F. B. JOHNSTON.

SAFETY SCAFFOLD.

APPLICATION FILED JUNE 30, 1916.

1,352,454. **Patented Sept. 14, 1920.**

2 SHEETS—SHEET 1.

Fig: 1.

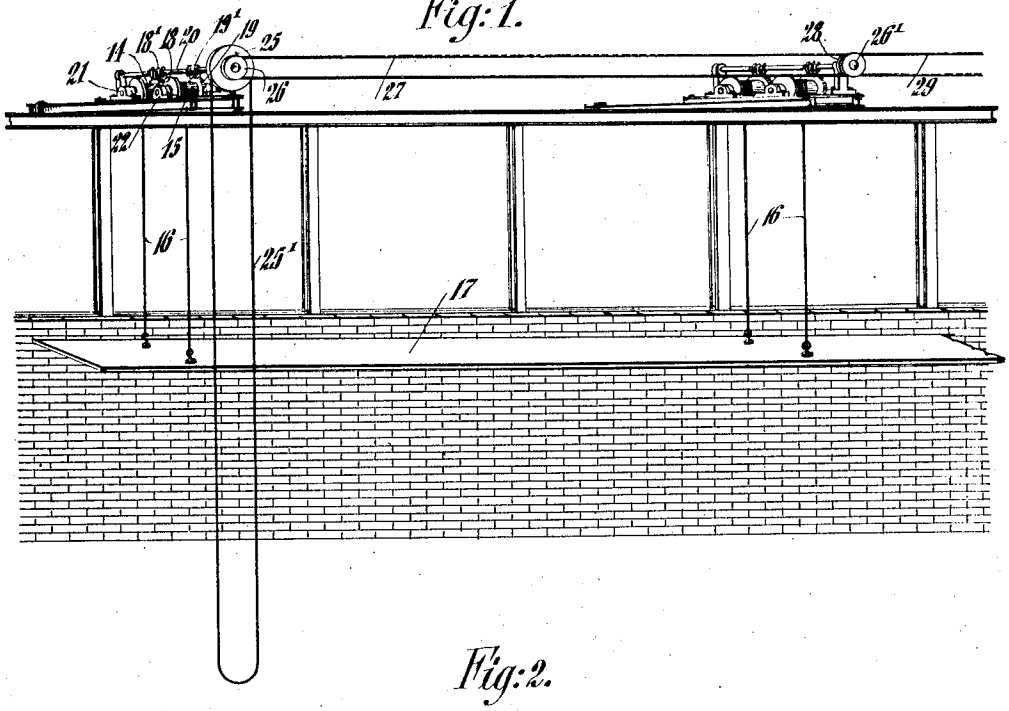
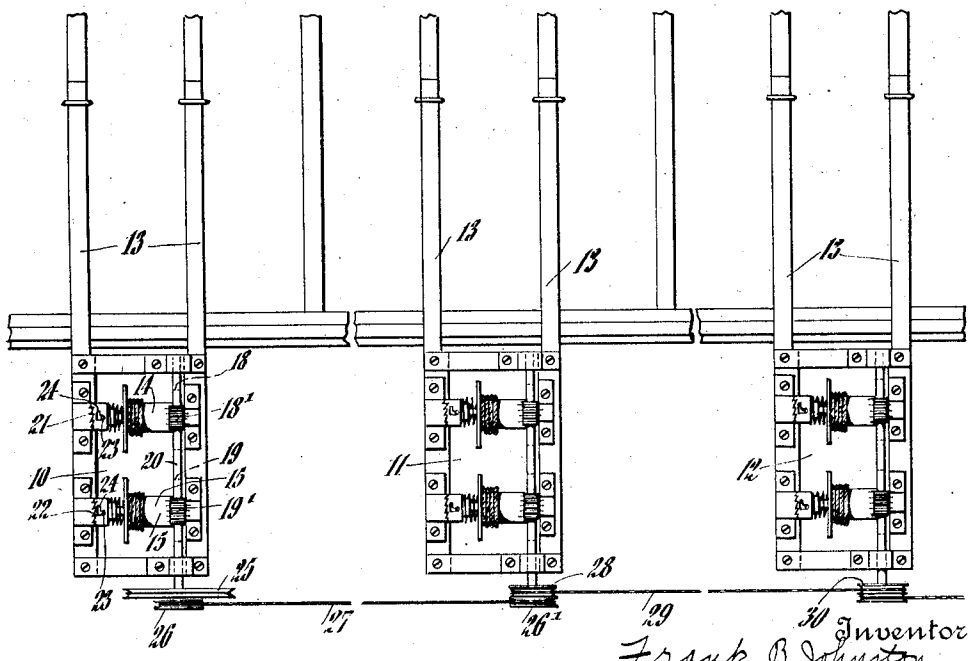


Fig: 2.



Inventor
Frank B Johnston

By Attorney
C. P. Goepel

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2 SHEETS—SHEET 2.

Fig. 3.

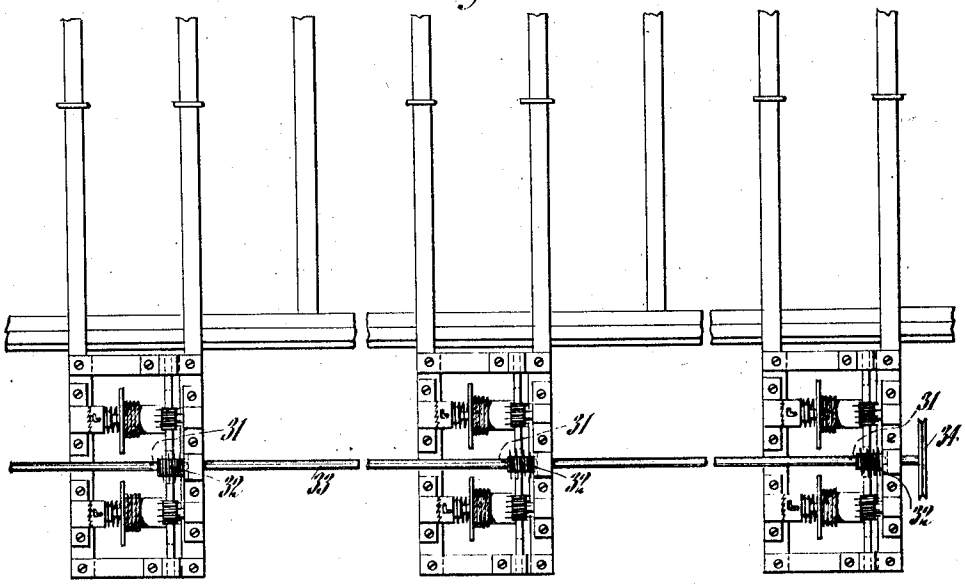
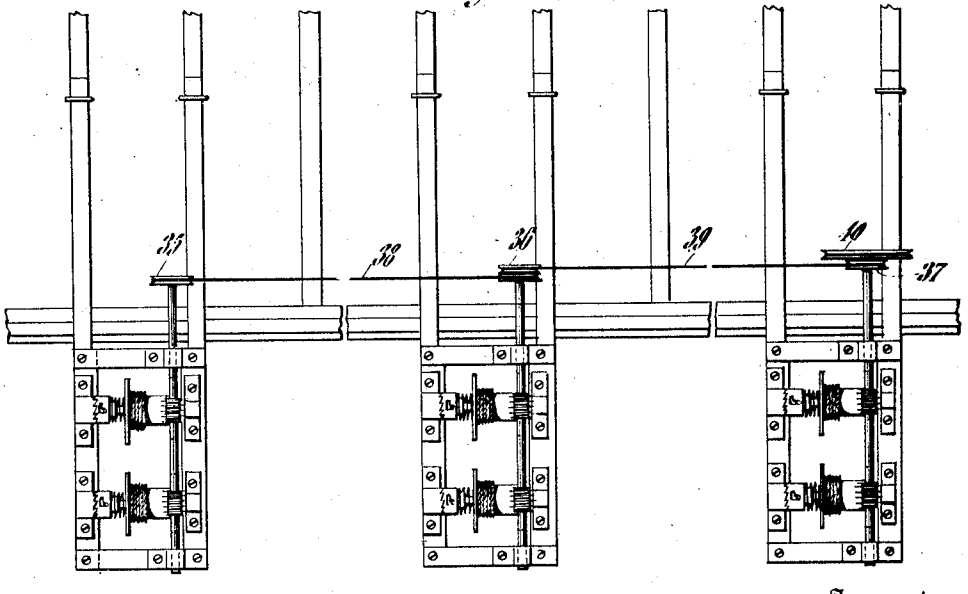


Fig. 4.



Inventor
Frank B. Johnston.

By Attorney
C. P. Goepel.

UNITED STATES PATENT OFFICE.

FRANK B. JOHNSTON, OF NEW YORK, N. Y., ASSIGNOR TO AMERICAN SAFETY DEVICE COMPANY, A CORPORATION OF NEW YORK.

SAFETY-SCAFFOLD.

1,352,454. Specification of Letters Patent. Patented Sept. 14, 1920.

Application filed June 30, 1916. Serial No. 106,782.

To all whom it may concern:

Be it known that I, FRANK B. JOHNSTON, a citizen of the United States, and resident of New York city, borough of Manhattan, State of New York, have invented certain new and useful Improvements in Safety-Scaffolds, of which the following is a specification.

The present invention relates to improvements in safety scaffolds, and particularly scaffolds as are used in the erection of tall buildings.

An object of the present invention is to provide in such scaffolds, an improved controlling system by which a length of scaffolding may be manually raised and lowered by one person, in an expeditious and uniform manner. Another object is to provide such controlling means which will be adaptable to different lengths of scaffolds.

With these and other objects in view, my invention is shown in the accompanying drawings, and will be hereinafter more fully described with reference thereto, and finally pointed out in the claims.

In the accompanying drawings,

Figure 1 is a perspective view of a scaffold embodying my improvements, and showing the incompleted wall of a building,

Fig. 2 is a top plan view thereof,

Fig. 3 is a top plan view of a modified form of construction, and

Fig. 4 is a similar view of another modified form of construction.

Similar reference characters indicate corresponding parts throughout the several figures of the drawings.

Referring to the drawings, and more particularly to Figs. 1 and 2 thereof, scaffolding machines 10, 11 and 12 for supporting, and raising and lowering the scaffolds are mounted at suitable intervals along the wall of the buildings, upon outriggers 13 in the usual manner. These scaffolding machines each comprise drums 14 and 15 upon which the cables 16 supporting the scaffold platform 17 are wound, these drums being operated by worm gears 18 and 19, propelled by worms 18′ and 19′ of the shaft 20. Clutch devices 21 and 22 prevent rearward movement of the drums during the raising of the scaffold. These clutch devices may be made inoperative by manually disengaging the ratchet teeth and turning the pin 23 into the circumferential slot 24.

At the end of the shaft 20 of the machine 10, there is provided a pulley wheel 25 over which an endless cable 25′ is engaged, which extends downwardly to the scaffold platform and in reach of the workmen. There is also mounted on the shaft 20, a second pulley 26 which is connected to another pulley 26′ of equal size on the drive shaft of the next machine 11, by an endless cable 27. Similarly the drive shaft of the machine 11 is provided with a second pulley 28 which is connected by an endless chain 29 to a pulley 30 on the drive shaft of the third machine 12, and so on all of the machines of the scaffold are these coöperatively connected. By pulling on the cable 25′ it will be seen all of the machines are correspondingly operated and the scaffold platform is uniformly raised at all points. The main operating pulley need not necessarily be at the end machine, but may if desired be at an intermediate point.

In Fig. 3 I have shown a slightly modified form of carrying out my invention. The drive shafts of each machine are provided with worm gears 31 which are engaged by worms 32 mounted upon a shaft 33, extending along the length of the scaffold. At one end the said shaft is provided with a pulley 34 over which is engaged an endless cable, which extends downwardly to the scaffold platform. By pulling upon this cable all of the machines will be simultaneously operated, and the scaffold platform uniformly raised.

In the further modified form of construction illustrated in Fig. 4 the driving shafts of the machines are extended inwardly into the building and are provided on the inner ends with pulleys 35, 36 and 37, connected by endless cables 38, 39. The shaft of the end machine is provided with an operating pulley 40 over which an endless cable is engaged. This form of construction enables the scaffold to be operated from within the building, and also takes the weight from the outer end of the machines.

I have illustrated preferred and satisfactory forms of my invention, but it is obvious that changes may be made therein within the spirit and scope thereof, as defined in the appended claims.

I claim:

1. In a scaffolding apparatus, an elongated platform, a plurality of raising and

lowering means supporting said platform suspended at a plurality of points, means operatively connecting all of said raising and lowering means, whereby operation of one of said last named means, simultaneously and equally operates all of said last named means, and means operable from one point for effecting said simultaneous and equal operation to cause equal movement of said platform at all points in a substantially level position.

2. In a scaffolding apparatus, an overhead structure, a plurality of cable winding machines mounted upon said overhead structure at spaced points, an elongated platform, cables connected to said respective winding machines and supporting said platform suspended at spaced points thereon, and adapted upon operation of said machines to raise and lower said platform at said spaced points, means operatively connecting said machines, whereby operation of one of said machines simultaneously and equally operates all of said machines, and means operable from one point for effecting said simultaneous and equal operation to cause equal movement of said platform at all points in a substantially level position.

3. In a scaffolding apparatus, an elongated platform, a plurality of hoisting units supporting said platform at a plurality of points, and a common operating means connected to all of said hoisting units and controllable from one place of manipulation, whereby a single person may control all of said hoisting units for simultaneously lifting of said platform at said plurality of points.

4. In a scaffolding apparatus, an elongated platform, a plurality of raising and lowering means supporting said platform, suspended at a plurality of points, each of said means including independent operating means, and common means operatively connecting said independent operating means, whereby operation of one of said last named means simultaneously and equally operates all of said last named means to cause equal movement of said platform at all points in a substantially level position.

In testimony that I claim the foregoing as my invention, I have signed my name in presence of two subscribing witnesses.

FRANK B. JOHNSTON.

Witnesses:

D. LEWIS MATTERN,

A. BLUM.