

IN THE CANADIAN PATENT OFFICE

DECISION OF THE COMMISSIONER OF PATENTS

Patent application 374,024 having been rejected under Rule 47(2) of the Patent Regulations, the Applicant asked that the Final Action of the Examiner be reviewed. The rejection has consequently been considered by the Patent Appeal Board and by the Commissioner of Patents. The findings of the Board and the ruling of the Commissioner are as follows:

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Applicant uses a mechanical connection of the brace arrangement to the legs of the shoring frame which allows for repairs to be made in the field and the use of different brace and leg materials. Rejection of some of the claims was made in view of six cited patents. Applicant submitted amended claims after the Hearing. Final Action: Modified

Patent application 374,024 was filed on March 27, 1981 for an invention entitled SHORING AND SCAFFOLDING FRAMES OF MECHANICALLY CONNECTED COMPONENTS. The inventor is Ronald J. Johnston, assignor to Aluma Systems Incorporated. The Examiner in charge of the application took a Final Action on August 3, 1984 refusing to allow it to proceed to patent. A Hearing was held on June 18, 1986 at which the applicant was represented by his patent agent Mr. W. Hall and the inventor Mr. Johnston.

The subject matter of the application relates to frames and legs which may be used in shoring frames. Figures 1, and 2 shown below are illustrative of the application.

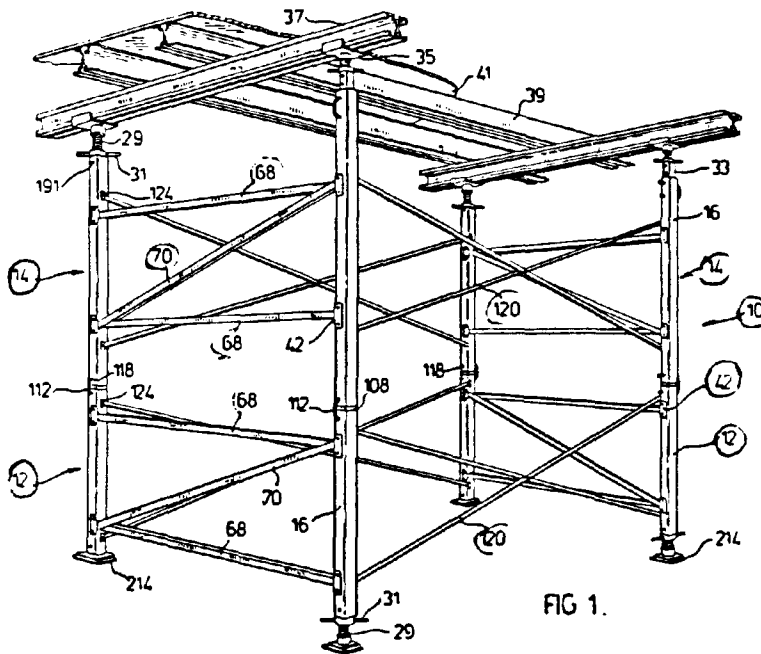


FIG 1.

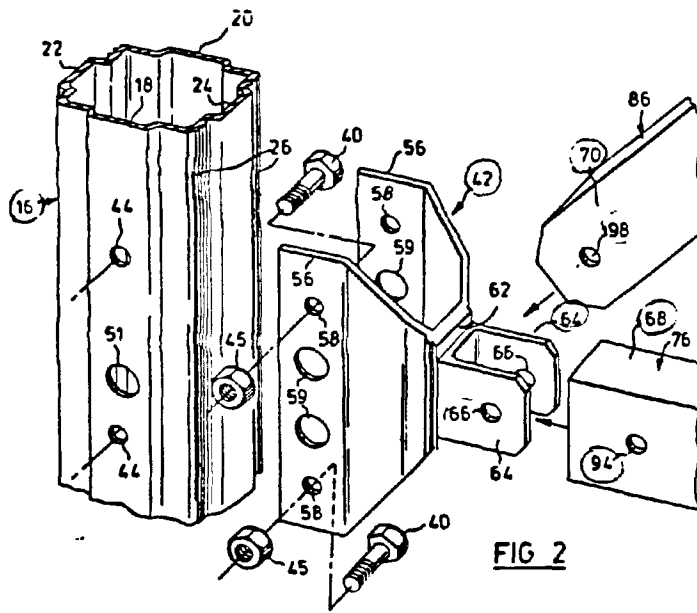


FIG 2

Assembly 10 consists of two sets of stacked frames 12 and 14. Frame legs 16 are connected to each other by diagonal braces 70, horizontal braces 68 and cross braces 120. Connecting bracket 42 is bolted to leg 16 with stubs 64 serving to retain diagonal brace 70 and horizontal brace 68 by means of a bolt passing through holes 66, 98 and 94.

In the Final Action the Examiner refused claims 1 to 39 and 50 to 54 in view of art and indicated that claims 40 to 49 were allowable. The art applied was the following:

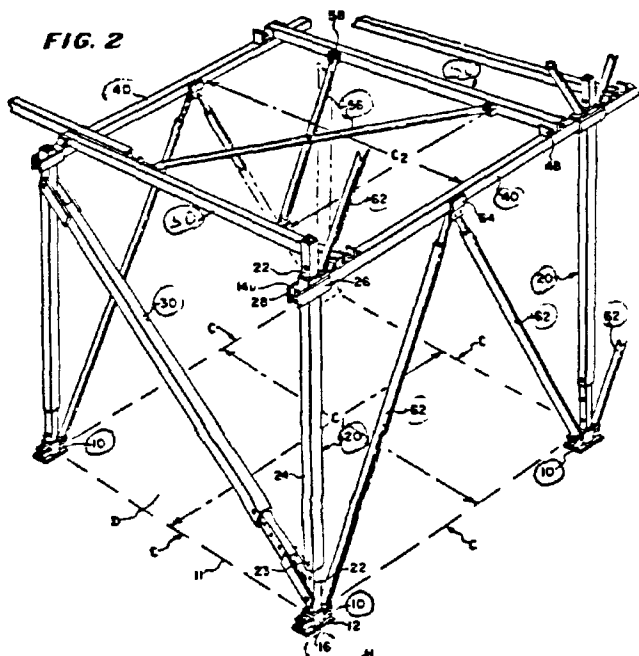
United States Patents

| | | |
|-----------|-------------------|----------|
| 4,136,785 | January 30, 1979 | McDevitt |
| 3,867,045 | February 18, 1975 | Beals |
| 3,684,058 | August 15, 1972 | Brown |
| 2,294,240 | August 25, 1942 | Pollman |
| 792,366 | June 13, 1905 | Taylor |

French Patent

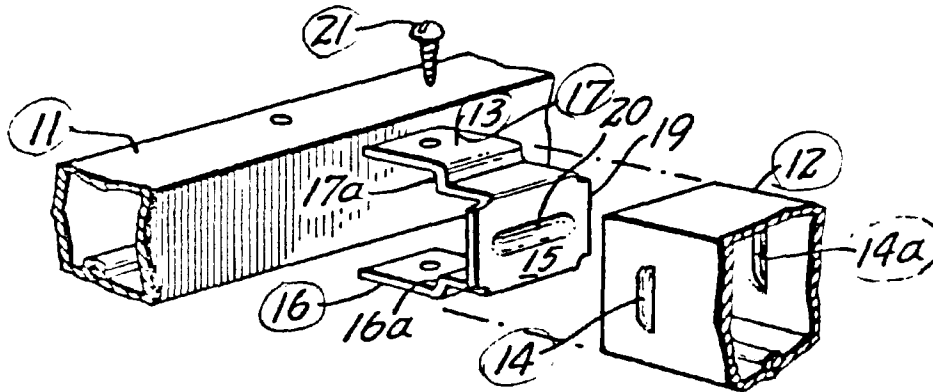
| | | |
|-----------|--------------------|------------|
| 1,123,790 | September 27, 1956 | Taillefer. |
|-----------|--------------------|------------|

McDevitt's patent is for a portable rack construction for holds of cargo ships. Figure 2 shown here is representative of the arrangement.



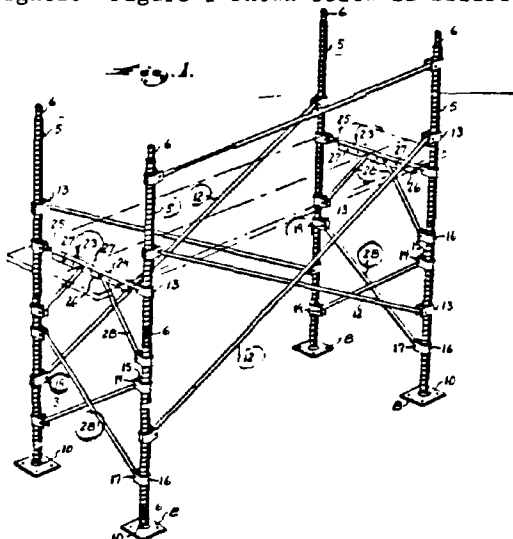
Horizontally spaced base units 10 each contain a square upstanding ferrule 16 to receive and support legs 20. Braces 30, and 62 support beam members 40 while "X" spreaders 56 hold beams 50 to form the cargo rack.

Beals shows a U-shaped tube-connecting clip for assembly of square metal tubing into framework. Figure 2 of the patent is shown here.



U-shaped clip 13 has a pair of legs 16, 17 to fit over rectangular tube 11 and are retained by sheet metal screw 21. Rectangular tube 12 is locked to clip 13 by detents 14 and 14a.

Pollman relates to scaffolding which has clamps to secure the braces between the uprights. Figure 1 shown below is illustrative of this patent.



Brace members 12, 28 and cross members 23 are attached to the uprights 5 by bolts 19 through clamp member 16.

Brown describes a scaffold arrangement having a U-shaped bracket arrangement to attach the cross braces to the uprights. Taillefer uses extendable braces for his scaffold and has provision for attachment to the wall.

Taylor shows a bedstead construction in which the frame hooks on the upright corner by engaging a pin.

In the Final Action the Examiner stated (in part):

The rejected claims are directed to a frame for supporting vertical loads. The frame consists of a pair of spaced aluminum tubular legs joined by a brace and means for mechanically connecting the brace to the legs. The connector means straddles the legs and is connected to the walls of the legs. Figures 2 and 3 provide an excellent view of the device claimed.

The examiner has rejected certain claims in view of the prior art. It is conceded that these prior art patents are concerned with scaffolding as applicant argues. However, it is not seen that "a shoring frame" that has the same structure is patentable over that art. The only thing that can be used to distinguish a shoring frame over a scaffold is its greater strength and size of elements. It is totally within the skill of a tradesmen to increase the strength of a structural member to enable it to be used to support higher loads. No inventive ingenuity is required to do the strengthening and no new and unexpected result was produced.

The particular joint in question is time honored. One of the cited patents is dated in 1905. Granted applicant has a slightly different cross-section for his leg supports, but this cannot be used to add patentability to the connection.

It is noted that claim 30, the broadest claim, does not even include as much detail of the connection as claim 1 and thus is clearly met by the art. This claim merely sets forth a mechanical fastening that connects the brace to the legs.

Applicant's arguments in his letter of May 18, 1984 are not at all persuasive. The primary argument regarding "Shoring" versus "Scaffolding" has already been dealt with. The other arguments regarding choice of material, aluminum as opposed to steel and rigidity are moot ones. The substitution of aluminum for steel, is not patentable and rigidity is simply a matter of degree and is related to strength and size of the elements. This argument has already been refuted above.

In response to the Final Action the applicant stated (in part):

The Examiner is of the opinion that the only features or elements that distinguish a Shoring Frame from a Scaffolding Frame is its greater strength and size of elements, however,

the applicant submits that this position is without support. Scaffolding is primarily used to provide access for workmen within or to the exterior of an existing structure, whereas shoring is designed to provide a support surface for forming of a structure. Shoring is subject to different design requirements and individual shoring frames are paired and interconnected with a further frame to form a separate and distinct tower-like structure to which additional frames are stacked as shown in Figure 1. The hypothetical tradesman that the Examiner refers to would be knowledgeable in the Shoring Frame art and would follow the accepted practice that Scaffolding Systems are not acceptable for Shoring Frame applications. There is not even a suggestion, let alone a teaching in any of the Patents relied on by the Examiner that the scaffolding system taught therein could be used for any other application other than scaffolding and there is certainly no teaching that they could be used for the much more demanding requirements of a shoring system.

Therefore, the references relied on by the Examiner do not even "point to the claimed structure" which test the Supreme Court of Canada in Farbwerke Hoechst AG v. Halocarbon (Ontario) Ltd. stated put the requirement for inventive ingenuity much too high.

The only teaching of a mechanically secured shoring frame, is found in the present application and it is only with hindsight and the benefit of the present disclosure that one would even consider the possibility of mechanically securing a Shoring Frame.

The Examiner has acknowledged that the claimed structure is useful and novel and, therefore, the only requirement that remains is whether the claimed structure required inventive ingenuity.

The Official Action states that "no inventive ingenuity is required to do the strengthening and no new and unexpected result was produced". The required "inventive ingenuity" in the present structure is not restricted to the particular combination of components found to be satisfactory for this particular application which alone could satisfy the requirement of inventive ingenuity but the recognition that a mechanically secured Shoring Frame will meet the requirements of a Shoring System.

The Examiner states that the particular joint in question is "time honoured", however, the joint is question is not time honoured for this application and departs dramatically from the conventional connection used in shoring frames. This joint when used in Shoring Systems results in a number of advantages with respect to repair in the field and the structural integrity of the repaired frame, assembly in the field, dismantling for shipping etc. described in the application which were not possible with existing Shoring frames. The joint may be old for other applications, but this is not the proper test to determine whether the claimed combination having a restricted application is obvious.

Mr. Hall submitted an amended set of claims replacing the rejected claims at the Hearing. This was followed by another amended set of claims received on June 26, 1986.

The consideration before the Board is whether or not the latest amended set of claims are allowable over the art of record. Claim 1 now reads.

A man handable shoring frame for supporting vertical loads experienced in supporting poured in place concrete structures comprising a pair of spaced aluminium tubular legs each having a hollow core, said legs being vertically orientated and joined by a brace arrangement and a plurality of connector means for mechanically connecting said brace arrangement to said legs at connection locations, said brace arrangement being adapted to stabilize said legs when under load, each of said legs having spaced wall portions which are substantially symmetrical about a plane containing the longitudinal axes of said frame legs and which provide areas for mechanical connection of said connector means, as secured to portions of said brace arrangement, to said legs;

each said connector means being mechanically secured to said spaced wall portions at points spaced in said connector means and spaced in the length of the leg to oppose pivotal movement of said connector means in the plane and including at least portions of the connector means interior surface being adjacent at least corresponding portions of leg exterior surface between said spaced wall portions such that said brace arrangement and said connector means cooperate to maintain the spacing and vertical orientation of said legs when said shoring frame is under load, each connector means being mechanically secured to said leg by clamp type fasteners which engage the interior surface of said leg and the exterior surface of said respective connector, said clamp type fasteners being adapted to maintain the hollow core adjacent said connector means substantially unobstructed.

Six references were cited in the Final Action. The applicant argues that all of these citations relate to scaffolding which is primarily used to provide access for workmen within or to the exterior of an existing structure. He emphasizes that his application is concerned with shoring which provides a support surface for forming a structure. It is the Examiner's position that the only distinguishing characteristics of shoring frames over scaffolds is its greater strength and size of elements and that it is totally within the "skill of a tradesman to increase the strength of a structural member to enable it to be used to support higher loads". He maintains that the particular joint in question is time honoured as one of the references is a 1905 patent.

We note that the applicant's frame leg is adapted to retain a connecting bracket by bolt means. The U-shaped connecting bracket has a pair of legs with each leg having a pair of holes to allow bolt means to attach it to the frame leg. It also has a U-shaped connector stub with an aperture for retaining the diagonal and horizontal braces between frame legs.

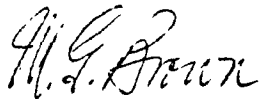
An advantage emphasized by the applicant is that his mechanical connection of the brace arrangement to the legs of the frame permits use of brace material different from the leg material. Also the mechanical connection means allows for repairs to be made in the field where damage to components may occur.

From the cited art we note that Pollman has a clamp for attaching the braces to the legs in his scaffold. McDevitt uses pins in the construction of his cargo storage rack. Brown shows a scaffold that has removable diagonal braces bolted to the frame leg by means of a U-shaped bracket. Bolt attachment means is shown in the cited art. In the application before us the connector is secured at points vertically spaced in the connector to oppose pivotal movement of the connector about a plane containing the longitudinal axis of the frame legs.

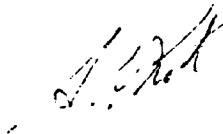
It is stated in the Final Action that the joint in question is "time honoured" and the slightly different cross-section for the applicant's leg supports does not add patentability to the connection. Looking at the Taylor citation we find a hook and pin arrangement to attach a bed frame to a head frame. Beals shows the use of a U-shaped clip to assemble square metal tubing into a framework and Taillefer has adjustable cross bracing having U-shaped ends for attaching to welded frames by pin means. Applicant's frame comprises a pair of legs having horizontal and diagonal brace members bolted by connecting brackets wherein each bracket has holes near the top and bottom thereby providing spaced connection points to oppose pivotal movement of the structure in the plane containing the longitudinal axes of the frame legs. There is no teaching of a frame and cross bracing connected together in that manner in the cited art.

We agree with the conclusion in the Final Action that it is totally within the skill of a tradesman to increase the strength of a structural member and that inventive ingenuity is not required for increasing strength of a member. However, the application before us does not only deal with increasing the strength of a member but also describes a manner of assembling the frame components which is not shown in the cited art. More particularly the amended claims detail structural cooperation between leg and connector components to obtain a shoring frame for supporting heavy vertical loads.

Amended claims have been submitted by the applicant to replace the rejected claims. In our view the amended claims received on June 26, 1986 are acceptable over the art of record before us and we recommend that permission to enter these claims be granted to the applicant.



M.G. Brown
Acting Chairman
Patent Appeal Board



S.D. Kot
Member

I have carefully considered the findings and recommendation of the Patent Appeal Board. Accordingly, I withdraw the Final Action and grant permission to enter claims 1 to 48 received on June 26, 1986 for consideration by the Examiner. I remand the application for prosecution consistent with the findings.



J.H.A. Gariépy
Commissioner of Patents

Dated at Hull, Québec
this 18th day of August 1986