

Sept. 15, 1959

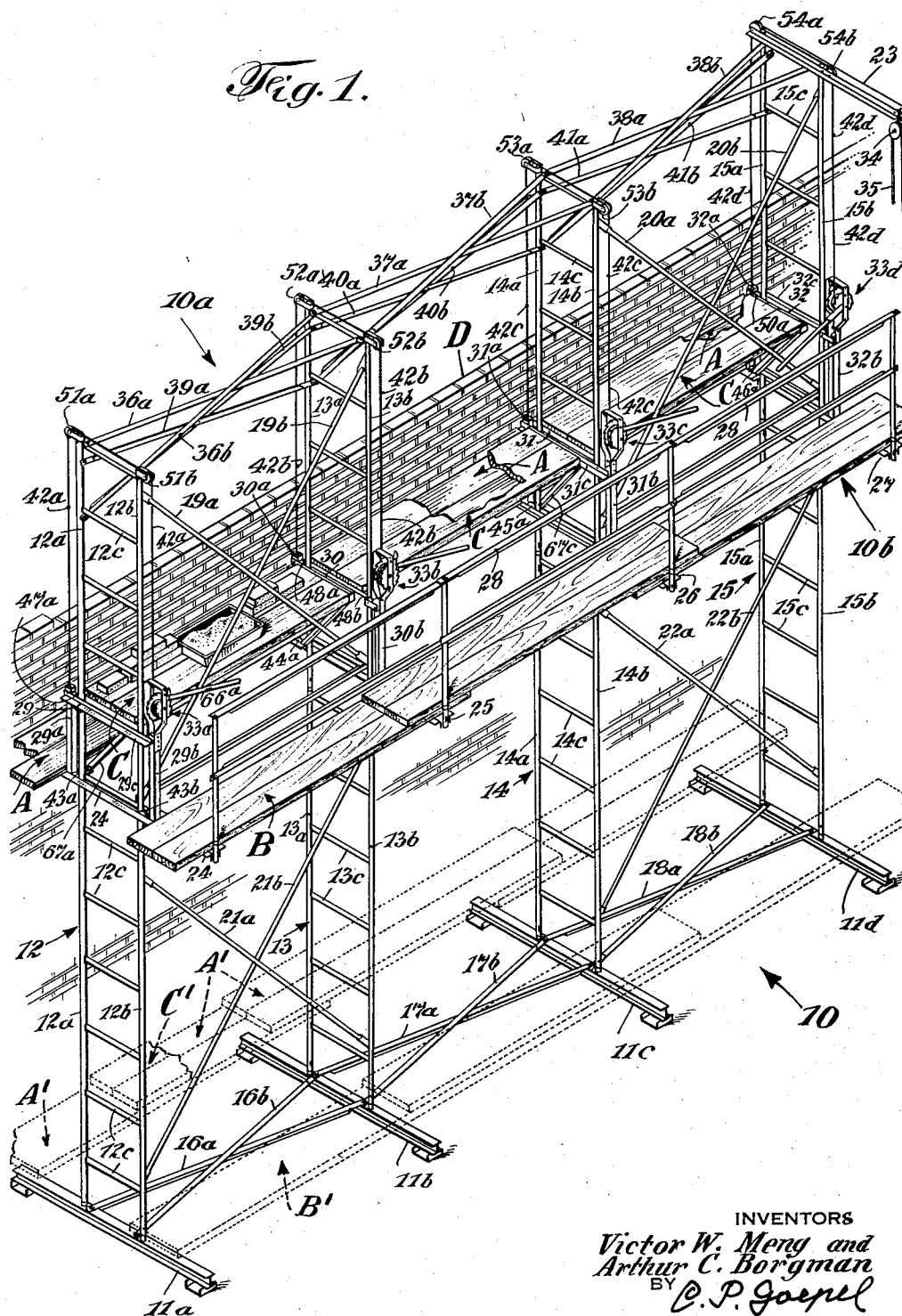
V. W. MENG ET AL
MULTIPLATFORM SCAFFOLDS

2,904,126

Filed Dec. 27, 1955

3 Sheets-Sheet 1

Fig. 1.



INVENTORS
Victor W. Meng and
Arthur C. Borgman
BY C. P. Goepel
their ATTORNEY

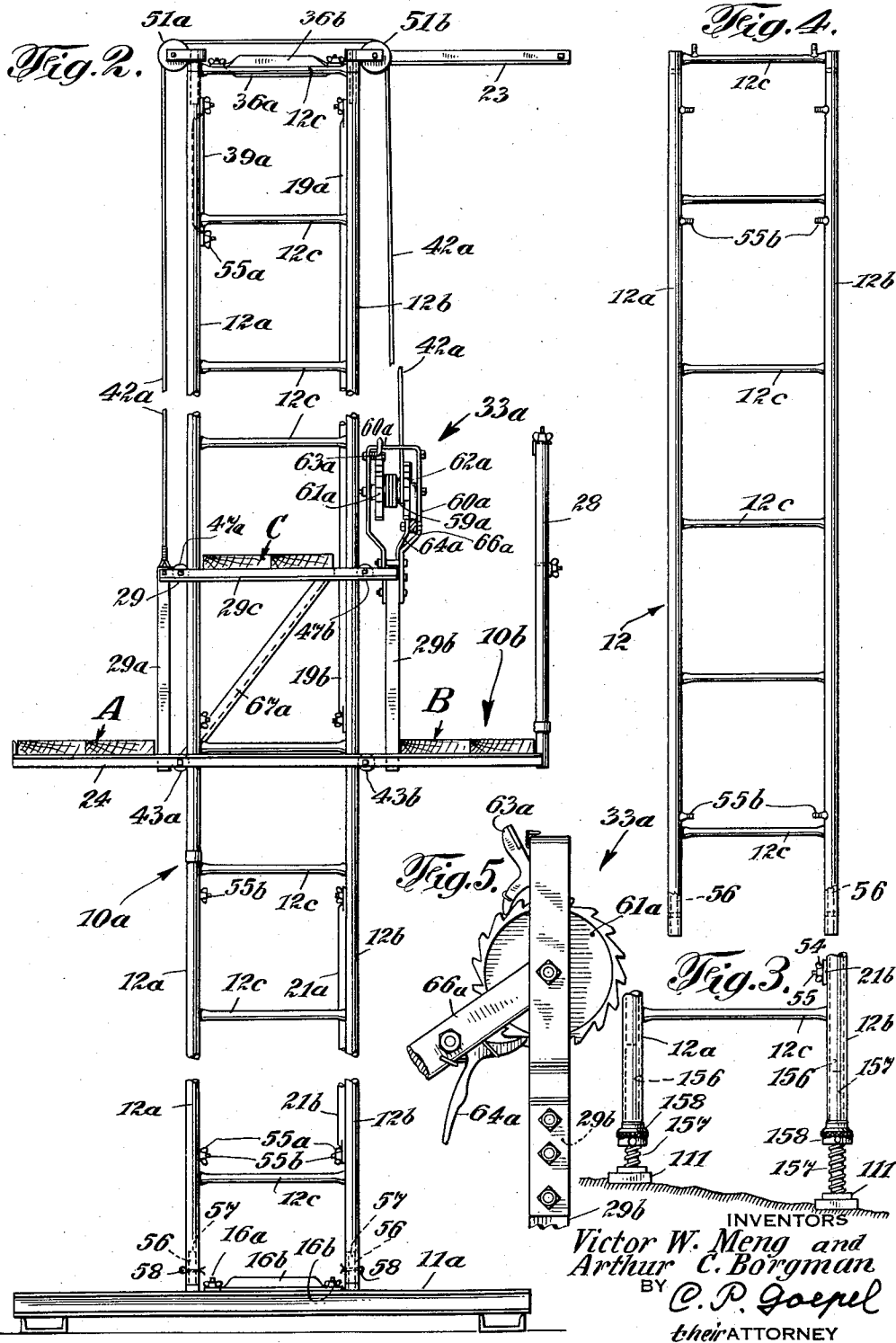
Sept. 15, 1959

V. W. MENG ET AL
MULTIPLATFORM SCAFFOLDS

2,904,126

Filed Dec. 27, 1955

3 Sheets-Sheet 2



Sept. 15, 1959

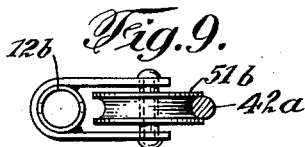
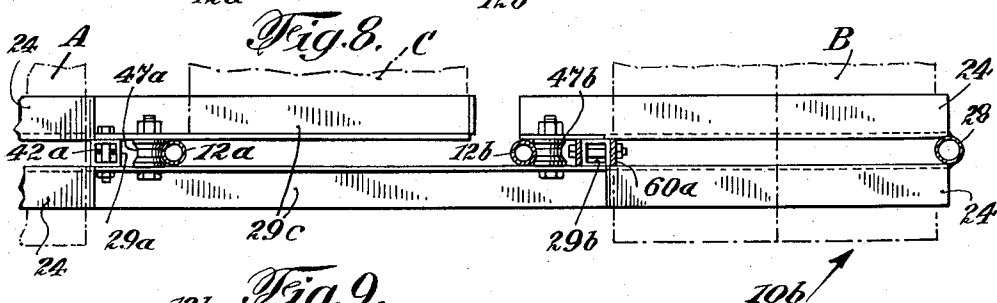
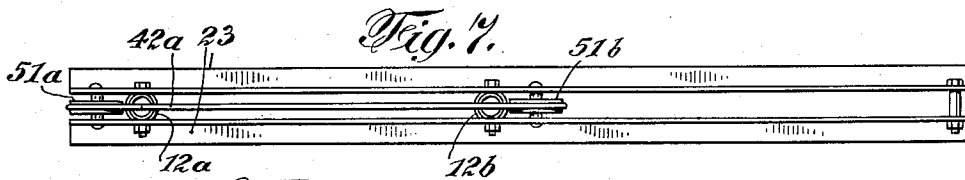
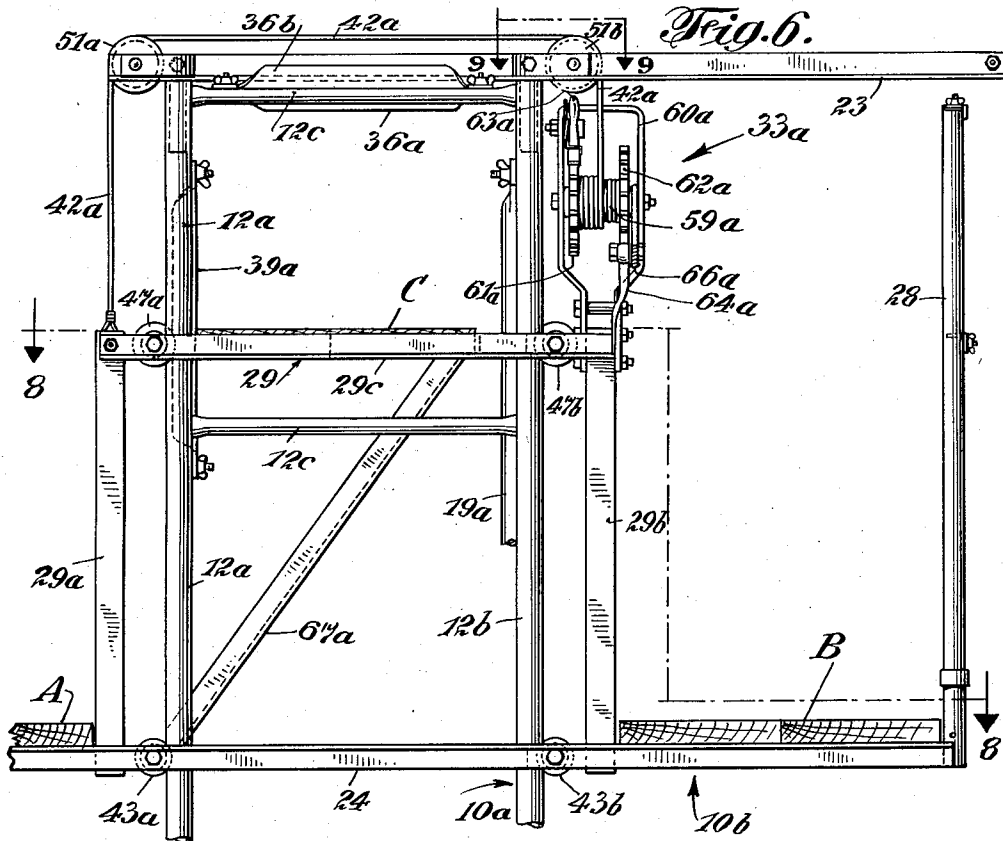
V. W. MENG ET AL

2,904,126

MULTIPLATFORM SCAFFOLDS

Filed Dec. 27, 1955

3 Sheets-Sheet 3



INVENTORS
Victor W. Meng and
Arthur C. Borgman
BY C. P. Jaepel
their ATTORNEY

1

2,904,126

MULTIPLATFORM SCAFFOLDS

Victor W. Meng, Garden City, and Arthur C. Borgman, Franklin Square, N.Y., assignors to The Patent Scaffolding Co., Inc., Long Island City, N.Y., a corporation of New York

Application December 27, 1955, Serial No. 555,424

1 Claim. (Cl. 182-103)

This invention relates to scaffolds, and more particularly to a multiplatform structure of this character adapted for use by bricklayers, masons and other construction workers above the ground.

The invention provides a scaffold with a plurality of platforms movable freely along a vertical frame to any desired level.

The invention also provides a multiplatform structure of the character referred to with one platform raised above the level of the other platforms.

The invention further provides a multiplatform structure which may be readily disassembled and erected at a different location.

Still further, the invention provides a multiplatform structure which may be added to existing conventional scaffolds.

Yet further, the invention provides a multiplatform structure which will reduce the time and effort for construction workers.

The scaffold of the present invention consists essentially of a plurality of uprights which are suitably spaced and transversely and longitudinally joined by a number of horizontal and inclined braces to form parallel rows of vertical ladders, a base support for the ladders, and a multiplatform frame which is vertically slidable along the uprights of said ladders, with one platform raised above the level of the remaining platforms. The frame carries a plurality of winches for raising or lowering the platforms to a desired level.

Other objects, features and advantages of the novel structure will become apparent in the course of the following detailed description of a preferred embodiment which is illustrated in the accompanying drawing, and and the invention will be finally pointed out in the appended claim.

In the drawing, wherein similar characters of reference indicate similar elements,

Fig. 1 is a perspective illustration of the elevating multiplatform scaffold with the bricklayer's platform closest to the wall structure;

Fig. 2 is an end view of the scaffold, as seen from the left in Fig. 1;

Fig. 3 illustrates a pair of modified vertically adjustable scaffold legs;

Fig. 4 is a view of a detached ladder forming one composite upright member of the stationary elevating scaffold frame;

Fig. 5 is a detailed illustration of one of the winches shown in Figs. 1 and 2;

Fig. 6 is an enlarged view of the upper end of the elevating scaffold, with the multiplatform frame in its uppermost position;

Fig. 7 is a top plan view of the hoist arm;

Fig. 8 is a section taken on line 8-8 in Fig. 6; and

Fig. 9 is an enlarged detail view of one of the upper sheaves, as viewed in the direction of arrows on line 9-9 in Fig. 6.

2

Referring now in detail to the illustrated structure, and more particularly to Fig. 1, there is shown a three-unit elevating scaffold 10, having a stationary frame 10a including four base members 11a-d, four composite upright ladders 12-15, each consisting of respective uprights 12a-15a and 12b-15b, and horizontals 12c-15c, with cross braces 16a-18a and 16b-18b for connecting the base support members 11a-11d, diagonal braces 19a, 19b, 21a, 21b between upright ladders 12, 13, braces 20a, 20b, 22a, 22b between upright ladders 14, 15, and a hoist arm 23 attached to the top of ladder 15. The vertically movable frame 10b includes composite transverse horizontal base members 24-27, guard rail 28, four rigid structural members 29-32 integral with a corresponding one of base members 24-27 of frame 10b, each of said structural members having a pair of verticals 29a-32a and 29b-32b, and horizontals 29c-32c, each of said horizontals consisting of a pair of L-shaped members for supporting the ends of planks forming the platform C. Platforms A and B are supported on horizontal base members 24-27. Four winches generally indicated by numerals 33a-d are rigidly attached to verticals 29b-32b. These winches, in cooperation with various sheave wheels attached to the stationary frame 10a and to the movable frame 10b, respectively, cause the frame 10b to ascend or descend along the stationary frame 10a into a position most suitable for, say, a bricklayer standing on platform A to pick up bricks stacked on platform C and continue with the construction of wall D, as shown in Fig. 1. The platform tender or tenders standing on platform B are in charge of supplying the necessary materials for the bricklayers onto platform C, and also operate the rope 35 over pulley 34 on hoist arm 23 by means of which the supplies are lifted from the ground.

The lowermost positions A', B', C' of the platforms A, B, C are indicated in Fig. 1 in dotted lines.

Additional reinforcing and connecting braces 36a-41a and 36b-41b are provided in the proximity of the upper ends of members 12-15. It will be noted that all braces with the exception of braces 19a-22a and 19b-22b are so connected as not to impede the movable frame 10b when the latter slides along the members 12-15, suspended on cables 42a-d, each cable having one end anchored in one of the respective cable drums 59a-d of winches 33a-d (see Figs. 2 and 6), and the other end attached to the junction of respective upright and horizontal members 29a-32a and 29c-32c. Each of members 24-27 also consists of a pair of spaced parallel beams, such as L-beams, with sheaves 43a-46a and 43b-46b rotatably supported therebetween to slide along respective uprights 12a-15a and 12b-15b. As stated, horizontals 29c-32c similarly consist of pairs of spaced parallel members with sheaves 47a-50a and 47b-50b therebetween to slide along the same uprights 12a-15a and 12b-15b. Cables 42a-d pass over pulleys 51a-54a and 51b-54b attached to the upper ends of uprights 12a-15a and 12b-15b.

As better seen in Figs. 2 and 4, braces 16-18, 19-22 and 36-41 are attached to uprights 12a-15a and 12b-15b by wing nuts 55a screwed onto bolts 55 but, obviously, any other suitable brace lock may be employed.

In Figs. 1 and 2, base members 11a-d consist of transverse horizontal I-beams supported on a pair of short units of the same contour, and each one of uprights 12a-15a and 12b-15b is provided with a bore 56 for reception of studs 57, the latter being integral with bases 11a-d and held in respective bores by cotter pins 58 or the like.

Fig. 3 illustrates an adjustable base for the uprights 12a-15a and 12b-15b in the form of vertically retract-

tive or projectable legs including base members 111, externally threaded inner leg members 157 and rings 158 which are provided with internally threaded nuts meshing with the external threads on members 157 to move the same into or out of the bores 156 in the respective uprights. Caster wheels may replace blocks 111 to permit short-distance transportation of the erected scaffold 10.

Winches 33a-d may be of any conventional construction, such as shown for example in Figs. 2 and 5. As illustrated, winch 33a includes a cable drum 59a rotatably supported in frame 60a of inverted U-shape and securely connected to the upright member 29b. A pair of ratchets 61a, 62a cooperate with pawls 63a, 64a, and a crank 66a is provided to operate the winch by rotating the drum 59a after the selected ones of pawls 63a, 64a either engage or release ratchets 61a, 62a.

As illustrated in Figs. 6 and 8, one parallel beam of the member 29c is interrupted in the proximity of upright 12b to permit the passage of the ends of diagonal braces 19a, 19b and 21a, 21b therethrough. A reinforcing diagonal beam 67a is shown in Fig. 6 to support the platform C.

While the hoist arm is shown at the right hand end of the multiplatform scaffold, it may be attached to any of the ladders 12, 13, 14 or at both ends of the scaffold.

The planks forming platforms A and B need not be of a predetermined length since these platforms are outside of the scaffold structure at all times. However, the planks of the platform C are cut to size to fit between the respective L-members of horizontal supports 29c-32c, whereby the horizontals 12c-15c and uprights 12a-15a and 12b-15b are free to move between the spaced elements 29c-32c. When the structure is mounted on casters, it is simply pushed along the wall, whereas a lengthy transportation requires dismantling of the scaffold.

It is believed that a center platform C lifted about 30 inches above the level platforms A and B will be most convenient to the workers standing on the outer platform A.

The scaffold shown in Fig. 1 is open at its side facing the wall D so that the construction worker is free to reach for materials on platform C irrespective of the position of frame 10b. The structure is rigidly connected by braces 16-18, 36-38, 39-41 and 19-22, which simplifies the construction of the slidable frame 10b since slots must be provided therein for passage of braces 19-22 only, braces 39-41 being above the uppermost level of the platform frame 10b (see Fig. 6).

It will be seen that we have provided a novel structure which consists of a stationary multi-unit, preferably collapsible scaffold and a multiplatform frame which is vertically slidable along the scaffold uprights, with one or more of the platforms at different levels. The platform frame and the scaffold are so constructed that a free movement is possible while one of the platforms is within the scaffold frame. By providing vertically adjustable legs and caster wheels at the lower ends of the uprights, the structure is adjustable on uneven ground and transportable along the building under construction or repair.

All the elements of the stationary scaffold and the slidable frame are so constructed and connected as to be easily and quickly disassembled for transportation or storage. The scaffold frame may consist of collapsible units which may be superimposed in a well known manner as is customary with elevated scaffolds.

Several changes and modifications may occur to persons skilled in the art within the spirit of this invention, and we therefore do not desire to be limited to the exact details of the device shown and described, but only by the scope of the appended claim.

We claim:

In combination: two aligned rectangular sectional scaffolds each comprising two spaced parallel ladders, each ladder consisting of two interconnected uprights and each having an inner side and an outer side, means for connecting the upper and lower ends, respectively, of the ladders in each scaffold, and braces for connecting one upright of one ladder with the aligned upright of the other ladder at one side of each scaffold, the other side of each scaffold being open; means for interconnecting the upper and the lower ends of adjacent ladders of the scaffolds with the outer sides of said ladders facing each other whereby said scaffolds form an aligned unit having an open side and a second side parallel with said open side which latter is open only between said scaffolds; a platform supporting frame comprising a horizontal support adjacent to the other side of and extending transversely beyond each ladder, an inner and outer plank support connected to and disposed above the level of each horizontal support, said inner and said outer plank supports being parallel with and spaced from each other for permitting the passage of a ladder therebetween, each inner plank support extending inwardly from the open side of each scaffold and short of said second side, the assembly of each horizontal support and an inner and an outer plank support connected therewith constituting a rigid unit movable in vertical directions along one of said ladders; a first platform on said horizontal supports adjacent to the open sides of said scaffolds; a second platform on said horizontal supports adjacent to said second side; a plurality of horizontal platforms above the levels of said first and said second platforms and each extending between adjacent pairs of inner and outer plank supports, respectively; and means for moving the horizontal supports along said ladders.

References Cited in the file of this patent

UNITED STATES PATENTS

378,810	Strout	Feb. 28, 1888
554,024	Gilbreth	Feb. 4, 1896
588,982	Gray	Aug. 31, 1897
657,396	Curley	Sept. 4, 1900
771,878	Laughlin	Oct. 11, 1904
1,168,868	Ericsson	Jan. 18, 1916
2,790,684	Sprinkel	Apr. 30, 1957

FOREIGN PATENTS

15,346	Great Britain	Dec. 21, 1914
--------	---------------	---------------