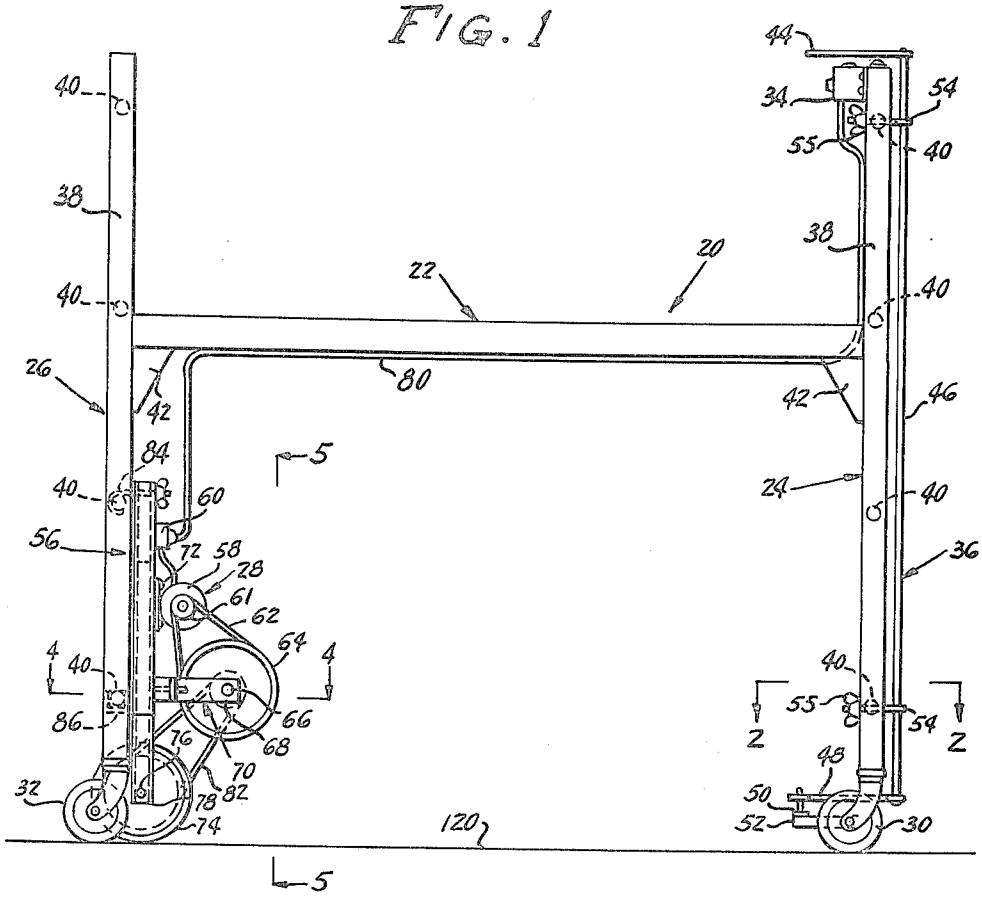
Feb. 1, 1966 G. T. WARTHEN 3,232,375

SELF-PROPELLED SCAFFOLD

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FIG. 1



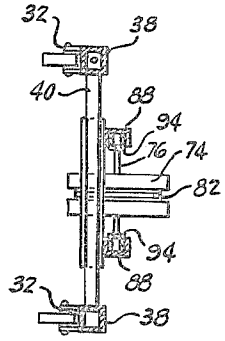


FIG. 4

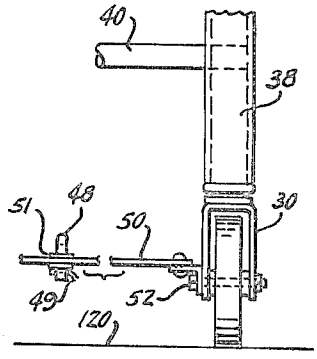


FIG. 3

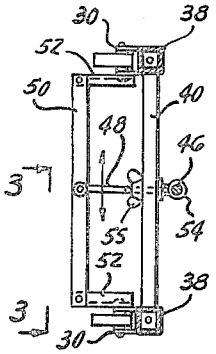


FIG. 2

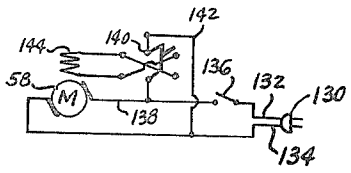


FIG. 10

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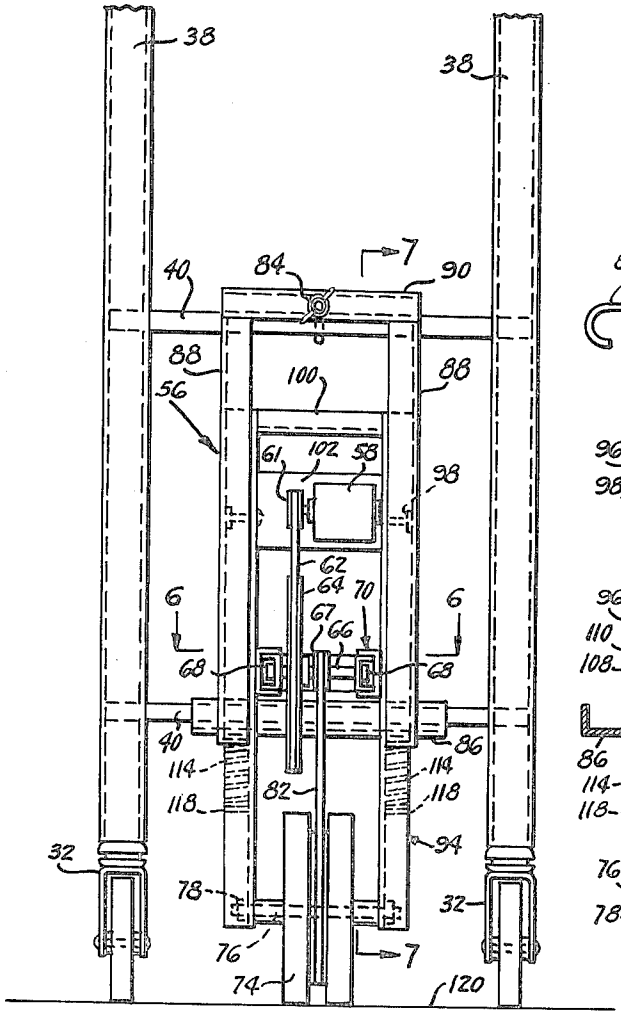


FIG. 5

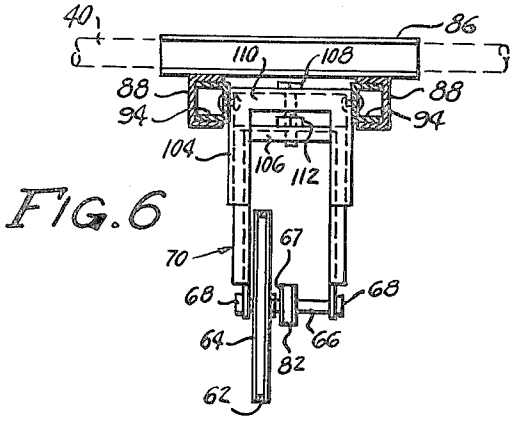


FIG. 6

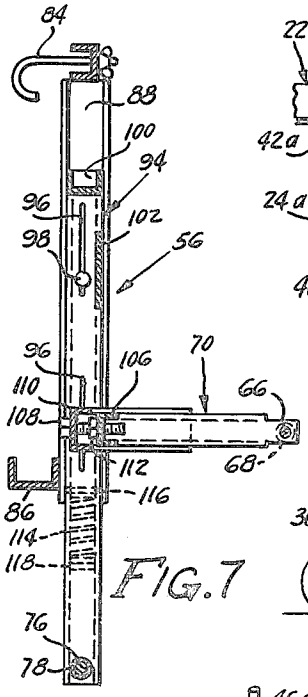


FIG. 7

FIG. 8

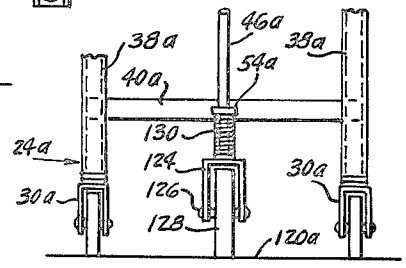


FIG. 9

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SELF-PROPELLED SCAFFOLD

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Filed Mar. 13, 1964, Ser. No. 351,627
3 Claims. (Cl. 182—13)

This invention relates to scaffolds, and more particularly to a guidable and self-propelled scaffold and propelling unit combination adapted to be used in various building industries.

The conventional scaffold has to be assembled at a particular site for a particular job of plastering, painting, repair, brick laying, installation of ceiling tiles, or other kindred types of work. Even slight movement of such scaffolds at such job sites makes the conventional scaffolds very cumbersome, laborious, requiring the use of several workmen, and consumes much of a workman's time as such work is performed manually.

The new self-propelled scaffold of the present invention solves the above problems by providing an adjustable and self-propelled scaffold which may be used by a single workman and quickly moved by its own power and guided to any designation about a construction or repair job commonly known in the building trades or the like.

A primary object of this invention is to provide a self-powered and propelled workman's scaffold which may be quickly moved about a construction job or the like, and which requires the use of only one workman to manipulate and use the same.

Another object of the present invention is to provide a self-propelled scaffold means which is simple, easy to assemble and move about a job situs.

A further object of this invention is to provile a novel self-propelled scaffold means which is guidable, efficient, inexpensive to make, and convenient to use.

Another object of the invention is to provide a novel self-propelled scaffold means which may be maneuvered or moved about as desired by the operator during work without the help of others.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being the intention to cover all changes and modifications of the example of the invention herein chosen for purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention.

In the drawings:

FIGURE 1 is a side elevational view of the new scaffold and self-propelling means of the instant invention;

FIGURE 2 is a fragmentary transverse cross-sectional view taken substantially on lines 2—2 of FIGURE 1 in the direction of the arrows showing the connections to the front caster wheels for one form of the steering mechanism;

FIGURE 3 is an enlarged fragmentary elevational view taken substantially on lines 3—3 of FIGURE 2, in the direction of the arrows with parts broken away for illustrative convenience;

FIGURE 4 is a fragmentary transverse cross-sectional view of FIGURE 1, taken substantially on lines 4—4 in the direction of the arrows;

FIGURE 5 is an enlarged fragmentary side elevational view of the propelling means of this embodiment of the invention taken substantially on lines 5—5 of FIGURE 1;

FIGURE 6 is a transverse cross-sectional view taken substantially on lines 6—6 of FIGURE 5 in the direction of the arrows showing the pulley tensioning means;

FIGURE 7 is a vertical cross-sectional view taken substantially on lines 7—7 of FIGURE 5 in the direction of the arrows;

FIGURE 8 is a fragmentary side elevational view showing a modified steering mechanism utilizing a separate spring pressed wheel means;

FIGURE 9 is a fragmentary end elevational view taken substantially on lines 9—9 of FIGURE 8 in the direction of the arrows; and

FIGURE 10 shows a simplified diagrammatic circuit diagram of the electrical wiring of the present invention.

Similar reference numerals represent similar parts in the several views of the drawing.

Referring more specifically to the drawing of FIGURES 1, 2, 3, 4, 5, 6, and 7, the self-propelled scaffold means of the present invention is generally represented by reference numeral 20 and comprises, in general, platform means 22, upright end standards 24 and 26, unit propelling means 28, caster means 30 and 32, control box means 34, and steering means 36.

Standards 24 and 26 each are conventionally comprised of side members 38 and intermediate rung members 40, as understood by those skilled in the art.

Platform means 22 may be comprised of various conventional structural members and plate deck means, as desired. Platform means 22 is secured to upright standards 24 and 26 by any conventional means including gusset plates 42 or various other structural means.

Steering means 36 is comprised of handle means 44 rigidly secured to steering rod means 46 connected to arm means 48 in turn connected to cross linkage means 50 secured to end linkage means 52 fastened to opposite caster means 30, arranged to be steered by handle means 44, as will be obvious to those with ordinary skill in the art.

Steering rod means 46 is pivotally carried by apertured bolt members 54 secured to standard means 36 by wing nuts 55 or the like.

Self-propelling unit 28 is comprised of an attachable frame means 56, motor means 58, terminal box means 60, belt means 62, pulley means 64 mounted on spindle means 66 rotatably secured in bearing means 68 in outstanding support means 70 adjustably secured to frame means 56 as shown. Motor means 58 is adjustably secured to frame means 56 by bolt means 72.

Spaced wheel and pulley means 74 for scaffold means 20 is mounted on spindle means 76 in bearing means 78 carried by frame means 56.

Motor means 58 is energized by cable means 80 in response to controller means 34. Energized motor means 58 drives wheel means 74 through belt means 62 and 82 and pulley means 64 and 67 which reduce the speed.

Frame means 56 is secured to rungs 40 by hook bolt means 84 and channel means 86, as best seen in FIGURE 7.

Frame means 56, as shown in FIGURES 5 and 6, is partially comprised of upper U-shaped channel means 88 to which is welded cross channel means 86 to receive one of the rungs 40. The top portion of channel means 88 has apertured channel means 90 welded thereto to receive the hook bolt means 84.

Frame means 56 is further comprised of an inside reciprocating channel means 94 comating and spring biased in channel means 88 and adjustably secured by slot means 96 and bolt means 98.

Channel means 94 comprises cross channel means 100 at its top portion, cross mounted motor base means 102, and horizontal channel means 104 welded to the side thereof. The lower end of channel means 94 carries double

driver wheel and intermediate pulley means **74** mounted on spindle means **76** in bearing means **78**.

Support means **70** is adjustably carried by channel means **104** welded to channel means **94**. Support means **70** carries a threaded apertured inner channel means **106** adapted to receive adjustable bolt means **108** which coacts with cross channel means **100** secured to each of channel means **104**. Support means **70** also carries spindle or shaft means **66** of pulley means **64** and **67**.

Screw bolt means **108** and lock nut means **112** serve as a belt tensioning means for belt means **62** and **82**, as best shown in FIGURES 5 and 7.

Spring bias means **114** are mounted between lug means **116** welded in frame means **88** and lug means **118** welded in channel means **94**. Spring means **114** serves many novel purposes, that is, insuring proper traction between the tires of driver means **74** and a surface **120** and smooth operation of the device.

A second steering modification of the invention is shown in FIGURES 8 and 9, in which the steering means comprises handle means **44***a*, steering rod means **46***a* which is secured to standard means **38***a* by apertured bolt means **54***a* being carried by rung means **40***a*. Steering rod means **46***a* terminate at its lower portion in a fork means **124** which carries shaft means **126** on which is mounted steering wheel or roller means **128**.

A spring means **130** is mounted between lower bolt means **54***a* and fork means **124** for purposes of pressing the roller **128** into contact with the supporting surface **120***a* for steering the scaffold means when in transit. Other parts similar to the embodiment of FIGS. 1–7 are designated by like reference numerals followed by the suffix "*a*."

FIGURE 10 illustrates an elementary circuit diagram of the energizing and circuit control means of the present invention in which terminal plug means **130** is plugged into a suitable power source (not shown) to energize the scaffold during transit. Plug means **130** has lead means **132** and **134**. Lead means **132** is connected to energizing switch means **136** which is further connected by lead means **138** to motor field reversing switch means **140** which is connected by lead means **142** to lead means **134**. Reversing switch means **140** is connected across motor field **144**. Motor means **58** is connected across leads **138** and **134** as shown in FIGURE 10. On and off switch means **136** and field reversing switch means **140** are conveniently mounted in controller box **34** of FIGURE 1. A rheostat (not shown) may be included if desired to vary the speed of travel.

Operation

An operator may stand at controller box **34** and steering handle **44** in both steering modifications of the invention and by using switch means **140** and **136** energize and move scaffold means **20** to any desired location by using steering lever means **44**. Motor pulley **61** is of such ratio to that of friction wheel driving means **74** that no brake means is ordinarily required. However, any conventional braking means may be used with this new mobile scaffold within the purview of this invention.

Reversing switch **140** is used for backward and forward motion of the scaffold **20**.

Switch means **136** is used by the operator to start and stop the travel of scaffold **20**.

From the foregoing, it will now be seen that there is herein provided an improved self-propelled mobile scaffold means manageable by an operator which accomplishes all the objects of this invention, and others, including many advantages of great practical utility and commercial importance.

It should be understood, of course, that the foregoing disclosure relates to only a preferred embodiment of the invention and that it is intended to cover all changes and modifications of the modifications of the examples of the invention herein chosen for the purposes of the disclosure, which do not constitute departures from the spirit and scope of the invention set forth in the appended claims.

I claim:

1. A self-propelled scaffold comprising, in combination, a normally horizontal deck, a pair of vertical rear supporting standards and a pair of front supporting standards for said deck, a swivel mounted caster wheel at the lower end of each standard, transverse rungs connecting the standards of said rear supporting pair of standards, a telescopic frame member including a pair of spaced normally vertical upper channel members and a telescoping pair of normally vertical lower channel members, a transverse channel member secured between the lower ends of said pair of upper channel members and engaging around one of said rungs, a second transverse channel member extending between the upper ends of said upper channel members, hook means carried by said second transverse channel member engaging another one of said rungs, spring means biasing said lower vertical channel members downwardly with respect to said upper channel members, a motor support carried by said pair of lower channel members adjacent their upper ends, an axle extending between the lower ends of said lower pair of channel members, a drive wheel mounted on said axle, belt and pulley means connecting said motor and said drive wheel, and steering means for said caster wheels on said pair of front supporting standards.

2. The structure of claim **1** wherein said motor is a reversible electric motor, means are provided for supplying electric current thereto, remote control means are provided for said motor adjacent said pair of front standards, and means for controlling said steering means for said caster wheels on said front standards are provided adjacent said remote control means.

3. The structure of claim **1** wherein said motor includes a drive shaft, a transverse telescopic frame is secured to said lower channel members, an axle is carried by said transverse frame, and wherein said belt and pulley means include a first pulley on said drive shaft, a second pulley on said last-mentioned axle, belt means connecting said first and second pulleys, a third pulley on said last-mentioned axle, a fourth pulley on said axle extending between said lower ends of said lower pair of channel members, and a belt connecting said third and fourth pulleys, and wherein means are provided for securing said transverse frame and hence the axle carried thereby in a selected position of adjustment.

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