

Obviousness:

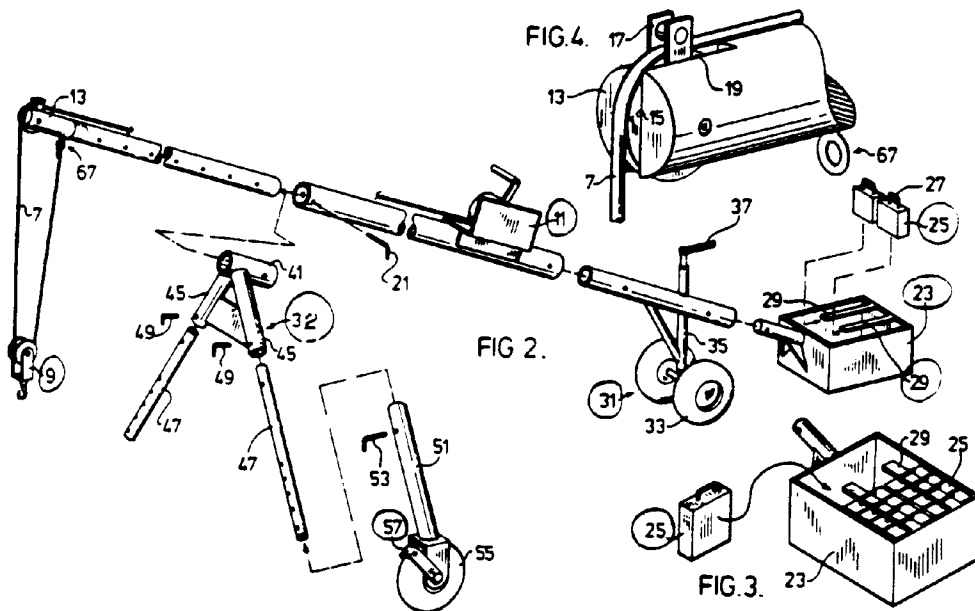
Amendments that presented the safety improvements by defining the braking, counterweight and mobility features of the roof top hoist overcame the citations. Rejection withdrawn.

This decision deals with the Applicant's request that the Commissioner of Patents review the Examiner's Final Action on application 452,580 (Class 254-68), filed April 24, 1984, entitled PORTABLE HOIST. The inventor is Frank Van Oirschot, Jr. The Examiner in charge issued a Final Action on February 8, 1989 refusing to allow the application to proceed to patent. In the response dated August 8, 1989, a set of ten amended claims was presented.

In reviewing the application, the Patent Appeal Board held a Hearing on March 14, 1990, at which the inventor attended and was represented by Mr. T.S. Johnson, the Patent Agent. Mr. Johnson opened the hearing by presenting an amended claim 1 to replace claim 1 of the set of ten amended claims, and at the conclusion he made an additional amendment to that claim. By letter dated March 19, 1990, claim 1 with the additional amendment, and other minor amendments to the application, were submitted.

The invention sets out a portable knock-down hoist provided with a counter-weight receiving means accommodating a predetermined number of counter-weight units to eliminate the need for an operator to act as the counterbalancing means when a load is

being raised. With reference to Figures 2 to 4 reproduced below, the boom is shown as including several interconnected parts, with a forward wheeled support 32 with brake means 57, and a rearward steerable wheeled support 31. The hoisting mechanism 9 is placed at one end of the boom and is operated by a winch 11. The counter-weight container 23 designed with supports 29 to take the counter-weight units 25, is mounted at the other end of the boom.



In the Final Action taken February 8, 1989 the examiner refused all of the claims in light of the following art, that includes three additional references as well as those applied in a previous Final Action:

United States Patents

2,388,692	Nov. 13, 1945	House
3,801,069	Apr. 02, 1974	McCarstle
4,004,778	Jan. 25, 1977	Steinhagen
4,042,115	Aug. 16, 1977	Beduhn et al
4,053,060	Oct. 11, 1977	Wilson

Additional References

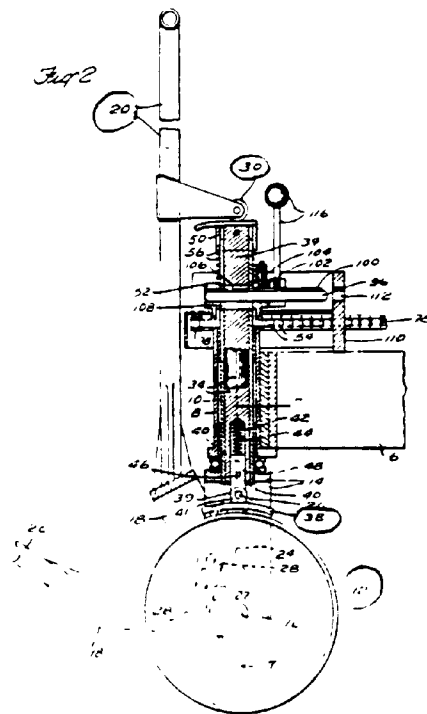
United States Patents

2,569,821	Oct. 02, 1951	Maxeiner
3,375,048	Mar. 26, 1968	Korensky et al

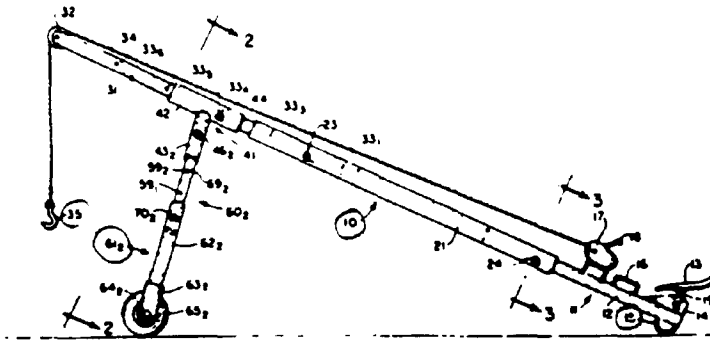
Book

Shapiro, H.I., "Cranes et Derricks", McGraw-Hill, 1980, 373-377, 383-384

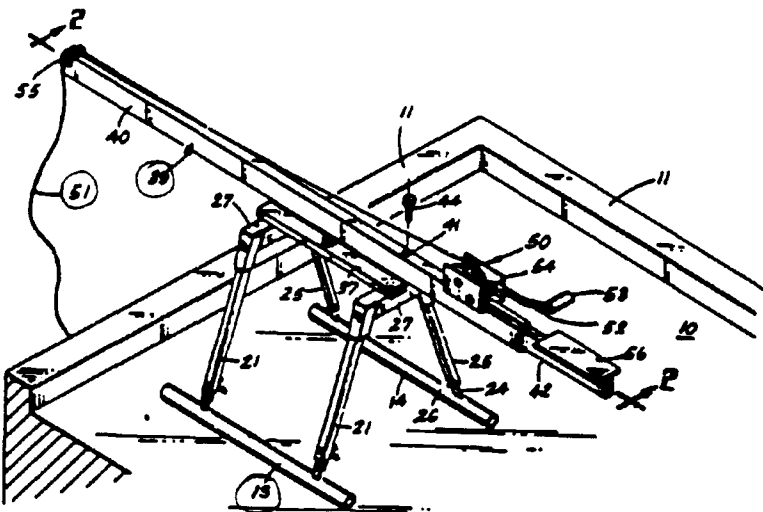
The House patent relates to a lifting truck having a pulling handle 20 attached to a steering wheel 12, the handle carrying a roller 30 that actuates a brake 38 when the handle is fully upright, as shown in Figure 2 below:



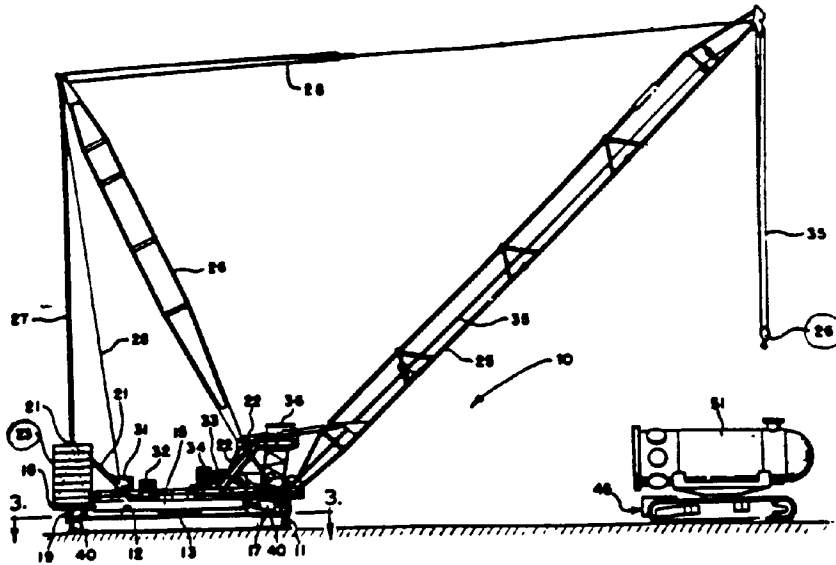
A portable knock down hoist is described in the McCarstle patent, shown in Figure 1 below, that provides a lift means 35 at one end of boom 10, a skid 15 at the other end and a seat 13 for an operator above the skid, and a wheeled support 61, attached near the front end:



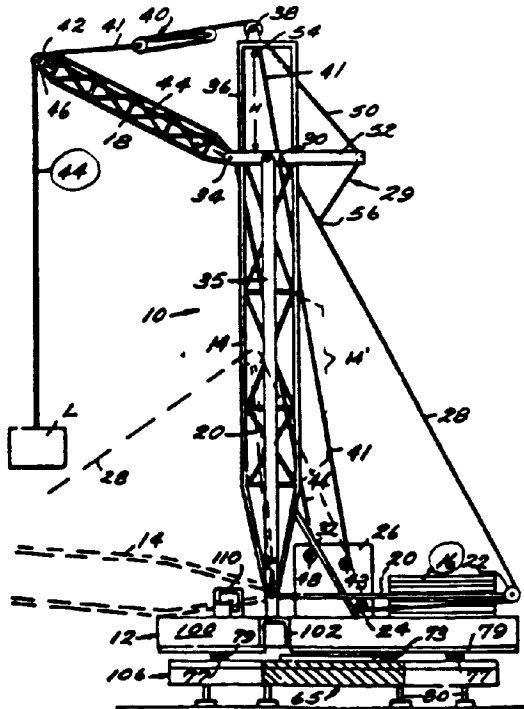
The Steinhagen patent presents a portable roof winch in its Figure 1 below, having at one end of boom 39 a lift means 51 and at the other end a seat 56, the boom being mounted on a skid support 13:



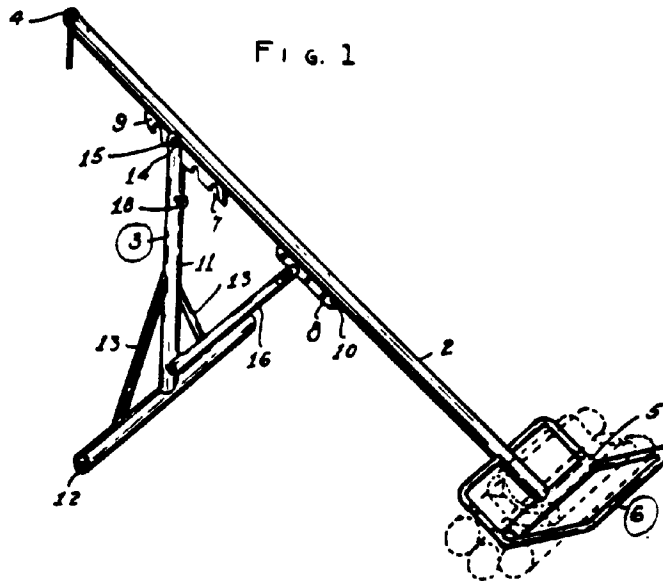
The Figure 1 depiction in the Beduhn et al patent is of a rotary crane having lift means 26 and counterbalancing weights 23, shown below:



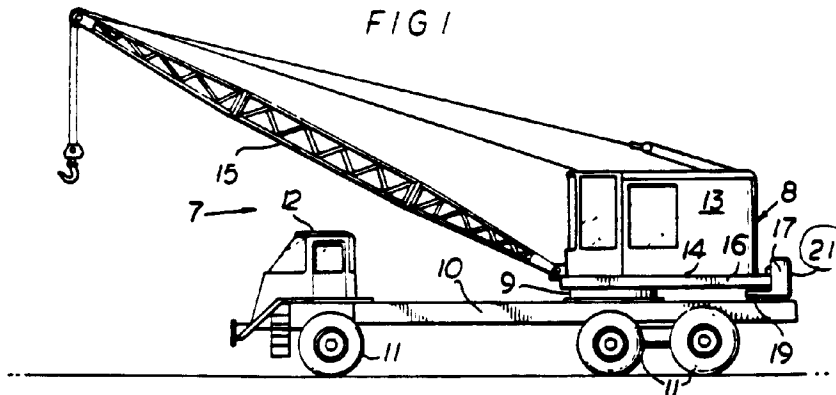
The Wilson patent describes a rotary crane with lift means 44 and counterweights 16 shown by Figure 1 below:



The Maxeiner patent illustrates a collapsible roof crane having a boom 2 with a lift means at one end and a counterweight support 6 at the other, and a stationary support 3, as in Figure 1 below:



A truck mounted rotary crane is shown in Figure 1 below of the Korensky et al patent, having a counterbalancing means 21.



The relevancy of the book Cranes and Derricks, and the above art, is discussed in the Examiner's Final Action, in which he said, in part, as follows:

Claim 1 is rejected because the subject matter thereof lacks inventive ingenuity in view of the above cited patents. The remaining claims defining minor variations of the hoist recited in claim 1 are also rejected. The McCarstle patent, for example, describes a hoist capable of being rapidly dis-assembled into components, each of which can be readily carried by a man. The hoist includes a boom section, a leg-socket device for supporting the boom section, a winch and an

operator's seat. When heavier loads are being carried, a two-man operation is used. As an alternative to a two-man operation, counterbalancing, in the form of any convenient dense objects, can be supplied. The Beduhn et al patent discloses items of counterweights which are stacked on a support, while the Wilson patent describes counterweights which may take the form of sections that may be stacked until the desired weight is reached. The use of bail brackets is shown in the House patent.

. . .

The Applicant's arguments advanced in his letter of April 28, 1987 are not convincing. Applicant's following statements are not well founded: "the only two references cited by the Examiner relating to portable hoists are United States Patents 4,004,778 and 3,801,069. Neither of the structures in these patents include mechanical counterweighting means. All of the other references cited by the examiner describe heavy duty motorized cranes and hoists. These structures clearly are not portable to the extent claimed by the applicant".

First, United States Patents 3,801,069 points out unequivocally the use of counterbalancing in the form of any convenient dense objects. Second, the same Patent states, quote "A light weight apparatus", "for lifting various loads of moderate to intermediate weight, typically from about 100 to 500 pounds".

In the "Detailed Description", of the same patent it is said, quote "[Reference is made to Fig. 1, showing a side or elevation of the apparatus assembled for providing a mechanical advantage of, roughly, four to one, and providing a moderate over-reach. By "mechanical advantage", as used herein to describe the function of the various configurations of which the apparatus is capable, is meant the approximate distance ratio of the horizontal distance from the operator to the line of contact of the wheels with the supporting surface, to the distance from said line to the load point. By "over-reach" as used herein, is meant the distance the load point is beyond the wheel contact line.]", and "the counterweight for the object being lifted is provided by the operator himself, if desired". The fact that in this patent the wording "if desired" is used, clearly shows the possibility of another option which is expressed by the wording "counterbalancing in the form of any convenient dense objects". Summarizing this patent, one can say that the use of the operator as counterweight "if desired", is an option in light weight devices, where the loads are from about 100 to 500 pounds and the mechanical advantage is of, approximately, four to one, the other option being always "any convenient dense objects".

In order to corroborate the fact that any material can be used as counterweight, use is made of United States Patent 2,569,821 which describes a collapsible or knock-down portable crane having a trough to receive heavy work materials. In this patent it is said, quote "any of the various materials used on the job, such as roofing paper, bags of cement, or any other relatively

heavy work materials may be deposited on the lower most end of the jib member to add sufficient weight to anchor the jib member to the supporting wall or roof". The use of counterbalancing the load by the weight of the operator is intended for "loads such as those ranging in the order of 100 to 300 pounds", as it is shown in the United States Patent 4,004,778.

The fact that the use of counterweights is common in hoisting machines is confirmed by United States Patent 3,375,048, as well, which says, quote

"This invention relates generally to new and useful improvements in cranes, shovels, trench hoes, and the like and more particularly to removable counterweights for such machines.

. . .

This is usually accomplished by supplying a counterweight which is attached to the machine at the end opposite that to which the load is to be applied so that the forces created by the load will be substantially counterbalanced by the additional weight of the counterweight".

Applicant's statement that "its mechanical counterweight is broken down into individual weight members, each of which is light enough to be carried up the side of the building with the rest of the hoist components. Clearly none of the mechanical counterweights used in the very substantial hoist assemblies, as for instance shown and described in United States Patent 4,053,060 for a crane, could be manually carried and therefore do not fall within the class of counterweights as claimed by the applicant", is not well founded.

United States Patent 4,053,060 was cited to show, irrespective of the size of the crane, the concept of counterweights which may take the form of flat sections that may be stacked atop one another until the desired weight is reached. United States Patent 2,569,821 uses several weights to achieve an appropriate counterbalancing in operation, as the applicant does.

For example Fig. 1 illustrates the use of several rolls of roofing felt or paper and upon which a bag of sand, gravel or cement may be superimposed, while Fig. 5 shows the use of fewer rolls of paper in addition to the bag of material in place. What counts for counterbalancing is the total weight, not the materials used to form it. In some hoists metal items are used for counterweight, in others-concrete items, etc.

Applicant's following remarks are equally unacceptable: "In applicant's earlier response it was clearly brought to the examiner's attention that the structure of United States Patent 3,801,069 (which is very similar to United States Patent 4,004,778) is no longer commercially available because of safety related problems with an actual operator death being caused using that operator as a counterbalance. However, even

in view of these problems, and the high demand for such portable hoists, there have been no steps other than those taken by applicant to rectify the problem". The Affidavit, signed by the inventor, wherein it is stated, quote "That I am aware that there have been operator accidents, including the death of an operator sitting in a counterbalancing position using the Portable Hoist, as described in United States Patent 3,801,069." and "That, I am further aware that because of the liability problems arising from operator accidents the Portable Hoist as described in United States Patent 3,801,069 is no longer in use or available for sale." and finally "That, I believe my concept of using mechanical counterweights is a substantial advance over all earlier structures in the portable hoist field", is intended to further support the previous allegations about safety related problems and an operator's death.

With respect to those allegations one could have serious reservations based on the following postulate: A patent for a device, which is almost always a description without dimensions, weights, materials etc., and a real embodiment, having specific characteristics, constitute two different things. This postulate is even more applicable in the case of United States Patent 3,801,069 wherein it is said, quote "various sized embodiments are readily provided for different classes of service", and "The variable lengths of the boom and legs, and the variable positions possible of the leg-locket device make it possible to assemble the apparatus in a large number of configurations providing lifting ability ranging from a low mechanical advantage up to ...". As can be seen, to point out that a specific hoisting device involved in a fatal accident corresponds to a patent appears unconvincing. Furthermore, in the book "Cranes and Derricks" it is stated, quote "Proper programs run by knowledgeable and alert people will reduce the incidence of accidents and near accidents", and "operator training in Ontario has led to a 60% reduction in injuries to hoisting engineers and crane operators, although fatalities do not seem to have been affected" (page 373); "reported data derived from investigation of 474 accidents ...", "In total number of incidents, injuries and fatalities, overturning accidents are by far the most serious" (page 374).

As shown in Table 8-1 for mobile-cranes, the overturnings (not including wind) represent 48.8%, while structural damage and human error-13.6%; boom over cab-13.6%; rope failure-12.5%; wind-6.3%; structure damage and machine defect-4.5% and miscellaneous-0.6%. In Table 8-2 it shows that among mobile-crane overturning accidents, overloading is the predominant cause. In the chapter "Preventing overloads" on page 383-384 it is stated, quote "A word of caution is needed here. A weight chalked or painted on a load or even entered on shipping documents cannot be trusted and in an alarming number of instances will be found to have grossly understated the actual weight. This practice is apparently an attempt to reduce shipping charges by fooling the transportation firm, but all too often jobsite personnel are the parties fooled, and many accidents have been traced to this

cause. As part of the preplanning process, the procedures to be used to control load weights should be established. If manufactured items are to be lifted, weights can be secured in advance from the producer and made available to the job site. One person in the crane-operation crew should be assigned the task of load determination. This person must be competent in arithmetic, be comfortable with weights and measures...Before each lift the load controller should determine load weight, including the weight of lifting accessories and the block; the operator can then be informed either verbally or by means placed on the load".

. . . .

The stability of a crane is obtained by an appropriate chosen weight. United States Patent 3,801,069/1974 provides the option between weight or the operator's weight, while United States Patent 2,569,821/1951 anticipates the use of weights alone. For this reason, applicant's concept of weights alone does not do anything patentable to the existing knowledge in the art.

In the most up-to-date cranes overturning accidents happen, even if the use of load indicators for overload prevention is mandatory. But, as it is said in the cited book, on page 383, "Most indicators are sensitive electronic or mechanical instruments; they suffer breakdowns and may loose calibration as well". For this reason checked loads and appropriate counterbalancing are important, not the type of used weights.

The use of wheels and brakes for a mobile hoisting device does not provide any inventive significance, since the use of braked wheels is well known in luggage, carriages, scaffold structures etc.

In response to the Final Action the Applicant submitted a set of amended claims, and argued for their allowability in the following terms, in part:

Rather than repeating earlier presented arguments, Applicant would draw upon the response of November 27, 1987 as continuing to distinguish over the prior art references and in particular United States Patent 3,801,069. In the Examiner's most recent final action, he stresses the weight capacities as handled by the portable hoist in this patent. However, Applicant never contested this feature and admits that to this extent, both structures are very similar. However, with respect to the use of mechanical counterweighting means, it is Applicant's submission that the prior art reference does not really appreciate how "any convenient dense objects" could be used as a counterbalancing means since these would be temporarily wired or lashed to the lower end of the boom assembly and therefore, would not allow the structure to be

moved from place to place. In contrast, Applicant has specifically claimed the fact that the counterweighting members are movable with Applicant's structure and further, that the rear set of wheels includes steering means for steering the hoist while moving it with the counterweighting members supported in position in the hoist.

As already brought to the Examiner's attention, Applicant is aware of and has actually seen the physical construction of the hoist described in United States Patent 3,801,069. This structure is clearly intended to use the operator as a mechanical counterweight. There is nothing on the structure which would accommodate the fitting of a mechanical counterweighting means and if one were to operate the structure using mechanical counterweighting means, one would have to find some type of lashing means and some type of counterweighting means that are not provided with the structure. Even if such lashing means and counterweighting means were available for use, they would be awkward to stabilize and further would make the structure difficult if not impossible to move from place to place. In Applicant's submission, it clearly is not the intent for this structure to be fitted with a mechanical counterweighting means to be dragged along the ground with movement of the structure. Furthermore, the operator's seat is always there and is particularly enticing for the much simpler operator counterbalancing to be used resulting in potentially dangerous situations to the operator.

United States Patent 2,569,821 describes a roof crane clearly not capable of any movement whatsoever, particularly when the counterbalancing means are fitted in position within the trough at the back of the crane. Furthermore, this patent once again relies upon the possibility of different types of objects being available on the job site and those objects having enough weight to provide a counterbalance.

Applicant does not feel United States Patent 3,375,048 is appropriate since it describes a heavy industrial crane with mechanical counterweighting means which would be much too heavy to be physically handled by the operator of the crane.

The Examiner refers to the "Cranes and Derricks" book as describing ways of reducing the risk of injury to crane operators. However, Applicant does not believe that this book is particularly pertinent to the type of portable crane as covered with the present invention, particularly when looking at the main prior art reference which, as noted above, describes a structure which actually promotes use of a portable crane which is dangerous to the operator. As sworn to in Applicant's Affidavit, the McCarstle structure has actually been banned from use because of the deaths associated with it regardless of what is taught in the Cranes and Derricks reference.

The issue before the Board is whether or not the amended claims define patentable subject matter in view of the cited art.

Claim 1 with the additional amendment made by Mr. Johnson at the conclusion of the Hearing, and submitted March 19, 1990, reads:

A portable knockdown, manually controlled hoist formed from a plurality of components which can be disassembled for physically carrying the components individually to the top of a structure such as a building and the like where said hoist is readily assembled for hoisting articles up the side of the structure, said hoist comprising a boom, support means for supporting said boom at an angle such that one end is elevated relative to the other end thereof, forward and rearward wheels on said support means for rolling said hoist when assembled to different locations, brake means movable between a brake and a release position and when in the brake position locking said hoist against forward movement while allowing rearward pulling of said hoist, lifting means at the one elevated end of said boom and counterweight receiving means for receiving mechanical counterweighting means in a secured position at the other end of the boom, said counterweighting means comprising a plurality of counterweighting members supported on and movable with said hoist and said counterweight receiving means independently of one another, each individual counterweighting member being manually carriable with the weight of said counterweighting means increasing according to the number of counterweighting means added to said counterweight receiving means, said hoist including a steering control at said rearward wheels for directing movement of said hoist with said counterweighting members fitted in said counterweighting receiving means.

The above final form of claim 1 was reached after discussion of the amended claim Mr. Johnson presented at the opening of the Hearing. In explaining the additional definition for the brake means, Mr. Johnson had referred to the description on page 8 of the application. It was pointed out by the examining staff however, that the movement of the brake means between a braking and a release position had not been clearly defined. Mr. Johnson consulted with Mr. Oirschot Jr., then agreed to insert further clarification to reflect this feature, as is found in the above final form.

Mr. Johnson discussed the various shortcomings of the cited art, noting the House patent disclosed an aircraft lifting device that had no counter weight features. He pointed out the patents to Beduhn et al, to Wilson, and to Korensky et al, were in the heavy

counterweighted crane art and were not of the knock down type for roof top service.

The McCarstle patent and the Steinhagen patent, Mr. Johnson contended, were not valid citations for they relied on the weight of an operator to counterbalance a load during lifting, a feature that had contributed to operator fatalities. Mr. Johnson drew attention to the affidavit setting out that an operator death had occurred as a result of the operator sitting in counterbalancing position while using the McCarstle device. It was pointed out that a load shift during operation caused the McCarstle device to act as a catapult, hurling the operator to death. The Oirschot invention of the application provides no seat, and therefore no enticement to an operator to sit on the device as a counterbalance, Mr. Johnson stressed. Further, he noted the McCarstle patent provided a means against forward motion only by removing the retaining pin in the leg and wheel unit and repositioning the unit by 90 degrees, whereas the Oirschot wheel could be braked against forward motion without reassembly, and moreover would permit the device to be drawn backward with the brake applied.

Mr. Johnson viewed the Maxeiner patent as no more relevant than the preceding two patents, in that it had no fore or aft wheeled features and lacked maneuverability. Mr. Oirschot Jr., explained that his wheeled device had been designed so that, in moving a fully lifted load from an overhang position onto the roof for unloading, the device could be pulled inwardly from the edge enabling persons to stand on the roof while unloading. Mr. Oirschot stressed this as yet another safety feature of his device.

The examiner explained the contentions he made in the Final Action, that counterweighted devices are well known as shown by the cited art, particularly the patents to McCarstle, Steinhagen, and Maxeiner which pointed to the use of any convenient weights. He referred to the information in the reference book dealing with proper marking of weights, and accidents caused by improper use of weights, as well as of the lifting devices.

Mr. Johnson drew attention to the brochure he submitted at the Hearing that explains the hoisting device, XTRAMAN HOIST, which Mr. Johnson noted bears the McCarstle U.S. Patent No. 3,801,069. He referred particularly to a page from the brochure headed "Assembles Quickly-No tools required!". On that page under "Instructions for Usage", item 3, he called attention to the capitalized instruction, "NEVER ADD ADDITIONAL COUNTERWEIGHT". In his view, this statement emphasizes the difference between the operation of the McCarstle patent that relies on the weight of the operator on the device, and that of the Oirschot device that does not require the operator to sit on it. Mr. Johnson says this difference clearly removes the patent as a proper citation, and establishes the patentable advance in the Applicant's device.

In looking at the photo in the brochure showing the operator engaged in lifting the load, the full realization of the vulnerability of the operator to unexpected shifting of the load, and the advantages provided by the features of the Applicant's device, are evident to the Board. It may or may not be, that the components of the inventor's lift are known separately, such as, individual weights, and bail brake means. In this regard, the Board notes that not all the components are evident in the references cited. The Board observes, however, more significantly, that none of the cited roof top lift devices identify an awareness of the problems that are overcome by the

inventor's combination. The passages from the reference book present safety information, but do not touch on the specific arrangement described in the application that achieves a safer structure. On this point, Mr. Oirschot indicated that sales of his device have been made to persons desirous of improving safety. It may be that a patented device will be shown in operation to suffer certain deficiencies, but that is not to say a patent should necessarily be denied where there is a demonstration of acceptance in the art by persons wishing to obtain safety benefits, such as shown by the device in the application before the Board.

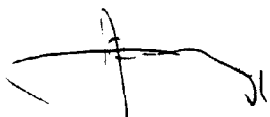
In summary, the Board is satisfied the inventor's device, as defined by the amended claim 1 submitted following the conclusion of the Hearing, presents a patentable advance in the art.

The Board recommends withdrawal of the refusal of the claims for failing to define inventive ingenuity in view of the cited art.



M. G. Brown
Acting Chairman
Patent Appeal Board

I concur with the findings and the recommendation of the Patent Appeal Board. Accordingly, I remand the application to the examiner for prosecution consistent with the recommendation.



J.H.A. Gariépy
Commissioner of Patents

dated at Hull, Quebec
this 14 day of May 1990