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International application number:		**PCT/CN2020/083434**
International filing date:		**07 April 2020 (07.04.2020)**
Document type:		**Certified copy of priority document**
Document details:	Country/Office:	**CA**
	Number:	**3,039,447**
	Filing date:	**05 April 2019 (05.04.2019)**
Date of receipt at the International Bureau:		**08 July 2020 (08.07.2020)**

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a),(b) or (b-*bis*)

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Specifications and Drawings, as originally filed, with Application for Patent Serial No: **CA 3039447**, on April 5, 2019, by **PETER ROGERS**, for "Scaffold Rosette".

Agent certificateur / Certifying Officer

June 29, 2020

Date

Canada

ABSTRACT

An improved scaffold rosette has 4 elongate ledger securing slots with each slot being connectible to a ledger head through a 45 degree range. When the rosette is secured to a scaffold standard, the rosette can be rotated from an initial position to a new position rotated 45 degrees. The standard with the rosette can thereby be positioned from receiving a ledger at a host of positions allowing approximate 360 degree position securement.

SCAFFOLD ROSETTE

FIELD OF THE INVENTION

The present application is directed to scaffolding systems and, in particular, to the use of scaffold posts that include ring lock style connections.

BACKGROUND OF THE INVENTION

Layher GmbH launched the world's first ring lock style system in the mid-1970s. Since then, it has remained largely unchanged. Figure 1 (prior art) shows the layout of the Layher ring lock used today.

Erectors like the hole layout in the ring. The small holes allow up to 4 ledgers to be connected to the rosette at automatically orientated at 90 degrees from each other. This is achieved by the shape of the small holes which guide the wedge in the correct orientation. The large holes in the rosettes allow up to four braces or additional ledgers to be added at angles of 45 degrees from the adjacent ledgers. These larger holes also allow ledgers to the attached at angles other than 90 or 45 degrees. This can be handy when building a scaffold against the sidewalls of a round tank.

The rosette 10 of Figure 1 is based upon the concept of the original Layher-designed rosette. It has the characteristic 4 small holes with larger holes 22 between them.

The proliferation of the above rosette design has placed certain limits on the adaptability of all the products that use the same rosette hole layout. Figure 2 (prior art), shows the rosette used in the newly launched Monzon NO-LIMIT® scaffold system. It can be seen that the ledgers 30 connected to the large holes have a range or +/- 15 degrees from the 45 degree orientation. This limitation in adaptability causes erectors to have to use tube and fittings or try some other way to get the scaffold system to fit the application.

Other ring formats have also been used, though these are rare. One such system is the ALUMA SURE-LOCK® product. The rosette 40 is shown in Figure 3. The 8 large holes allow ledgers to be fitted at angles other than 90 and 45 degrees but the spoke provide an annoying obstruction.

There remains a need to provide a system with increased flexibility in set up to respond to different non-linear application (for example, curved applications).

SUMMARY OF THE INVENTION

A scaffolding system of the present invention has upright members connected to adjacent upright members by releasable ledgers that engage rosettes at spaced intervals on the upright member. The rosettes, on at least some of the upright members, each have 4 securement ports through the rosette. Each securement port of the rosette is elongate having opposed end positions orientated to locate a ledger head with these end positions being 45 degrees apart. Each securement port allows for ledger locating at a host of positions between the end positions. The securement ports are of similar size and adjacent ports are separated by one of 4 support spokes located between said ports.

A scaffolding rosette, according to the present invention, is of a general circular configuration with 4 elongate ledger connection ports of equal size distributed about the rosette and separated from adjacent ledger ports by support spokes. Preferably, the ports occupy in excess of 70% of a circular part of the rosette. In this way, the spokes are less than 30%.

BRIEF DESCRIPTION OF THE DRAWINGS

Preferred embodiments of the invention are shown in the drawings, wherein:

Figure 1 shows a prior art rosette;

Figure 2 shows a prior art rosette recently introduced to the market;

Figure 3 shows a prior art rosette;

Figure 4 is a top view of the rosette of the present invention;

Figure 5, 6 and 7 are top views of the new rosette and connection to ledgers;

Figures 8 and 9 are top views showing prior art scaffolding used around circular or curved structures;

Figure 10 is a top view of a prior art rosette; and

Figure 11 is a top view of the inventive new rosette used to receive 4 ledgers in a perpendicular configuration and 4 associated brace members.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

It can be seen in Figure 4 below that the proposed rosette 60 is obviously different from the majority of other ring lock style systems. The most obvious difference is that there are only 4 holes 65. The less apparent attributes of this new rosette design bring the major advantages of this improved ring lock. The rosette 60 is used on scaffold posts commonly referred to as scaffold standards.

At the ends of each of the 4 holes are wedge alignment notches 70. This allows ledgers or braces to be easily connected to the rosette at 90 degree or 45 degree orientation relative to each other.

The larger holes 65 allow for variable intermediate ledger angles to be achieved much more easily than the holes of the prior art style rosettes.

In order for infinite orientation angles of the ledgers to be achieved, the standards can be rotated (about the longitudinal axis of the post) in increments of 45 degrees, while maintaining the alignment notches at the required 90 degree positions. The 45 degree rotation changes to position of the spokes while maintaining 90 degree connection. This type of rotation is not possible with the prior art style rosette or does not provide the same advantages. Figures 5 and 6 show the difference between the two orientations of the new rosettes.

With the rosette orientation marks 100 and 102 sitting at the 12 and 2 o'clock positions, as shown in Figure 5, ledger C can be located at angles ranging from 45 degrees to 90 degrees relative to Ledger B. Note that ledgers A and B are both located in alignment notches and are therefore at 90 degrees relative to each other.

When the standard is rotated so that the rosette orientation marks 100 and 102 are sitting at the 2 and 3 o'clock positions, as shown in Figure 6, ledger C can be located at angles ranging from 90 degrees to 135 degrees relative to Ledger B. Note that ledgers A and B are still both

located in alignment notches 70 and are therefore at 90 degrees relative to each other.

With the rosette orientation marks sitting once again at the 12 and 2 o'clock positions, as shown in Figure 7, ledger C can be located at angles ranging from 135 degrees to 180 degrees relative to Ledger B. Note that ledgers A and B are both located in alignment notches 70 and are therefore at 90 degrees relative to each other.

In the industrial construction and maintenance markets, there are refineries that have a large number of circular structures such as tanks, cat-crackers etc. The standard ways of building scaffolds is to use a combination of rectangular and trapezoidal bays (Type A Scaffolds is shown in Figure 8), or all trapezoidal bays (Type B scaffolds shown in Figure 9).

Building circular scaffolds using these two scaffold configurations is made much simpler if using the system having the new rosette 65. Any combination of angles and ledger lengths can be used to achieve the correct radius of the scaffold.

If the standards of the prior art systems (see Figure 10) are rotated by 45 degrees in a similar way to the new rosette 65 described previously, the erectors can no longer easily achieve 90 connections.

In addition, the other ledgers or braces can only be fitted at 45 degrees or 90 degrees +/- 15 degrees. This is severely restricted compared to the new rosette of the present invention.

The new rosette, as shown in Figure 11, can also engage ledgers in a standard 8 way connection.

The new rosette 65 and the use thereof on scaffold posts, standards and frames represents a major design improvement. The increased versatility that comes with the new design simplifies installation for non-linear application while remaining compatible with existing systems. This flexibility together with its compatibility with existing ring lock type systems is particularly advantageous.

Although various preferred embodiments of the present invention have been described herein in detail, it will be appreciated by those skilled in the art that variations may be made thereto without departing from the scope of the appended claims.

THE EMBODIMENTS OF THE INVENTION IN WHICH AN EXCLUSIVE PROPERTY OR PRIVILEGE IS CLAIMED ARE DEFINED AS FOLLOWS:

1. In a scaffolding system with upright members connected to adjacent upright members by releasable ledgers that engage rosettes at spaced intervals on the upright member,

characterized in that the rosettes on at least some of the upright members, each having 4 securing ports through the rosette;

each port of the rosette is elongate and has opposed end positions orientated to locate a ledger head with these end positions being 45 degrees apart; and

wherein the port allows for ledger locating at a host of positions between the positions; and

wherein said ports are of similar size and adjacent ports are separated by one of 4 support spokes located between said ports.

2. A scaffold rosette of a general circular configuration with 4 elongate ledger connection ports of equal size distributed about the rosette and separated from adjacent ledger ports by support spokes.

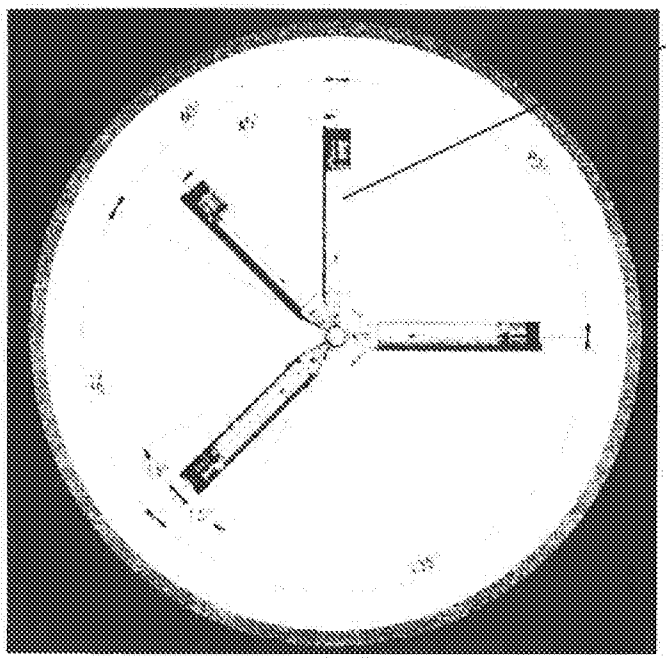

FIGURE 2 (PRIOR ART)

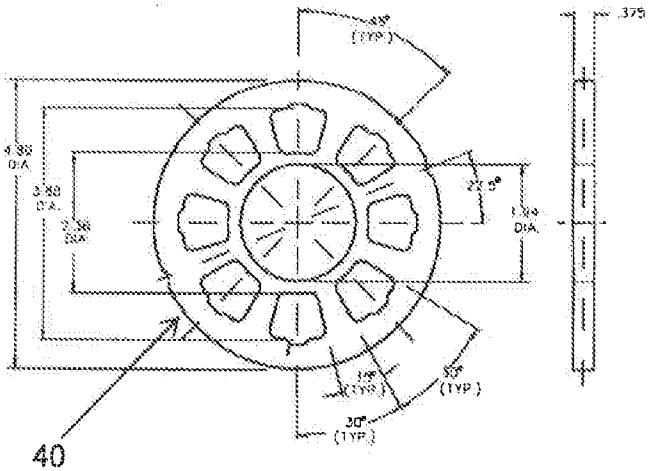

FIGURE 3 (PRIOR ART)

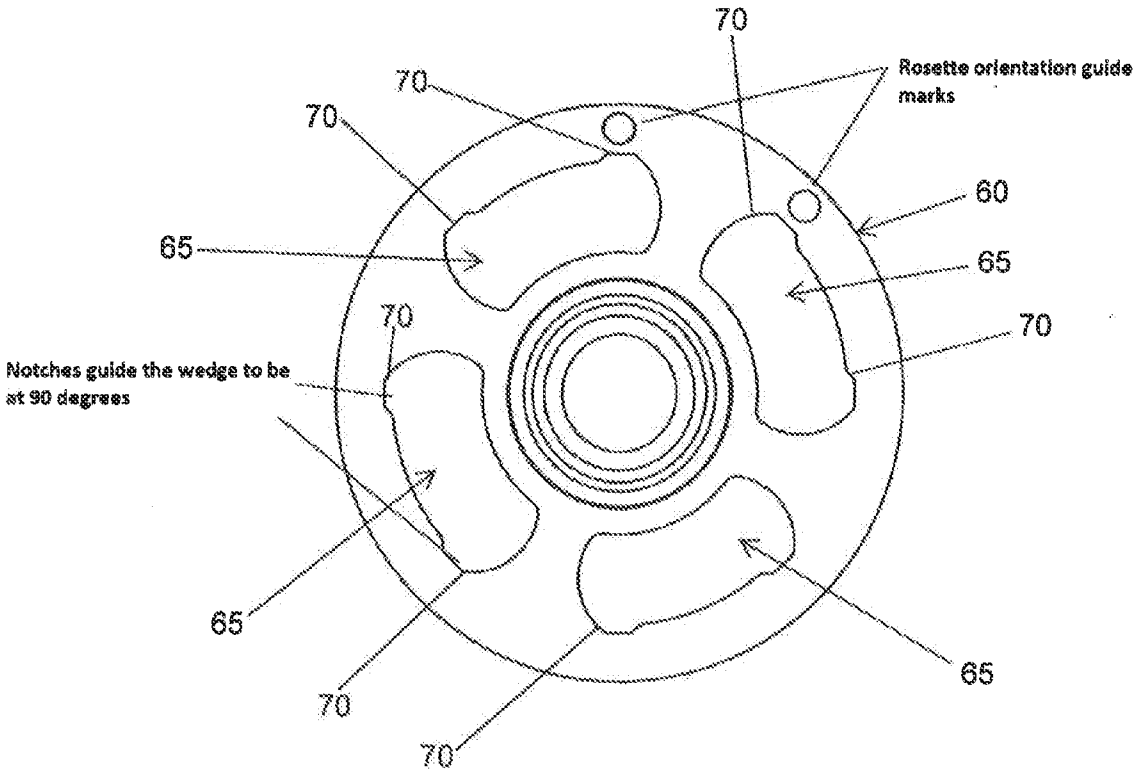
70
70
70
Rosette orientation guide marks
60
65
65
70
70
Notches guide the wedge to be at 90 degrees
65
65
70
70

FIGURE 4

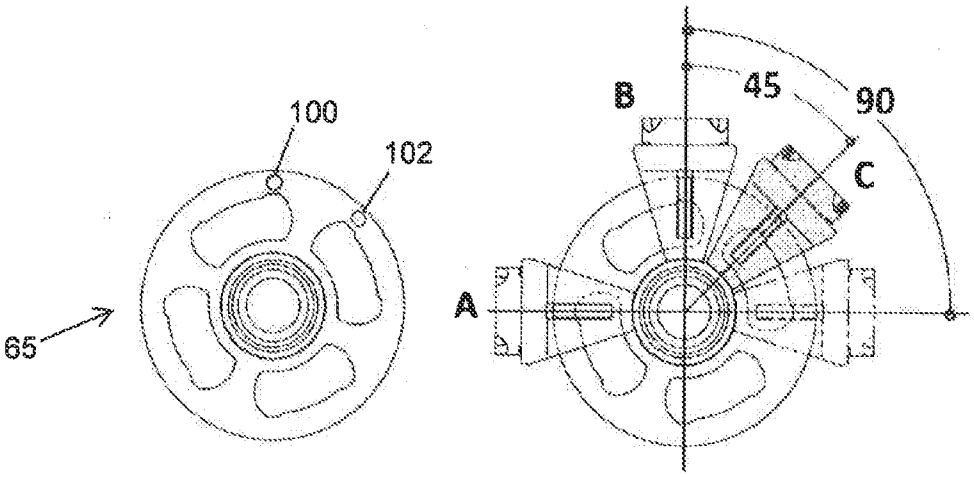

FIGURE 5

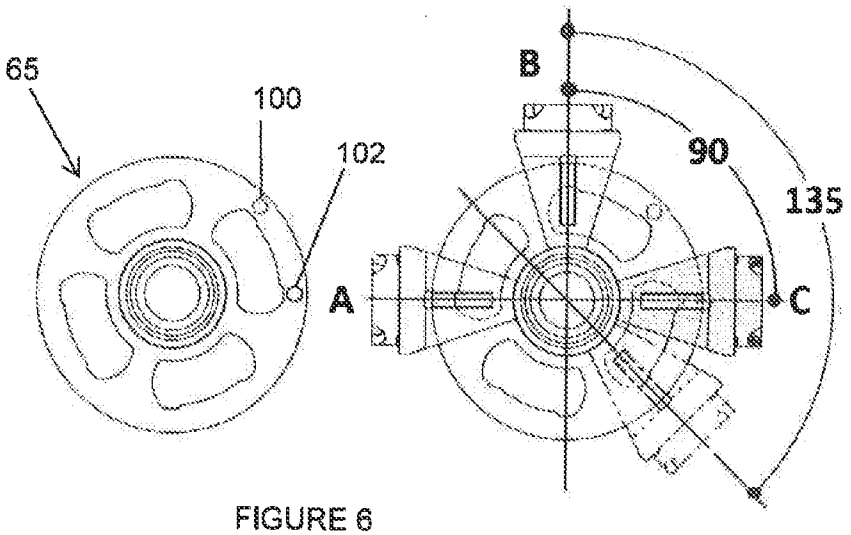

FIGURE 6

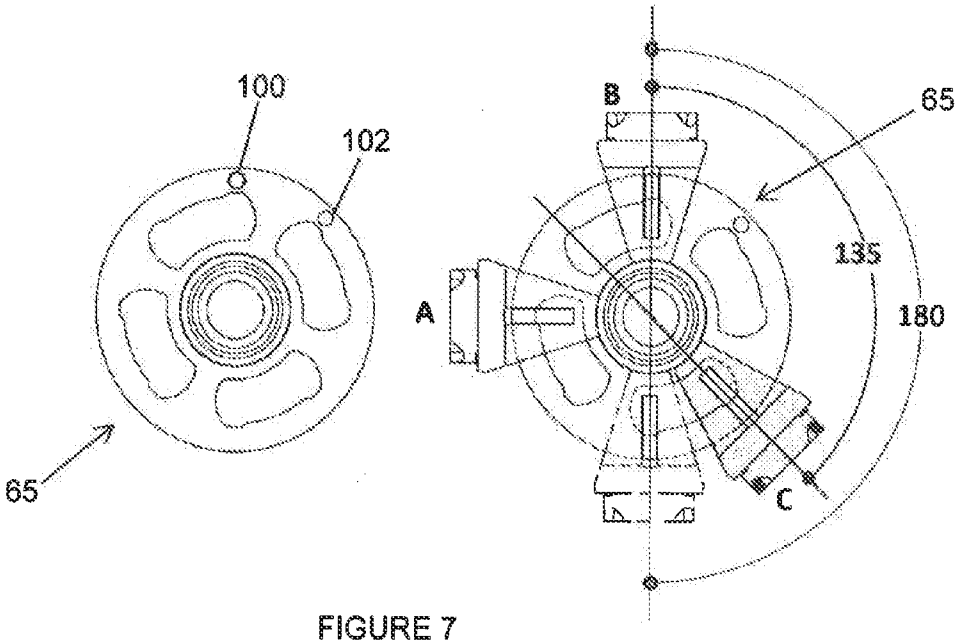

FIGURE 7

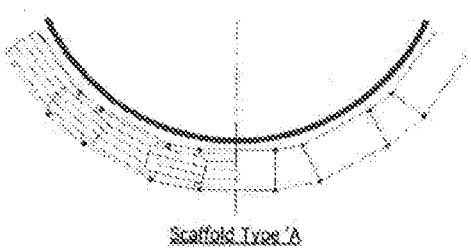

FIGURE 8 (PRIOR ART)

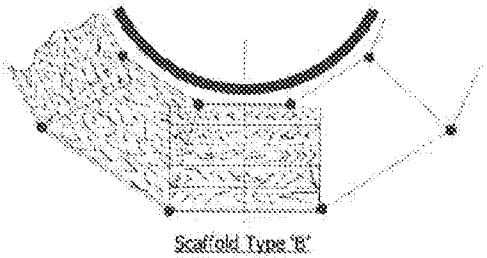

FIGURE 9 (PRIOR ART)

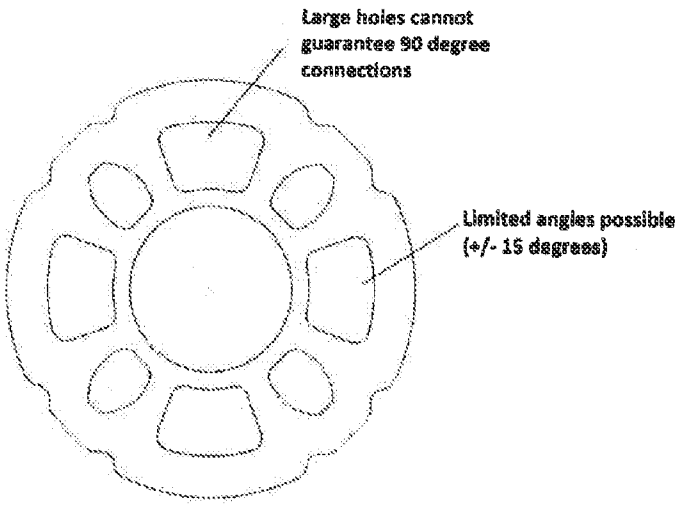

FIGURE 10 (PRIOR ART)

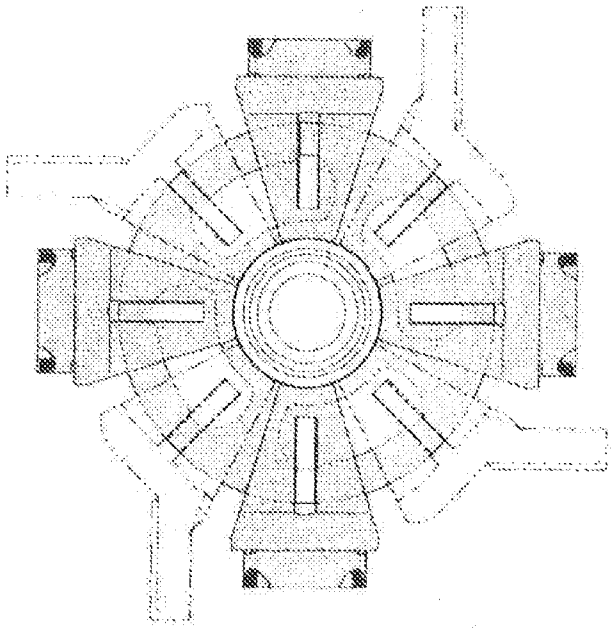

FIGURE 11