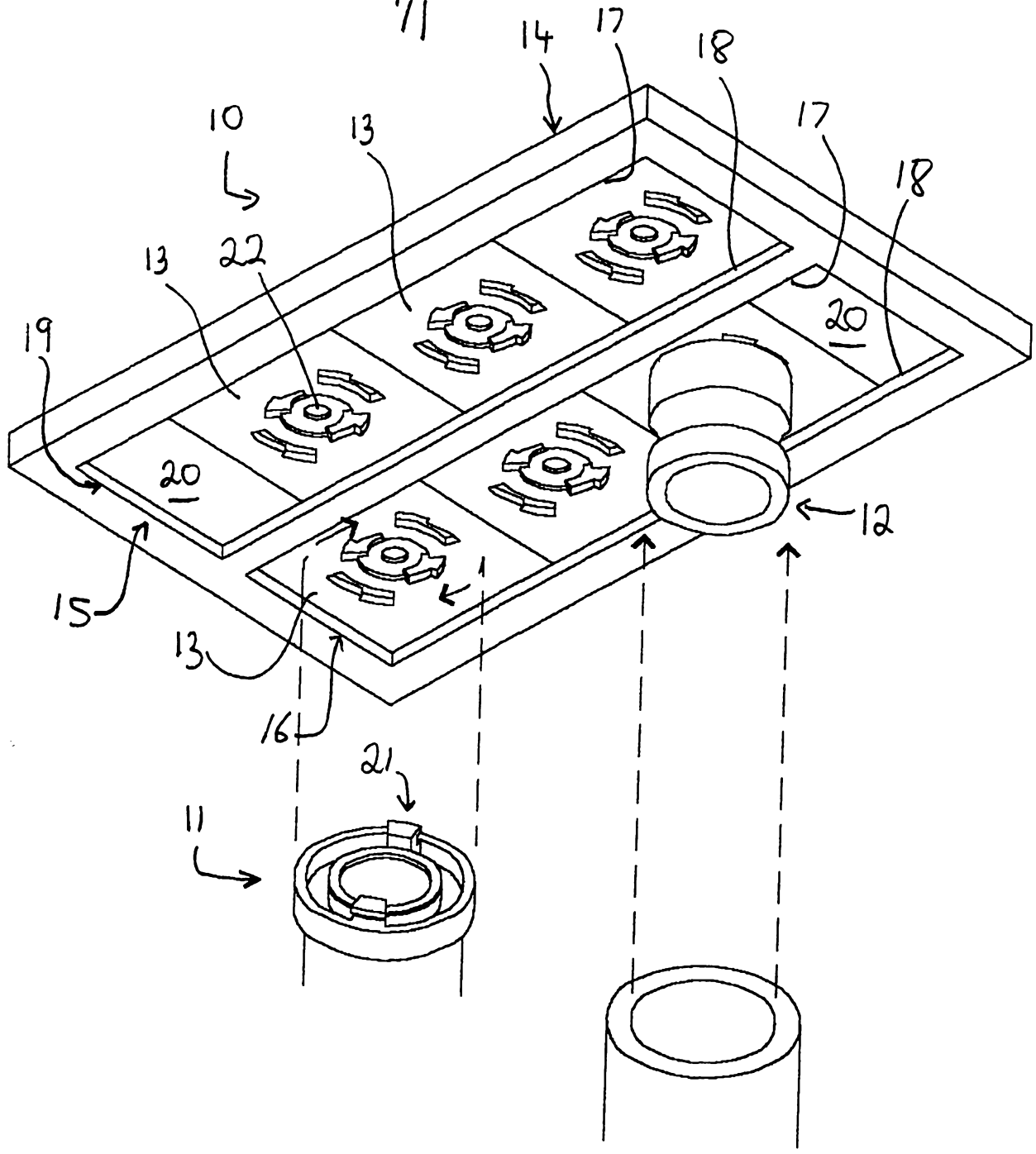

Fig1