PORTABLE WORKING PLATFORM

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Filed: Oct. 5, 1972

App. No.: 295,289

U.S. Cl. 182/82, 182/120, 182/222
Int. Cl. E04g 5/08
Field of Search 182/222, 223, 91, 120, 182/121, 122, 131, 82, 248/235, 210, 242, 240, 240.3, 240.4; 287/100, 14

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ABSTRACT
A portable platform is provided for use where stable working stages are required but which must be removed when not in use. The assembly is comprised of a bracket portion that is normally fixed to an upright support and a platform portion which is detachably connected to the bracket portion. The connecting coupling between the platform portion and the bracket portion includes cooperating male and female mating cones secured by bolts and nuts to provide a stable connection.

6 Claims, 9 Drawing Figures
PORTABLE WORKING PLATFORM

BACKGROUND OF THE INVENTION

1. Field of the Invention
This invention relates generally to structural staging equipment and more particularly is directed towards a portable platform adapted to be quickly and easily mounted and dismounted from a fixed bracket.

2. Description of the Prior Art
A temporary staging is used to provide an elevated working platform for personnel who may be inspecting, repairing or servicing equipment or structure or carrying out other duties. Oftentimes a temporary platform is needed for a particular task but cannot be left permanently in place because of the proximity of moving machinery, high-powered cables or the like. In such instances, temporary platforms are provided by rigging conventional staging equipment. This is a time-consuming, difficult and expensive task, particularly if the location where the platform is to be mounted is not easily accessible.

Accordingly, it is an object of the present invention to provide a new and improved portable platform which may be quickly and easily mounted and dismounted from and from permanently fixed mounting brackets. Another object of this invention is to provide a platform of simple, low cost, rugged construction which may be either removed or folded from a working position to a stored position.

SUMMARY OF THE INVENTION
This invention features a portable working platform comprising a mounting bracket adapted to be fixed to a supporting structure and a movable platform detachably and pivotally connected to the bracket. The bracket and platform are provided with cooperating male and female conical coupling members adapted to be clamped together to provide stability to the platform even after extended use. The platform may be folded from a horizontal working position to a vertical storage position or may be entirely disconnected from the bracket for use elsewhere or for placement in storage. A folding arm or a cable supports the outer end of the platform.

BRIEF DESCRIPTION OF THE DRAWINGS
FIG. 1 is a view in perspective, partly exploded, showing a platform made according to the invention.
FIG. 2 is a top plan view of the bracket portion of the invention.
FIG. 3 is a view in front elevation of the bracket.
FIG. 4 is a side view thereof.
FIG. 5 is a detail sectional view of the coupling members.
FIG. 6 is a view in side elevation showing the FIG. 1 platform in a folded position.
FIG. 7 is a view similar to FIG. 6 showing the platform in a folded position.
FIG. 8 is a view similar to FIG. 6 but showing a modification thereof, and,
FIG. 9 is a view similar to FIG. 7 but showing the modified platform in a folded position.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

Referring now to the drawings, the reference charac-
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18. Each support cable 66 is provided with a hardened safety snap ring 68 adapted to connect a ring 70 at the upper end of the cable to one of a pair of plates 72 pre-mounted to the frame members 16 and 18. Each plate 72 is formed with an opening 74 at its lower forward corner to accommodate the snap ring and is fastened to the frame members by a plurality of U-bolts 76 similar to the U-bolts 22 and secured by nuts 78. The length of the cable 66 and the position of the plate 72 is selected to support the platform 14 in a horizontal position when erected.

The female coupling members 44 and 46 of the platform are positioned on the left-hand faces of the frame members 48 and 50 on the inner end thereof and in axial alignment. The spacing between the coupling members 44 and 46 corresponds with the length of the bracket so that the female coupling members on the platform may be slipped onto the male coupling members of the bracket and locked together by means of the bolts 40. The bolts hold the couplings together by means of a washer 80 and a wing nut 82. In practice, the inner ends of the frame members 48 and 50 extend inwardly beyond the cross member 52 to provide clearance between the bracket 20 and the platform to permit workers to quickly and easily assemble and disassemble the coupling.

With the conical coupling members engaged, the platform is free to swing in the vertical plane and can be held in a horizontal position by installing the cables 66. Each wing nut is then tightened up and the clamped conical members provide perfect mating surfaces to maintain the platform in a highly stable condition in the horizontal plane even after extensive use.

The platform is suitable for a number of different applications where a temporary staging is required but has special advantages for applications where a platform is required in a large number of locations but cannot be left in place when not in use. Insofar as the brackets are of a simple low cost construction, they may be locked permanently in fixed position to reduce the set-up time for a platform to a few minutes. Substantial savings may thus be realized because a few platforms may service a large number of work positions. In those situations where a platform cannot be left in position due to moving machinery or high-powered cables but is required quite often, the platforms can be left on their mounting brackets and simply swung downwardly out of position as suggested in FIG. 7 or entirely removed and re-mounted as needed.

Referring now to FIGS. 8 and 9, there is illustrated a modification of the invention and, in this embodiment, in place of the cables 66 as a means for supporting the outer edge of the platform, folding arms 84 and 86 are provided. The arms 84 and 86 are mounted below the platform 14' with the lower end of the arm 84 being pivotally connected to a fixed plate 88 while the upper end of the arm 86 is pivotally connected to the outer end of the platform 14' by pivot pin 90. The two arms are pivotally connected at 92 and are free to pivot at this point in one direction only whereby, in the erected position of FIG. 8, the arms lock to provide a stable support. The platform is lowered by applying an outward force to the arms at the pivot 92 so that the arms fold to allow the platform to swing down into the FIG. 9 position.

The platform may be fabricated of high strength aluminum or magnesium alloy, for example, although other materials may be used to advantage. The mounting bracket preferably is made of galvanized steel, brass or aluminum. Molded high strength plastic might also be used. In a highly corrosive atmosphere the conical coupling members should be fabricated of brass or coated with Teflon to prevent corrosion and reduce friction. The platform may be used in connection with such structures as high-powered transmission lines, towers for cable cars and ski lifts, factories, elevator shafts, railway buildings, construction projects, maintenance of high-level outdoor advertising signs, water towers and the like.

Having thus described the invention what I claim and desire to obtain by Letters Patent of the United States is:

1. A portable staging for the use with a generally upright permanent structure, comprising:
   a. a bracket adapted to be fixed to said structure,
   b. a platform detachably connected to said bracket and pivoted thereto about a generally horizontal axis,
   c. a plurality of cooperating spaced pairs of couplings mounted to said bracket and said platform in axial alignment,
   d. each of said pairs including mating male and female conical members and clamping means engaging therewith for locking said members in mating engagement, and,
   e. support means connected to said structure and to said platform for supporting said platform in a generally horizontal position,
   f. all of said male members being mounted to face in the same axially aligned direction and all of said female members being mounted to face in the same axially aligned opposite direction.

2. A portable staging according to claim 1 wherein said conical members are formed with axial passages and said clamping means includes a bolt adapted to extend through said passage and a nut engageable with said bolt.

3. A portable staging according to claim 1 wherein said bracket includes an elongated rigid member and a plurality of bolts for mounting said elongated member in a horizontal position to said structure said elongated member being formed with a plurality of outwardly extending arms each with one part of a coupling pair.

4. A portable staging according to claim 3 wherein said platform includes a plurality of inwardly extending arms each with another part of a coupling pair.

5. A portable staging according to claim 1 wherein said support means includes at least one flexible cable detachably connected at one end to said structure above said bracket and at the other end to the outer portion of said platform.

6. A portable staging according to claim 1 wherein said support means includes at least one folding leg connected at one end to said structure below said bracket and at the other end to the outer portion of said platform.

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