No. 710,686. Patented Oct. 7, 1902.

S. R. HARRIS.

ELEVATOR.

(Application filed Dec. 31, 1900. Renewed Apr. 5, 1902.)

(No Model.) 3 Sheets—Sheet 1.

FIG. 1.

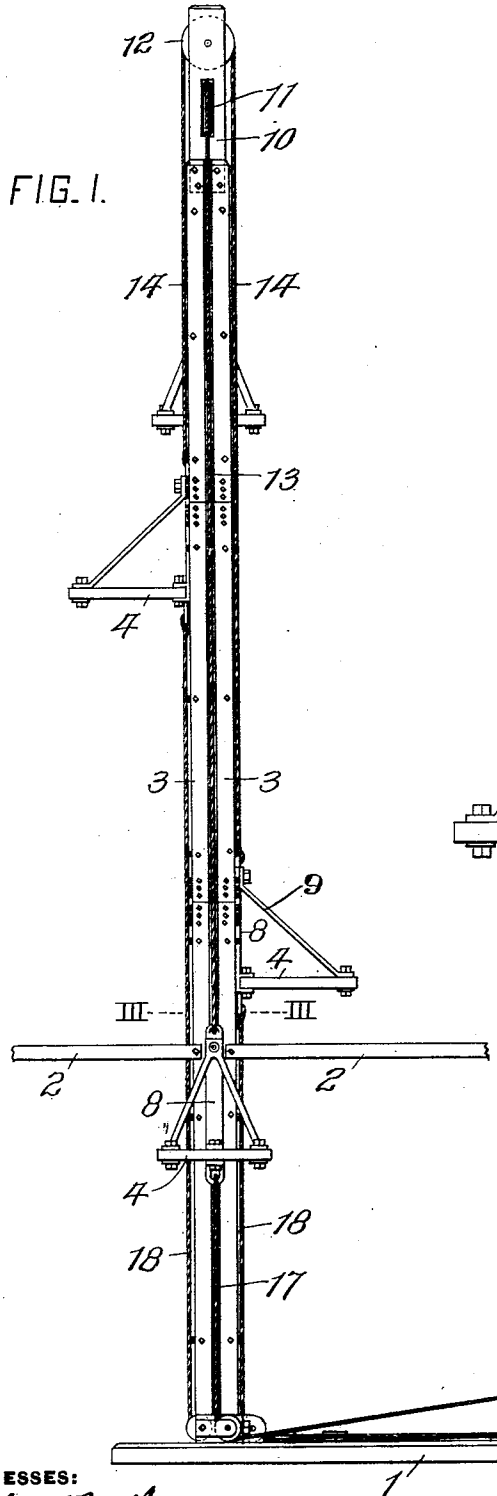
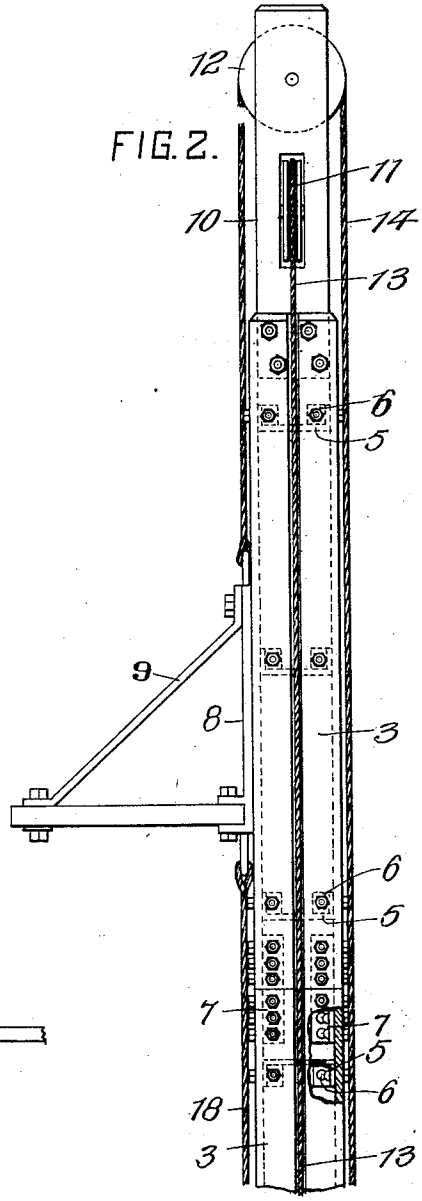


FIG. 2.



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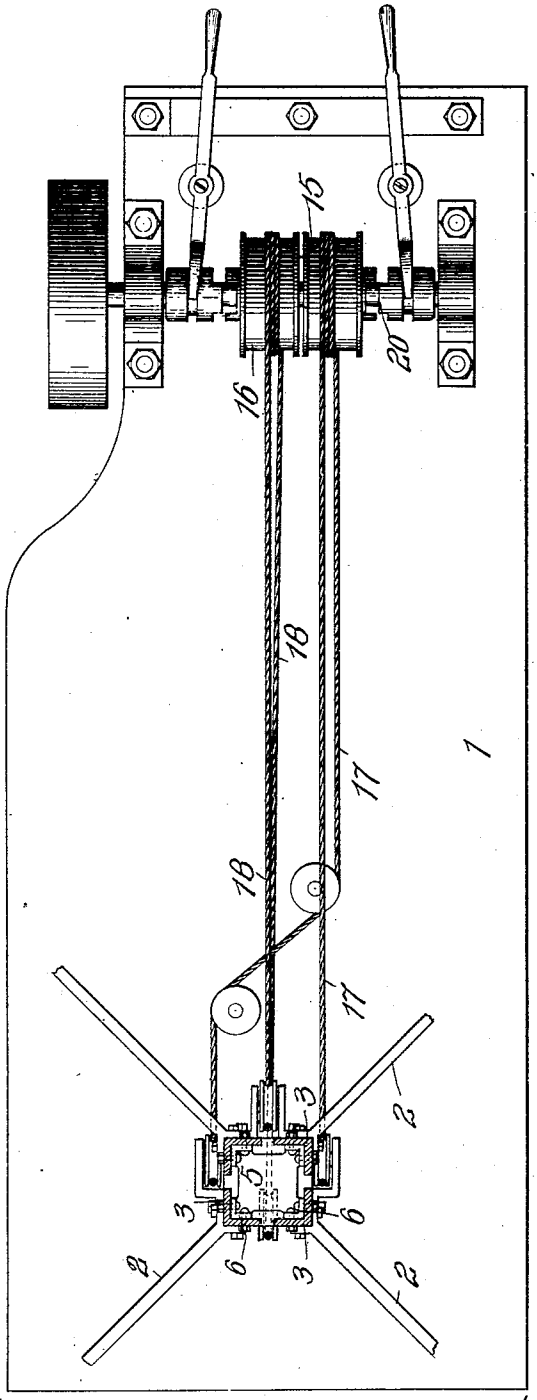
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(No Model.) 3 Sheets—Sheet 2.

FIG. 3.



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(No Model.) 3 Sheets—Sheet 3.

FIG. 4.

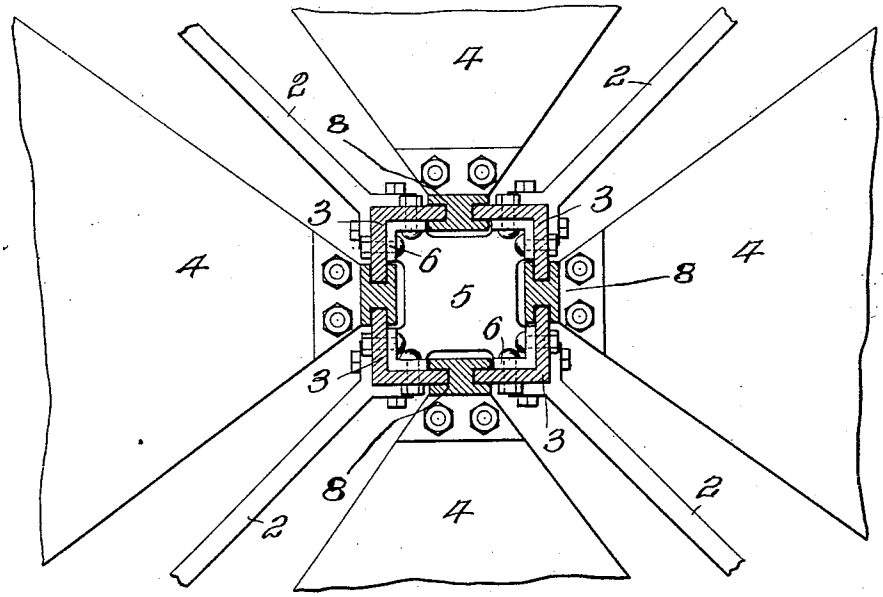
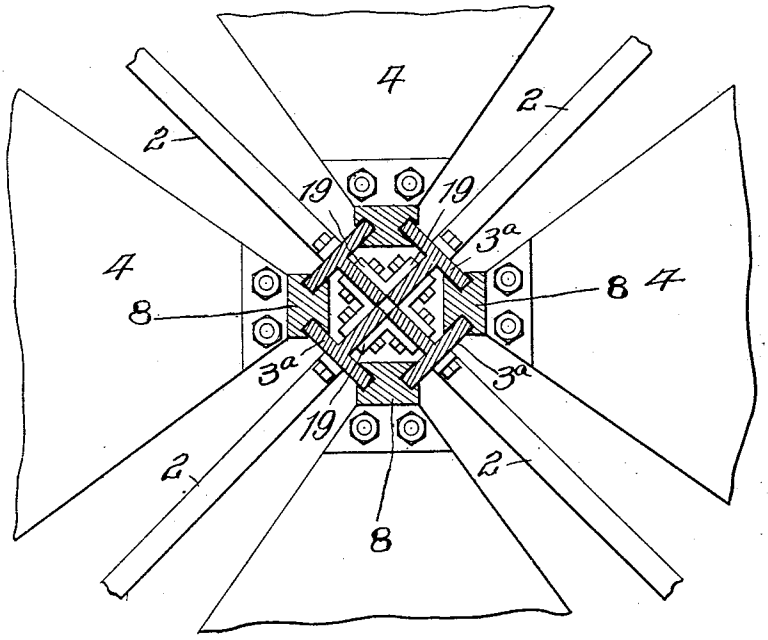


FIG. 5.



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UNITED STATES PATENT OFFICE.

SAMUEL R. HARRIS, OF KNOXVILLE, PENNSYLVANIA.

ELEVATOR.

SPECIFICATION forming part of Letters Patent No. 710,686, dated October 7, 1902.

Application filed December 31, 1900. Renewed April 5, 1902. Serial No. 101,490. (No model.)

To all whom it may concern:

Be it known that I, SAMUEL R. HARRIS, a citizen of the United States, residing at Knoxville, in the county of Allegheny and State of Pennsylvania, have invented or discovered certain new and useful Improvements in Elevators, of which improvements the following is a specification.

The invention described herein relates to certain improvements in elevators, the improvements being especially applicable to the class or kind of elevators employed by contractors for hoisting material in the erection of buildings.

It is the object of the invention to provide for the extension of the elevator as the building progresses in height and also for increasing the hoisting capacity of the elevator without increasing the number of guide-rails, &c.

The invention is hereinafter more fully described and claimed.

In the accompanying drawings, forming a part of this specification, Figure 1 is a side elevation of my improved elevator. Fig. 2 is a similar view of the upper portion of the elevator-shaft on an enlarged scale. Fig. 3 is a sectional plan view on a plane indicated by the line III III, Fig. 1, the platforms being omitted. Fig. 4 is a sectional plan of the elevator shaft and platforms, on an enlarged scale, illustrating the construction of shaft and guides; and Fig. 5 is a similar view illustrating a modification of the invention.

In the practice of my invention I employ a single guide-shaft which at its lower end is secured in a platform 1 or any other suitable foundation. The portions of the shaft above the foundation are braced or supported by braces 2, having their inner ends secured in any suitable manner to the shaft, while their outer ends bear against the framing of the building or other suitable abutments. The shaft is constructed of a series of sections each of which is made of a length equal to or preferably a little greater than the height of the several stories of the building, so that the platforms may be raised to the level of each floor as the work progresses. These sections are preferably formed of angular structural material or shapes, such as angles or channel-bars or T-bars. In the construction shown in Figs. 1 to 4 the shaft-sections are formed by a series of angle-bars 3, which form the corners of the shaft and are made of such transverse dimensions that the contiguous edges of the channel-bars will form a slot for the reception of the guiding portion of the platforms 4, as shown in Figs. 3 and 4. The angle-bars are secured together and in proper relation to each other by means of a series of plates 5, having upturned lugs 6, which are riveted to the several angle-bars so that the angle-bars of each section will form a rigid structure. The several sections of the shaft are secured together by means of small angle-bars 7, which project inside of the adjacent ends of the sections and are bolted to the angle-bars of such sections, thereby rigidly securing each section to those adjacent thereto. The platforms 4 are provided at their inner ends with castings 8, which are slotted on their sides for the reception of the edges of the angle-bars forming the shaft. This casting 8 is preferably made of considerable length, so as to have a long bearing on the shaft, and the wooden portion or platform is preferably secured to the lower end of this casting, as shown in Fig. 2. The outer end of the platform is connected by braces 9 to the upper end of the casting 8, thereby securely supporting the outer ends of the platforms, which, as shown in Figs. 4 and 5, are made triangular in contour. The upper portion of the shaft is preferably formed of a solid block 10 of any suitable material, as wood or iron, and is transversely slotted for the reception of the pulleys 11 and 12, over which pass the ropes 13 and 14, which platforms are on opposite sides of the shaft. This block 10 fits within the upper end of the upper section and is detachably secured therein by means of transverse bolts.

While it is preferred to employ four platforms, one on each side of the shaft, it will be understood that only two may be employed, or by making the shaft hexagonal or other polygonal shape in cross-section six or more platforms may be employed. The platforms on diametrically opposite sides are connected together by ropes 13 and 14, respectively, passing over the guide-pulleys at the top of the shaft. The lower ends of the castings or diametrically opposite platforms have con-

nected to them ropes 17 and 18, which pass around suitable guide-pulleys to a drum or drums 15 and 16, located in covenient proximity to the foot of the elevator and are wound in opposite directions on said drums, so that as the rope to one of the platforms is wound on the drum to pull that platform down it will operate through the medium of the balancing or connecting rope over the top pulley to raise the opposite platform, the rope connected to its lower end and extending to the drum being unwound from the drum. When employing more than one pair of platforms, two or more drums will be employed for operating the several pairs, and said drums will be detachably connected to the driving-shafts by means of suitable clutches 20, which can be shifted so that each pair may be operated independent of the others.

In Fig. 5 I have shown the elevator-shaft formed of T-irons 3^a, which are connected together by means of angle-bars 19, which not only serve to connect the T's on each elevator-section together but also to connect the several sections of the shaft to each other, as heretofore described.

I claim herein as my invention—

1. An elevator having in combination two or more movable platforms, and a guide shaft or post formed of four or more angular structural shapes secured together in radial relation to each other, portions of such angular shapes forming guides for the platforms, substantially as set forth.

2. An elevator having in combination two or more movable platforms, and a guide shaft or post formed of separable sections, each section being formed of four or more angular structural shapes secured together in radial relation to each other, portions of such angular shapes forming guides for the platforms, substantially as set forth.

3. An elevator having in combination two or more movable platforms, a guide shaft or post formed of separable sections, each section being formed of four or more angular structural shapes secured together in radial relation to each other portions of such angular shapes forming guides for the platforms and a detachable head or cap block carrying one or more guide-pulleys, substantially as set forth.

In testimony whereof I have hereunto set my hand.

SAMUEL R. HARRIS.

Witnesses:

WM. D. GRIMES,

ALMA HARTLEP.