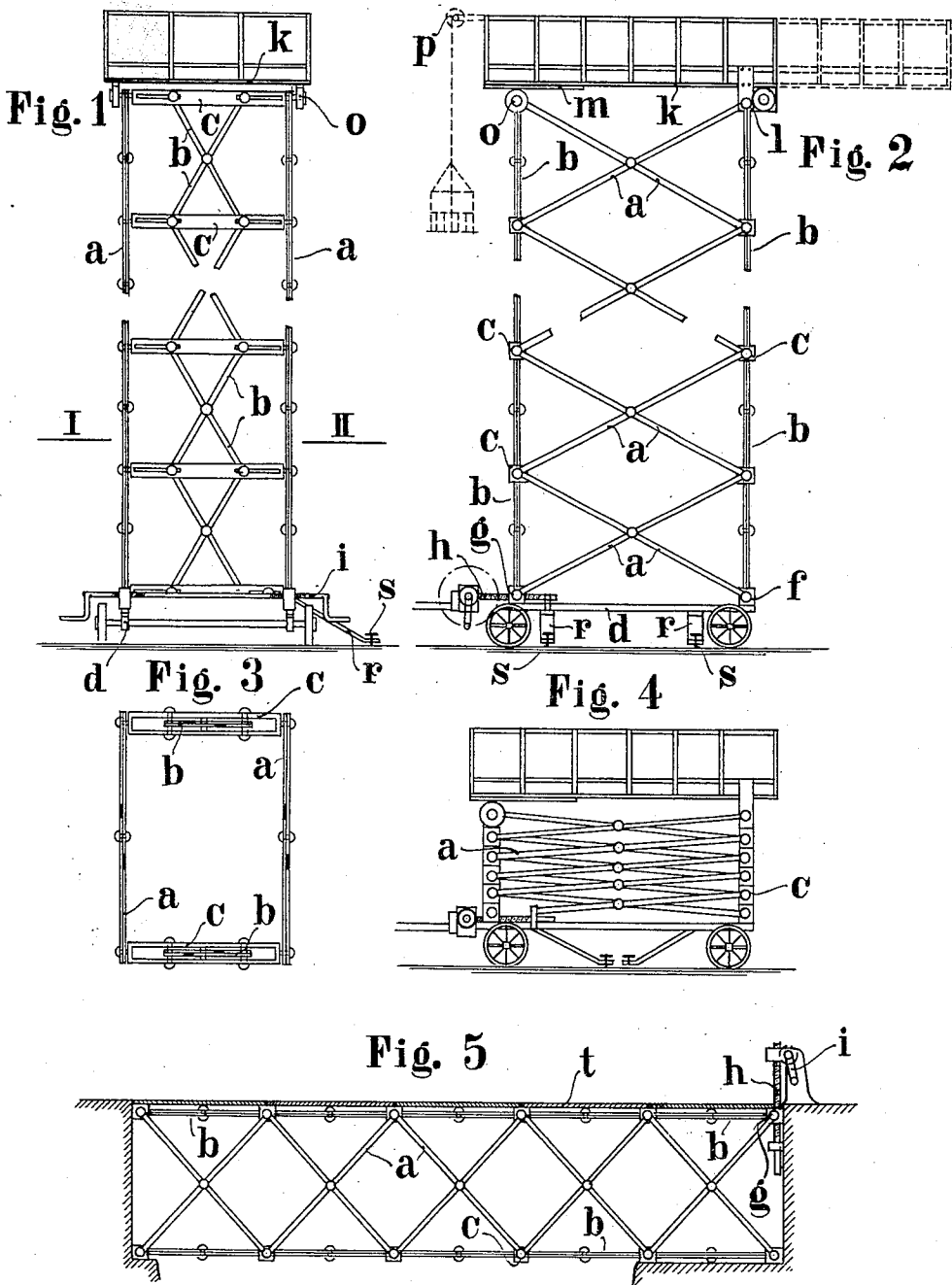


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 COLLAPSIBLE SCAFFOLDING AND LIKE STRUCTURE.
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COLLAPSIBLE SCAFFOLDING AND LIKE STRUCTURE.

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To all whom it may concern:

Be it known that I, GUSTAV SISTERMANN, subject of the German Emperor, residing at Titusstrasse 14, Cologne, Germany, have invented certain new and useful Improvements in Collapsible Scaffolding and Like Structures, of which the following is a specification.

It has already been frequently proposed to employ the so called lazy tongs in the construction of collapsible scaffolding or structures, such as fire-escapes. These structures, however, when in the erect or open condition have been very weak, as regards lateral stresses, and consequently they have been so liable to bend and sway that they do not offer sufficient stability, or a sufficiently firm stand, to carry or support any but comparatively light loads. For this reason the use of such known structures in a horizontal position, for instance, as a bridge support, was impracticable.

The object of the present invention is to avoid these defects peculiar to the old type of lazy-tong structures, so as to enable such structures to be used effectively either in the vertical or horizontal position, for example, as a tower or as a bridge.

With this object in view the structure, according to the invention, comprises two main sets of lazy tongs arranged opposite to one another in substantially parallel planes, two other or auxiliary sets of lazy tongs arranged opposite to one another and in planes at right angles to those of the main tongs, and means, connecting the outer pivots of the main tongs on one side to the outer pivots of the main tongs on the other side, in such a manner as to impart strength or rigidity to, and form ties or guides for, the auxiliary tongs, whereby all four sets of tongs are adapted to form a single self-contained extensible carrier capable of being used effectively in a vertical or horizontal position.

When in the form of an upright scaffolding or carrier the structure may support a platform and can therefore be used as a scaffolding for erecting and fitting purposes. When used in this form the collapsible scaffolding can be employed as a tower by fire brigades for extinguishing fires, as well as for life saving purposes; further, it may be used by military authorities as a look-out tower, a wireless telegraphy station, and for purposes of defense. It

may be used for very many purposes. When arranged horizontally the structure may be used with advantage as a bridge support for carrying an extensible bridge, for owing to the combination of the four sets of tongs arranged at right angles, it forms a carrier of great carrying capacity and great lateral strength, inasmuch as it cannot bend transversely.

Two forms of the invention are shown in the accompanying drawings by way of example.

Figures 1 to 4 illustrate the structure arranged vertically for carrying a platform. Fig. 1 is a front elevation illustrating the structure in an erected or open condition. Fig. 2 is a side elevation illustrating the structure in an open condition. Fig. 3 is a sectional plan of the structure on the line I—II of Fig. 1, while Fig. 4 is a side elevation of the structure in a collapsed condition. Fig. 5 is a side elevation illustrating a structure according to the invention when used as a bridge support.

In the forms of the invention illustrated in the drawings the structure consists of two main sets of tongs *a*, and two sets of side or auxiliary tongs *b*, serving for strengthening or stiffening purposes. The side tongs *b*, are guided in frames *c*, which connect the outer pivots of the main tongs *a*, so that the four sets of tongs form a single self-contained and extensible support or carrier, and the collapsible structure thus produced possesses great stability and resistance to lateral bending stresses. In the form shown in Figs. 1 to 4 the collapsible structure is arranged on a car *d*. The rear limbs of the lowermost main tongs *a*, are firmly but pivotally attached to the car, while the front limbs of the same tongs *a*, are pivotally secured to a slide *g*, which is moved by means of traversing screws *h*, adapted to be rotated by suitable handles through the intermediary of suitable driving gear, such as a worm *i*, engaging worm wheels on the screws *h*, whereby the structure is elevated or collapsed in known manner. The structure is provided on the top with a platform *k*, which is connected to it at one end at *l*, in a firm but pivotal manner, while at the other end the said platform is fitted with guide rails *m*, bearing on the anti-friction wheels or rollers *o*, arranged on the structure itself. The platform *k*, may of course be of any suitable shape depending upon the

use to which it is applied. It may form an inclosure or chamber and be constructed as a receptacle. In the example illustrated in Fig. 2, the platform is shown provided with a winch *p*, for raising and lowering goods. In order to insure a firm stand for the structure the car may be provided with arms *r*, fitted with screws *s*, adapted to be fixed in the ground.

Fig. 5 illustrates a form of the invention intended for use as a bridge support, similar parts being correspondingly lettered to the form illustrated in Figs. 1 to 4. The structure in this form can be extended or contracted by worm gear and screws and it is provided with a covering or floor *t*, which may be caused to separate into sections adapted to slide upon each other during the extension or contraction of the structure. It is of course obvious that the construction of the bridge may be of any suitable type in every other respect.

I claim:—

1. A collapsible structure comprising two opposed sets of main lazy tongs, each set consisting of a plurality of bars pivoted together at their ends and centers, two opposed sets of auxiliary lazy tongs arranged at right angles to the two sets of main lazy tongs, each set of auxiliary lazy tongs consisting of a plurality of bars pivoted together at their ends and at their centers, a series of yokes through which the auxiliary sets of lazy tongs operate, each yoke having slots, the pivots which fasten the ends of the bars of the main sets of lazy tongs extending from the ends of said yoke, and the

pivots fastening the ends of the auxiliary tongs operating in the slots in said yokes, and means for operating the lazy tongs.

2. A collapsible structure comprising two opposed sets of main lazy tongs, each set consisting of a plurality of bars pivoted together at their ends and centers two opposed sets of auxiliary lazy tongs arranged at right angles to the two sets of main lazy tongs, each set of auxiliary lazy tongs consisting of a plurality of bars pivoted together at their ends and at their centers, a series of yokes through which the auxiliary sets of lazy tongs operate, each yoke having slots the pivots which fasten the ends of the bars of the main sets of lazy tongs extending from the ends of said yoke, and the pivots fastening the ends of the auxiliary tongs operating in the slots in said yokes, means for contracting and expanding the lazy tongs, rollers on the pivots extending from the ends of one of the yokes, a platform on top of the collapsible structure, a pivotal connection between the platform and the yoke adjacent the yoke carrying the rollers, tracks on the underside of the platform and against which the rollers bear, wheels supporting the collapsible structure, and means for securing the structure to a supporting surface.

In testimony whereof I affix my signature in presence of two witnesses.

GUSTAV SISTERMANN.

Witnesses:

LOUIS VANDORY,
GERTRUD BONA.