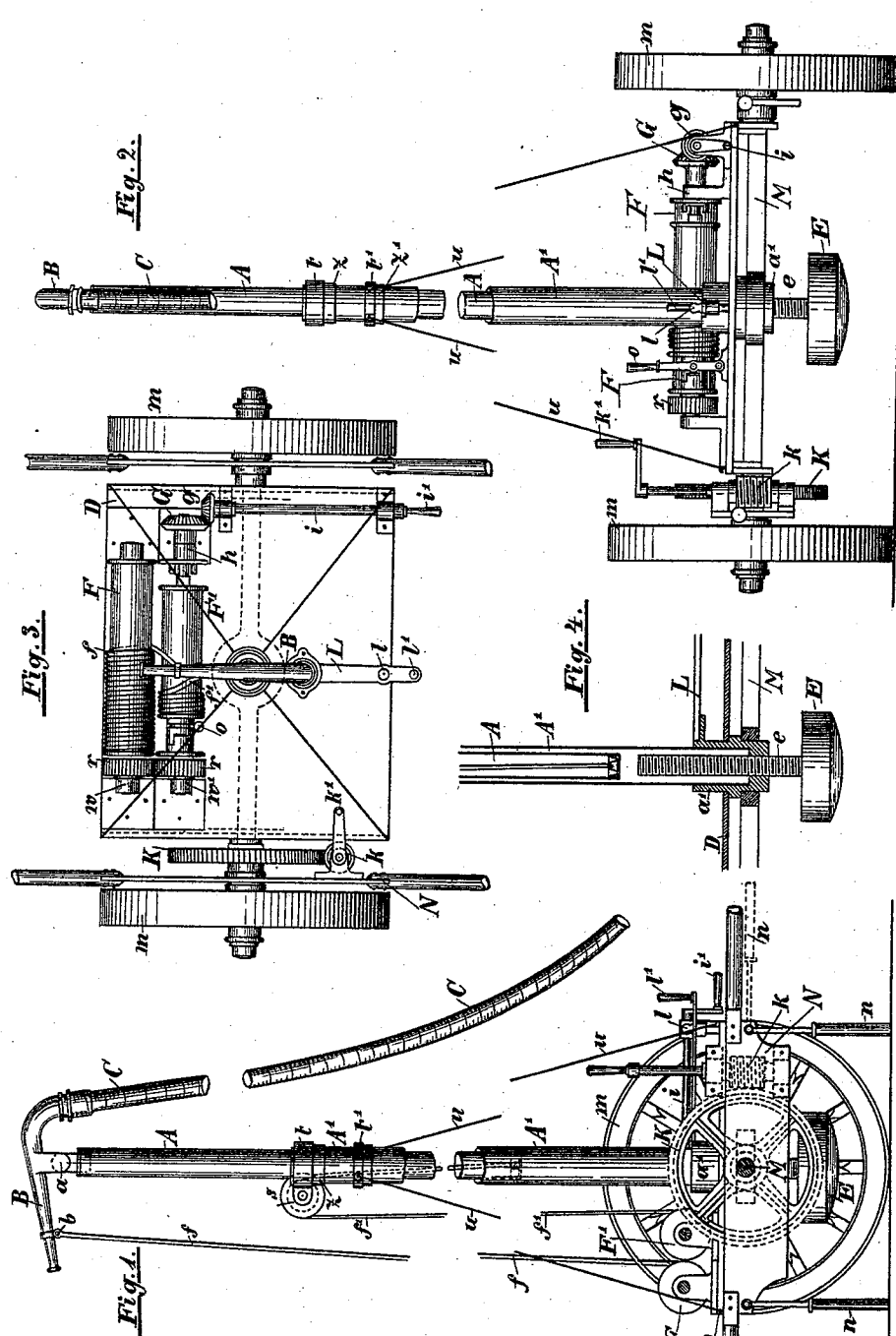


(No Model.)

A. L. GAISER.
FIRE EXTINGUISHING APPARATUS.

No. 530,834.

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UNITED STATES PATENT OFFICE.

AUGUST LEOPOLD GAISER, OF WÜRTEMBERG, GERMANY.

FIRE-EXTINGUISHING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 530,834, dated December 11, 1894.

Application filed January 24, 1894. Serial No. 497,922. (No model.)

To all whom it may concern:

Be it known that I, AUGUST LEOPOLD GAISER, chief master of the Waffenfabrik Mauser, in Oberndorf, Würtemberg, Germany, have
5 invented a new and useful Fire-Extinguishing Apparatus, (for which I have obtained a patent in no country,) of which the following is a specification.

My invention relates to apparatus whereby
10 the nozzle-pipe of fire-engines may be directed from the ground to burning buildings and the like, in all directions and at varying heights.

The object of the present invention is to approach the hose of a fire-engine and its nozzle
15 as near as possible to the burning object, without danger, in cases of fire and conflagrations, and to raise the nozzle to any desired height and to point the same in all directions from the ground, as conveniently and
20 accurately as though the fireman stood upon a ladder and manipulated the nozzle-pipe by hand.

For this purpose, my invention consists in the means, details of construction, and combinations of parts hereinafter described and
25 pointed out in the claims.

An apparatus embodying the invention is represented in the accompanying drawings, in which—

30 Figure 1 represents a side elevation; Fig. 2, a front elevation, and Fig. 3, a top plan of the said apparatus, while Fig. 4 represents a partial section through the lower part of the nozzle-pipe carrier, which, in the drawings, is
35 represented as consisting of two telescopic tubes, but which may, manifestly, be made of three or more tubes, instead of two, or of carriers otherwise constructed.

The nozzle-pipe, B, is journaled in a head,
40 a, of the inner carrier-tube or mast, A, and is attached, at one end, to the hose, C, while a line or rope, f, is attached to the same near its nozzle, the said line running over the pulley, F, and serving to adjust the position of
45 the nozzle-pipe in a vertical direction. The inner carrier-tube or mast, A, is held within the outer carrier-tube, A', by means of the line or rope, f', and may be raised or lowered within the same, by means of the pulley, F',
50 the line or rope, f', being secured to the bot-

tom of the mast or tube, A, and running over a guide-pulley, s, secured to the upper part of the mast, A', the said rope running thence to the traction pulley, F'.

The vertical adjustment of the inner mast, 55 A, as well as of the nozzle-pipe, B, is affected, by the elevating device common to both the pulleys, F and F'. These pulleys, F and F', which are of equal diameter, are actuated by means of the crank, i', the shaft, i, and the
60 beveled cogs, G g, in the following manner: When it is desired to raise the nozzle-pipe to a different height, the two cog-wheels, r and r', cause the two windlasses, F and F', to revolve, i. e., the one rope or cord, f', elevates
65 the carrier-tube, A, while, at the same time, an equal length of the rope, f, is unwound from the windlass or drum, F, so that the direction of the nozzle-pipe remains unchanged in changing its height. When the nozzle-pipe
70 has attained the desired height, the drum or windlass, F', which is loose upon the shaft, w', is longitudinally shifted, by means of the shipping lever, o, thus disengaging the clutch-coupling which connects it, with the cog-
75 wheel, r', and causing it to engage the fixed coupling, h, on the journal bearing, whereby the said drum, F', is held fast. If the rotation of the beveled cogs, G and g, now continues, the drum, F', remains at rest, while the drum, 80 F, continues to revolve, thereby adjusting the nozzle-pipe in a vertical plane, by means of the rope, f, secured to the ring, b, on the said nozzle-pipe.

The horizontal rotation of the nozzle-pipe, 85 B, is effected by rotating the tubes, A, A', by means of a lever, L, made fast to the journal-box, a', and provided with a handle, l', for grasping the same. A spring adjusting pin, l, is mounted in the lever, L, the said spring
90 pin bearing, in a well-known manner, against the plate, D, upon which the apparatus is mounted, thereby holding the lever, L, in position. If desired, small recesses, for engaging the detent pin, l, may be provided in the
95 plate, D. The plate or platform, D, together with the masts or tubes, A and A', and the adjusting device, are all mounted upon the axle, M, which, in turn, rests upon the two
100 wheels, m, m.

It is manifest that the apparatus can not be transported when in a vertical position, even when the mast or tube, A, is not extended, for, even in this condition, the apparatus attains a height of from 7.5 to ten meters. It is hence necessary to make the apparatus collapsible, so that the masts may be folded into a horizontal position.

The elevation and lowering of the masts or tubes, A and A', is carried out by the following means: Two frames, N, are swiveled on the hubs of the wheels, *m*, the said frames, when it is desired to put the apparatus into operating position, being held stationary, so that the wheels, *m*, together with the frames, N, are fixed, by means of the props, *n*, which are made adjustable longitudinally, by means of screws. One of the frames, N, has a worm or endless screw, *k*, journaled therein, the said worm being actuated by the crank, *a'*. This worm, *k*, engages with a worm-wheel, K, keyed to the axle, M, so that by turning the crank, *k'*, the worm-wheel, K, is rotated. Inasmuch as the wheels, *m*, and the frames, N, are held stationary, this rotation of the worm-wheel results in the rotation of the axle, M, and the platform, D, fixed to the same, together with the masts, A, A', this rotation being continued until the masts have been swung into a vertical or any other position. To facilitate the elevation, as well as the lowering, of the apparatus, a counter-weight, E, is adjustably secured to the journal-box, *a'*, of the masts, A', by means of a threaded stem, *e*.

The supporting-tube or mast, A', is laterally braced by means of strong wires or cables, *u*, attached to the platform, D. In order to enable the mast, A', to be rotated by means of the lever, L, without disturbing or moving the platform, D, in cases where the carriage is fixed, a ring, *v'*, to which the brace-wires, *u*, are secured, loosely encircles the mast, A', bearing against a fixed ring, *z'*, secured to the mast, A', below the same. For a similar purpose, *i. e.*, to prevent the rotation of the pulleys, *s*, on rotating the masts by means of the lever, L, its journal-support, *t*, also loosely encircles the mast, A', being supported by a fixed ring, *b*, secured to the said mast below the same.

In order to draw the water in the hose, C, from the same, after the work has been completed, and before the masts have been telescoped and lowered, a three-way cock or a valve is applied to the said hose at a proper point, so that, by opening the same, the water will flow out, and the hose will be completely emptied.

In order to relieve the worm-wheels and the worms of the pressure, on lowering the masts, a suitable supporting-truck may be provided, upon which the said masts are caused to rest with their free ends.

As already stated in the beginning, three or more telescopic masts or supporting-tubes, or, in some cases, only one fixed mast may be employed, in lieu of two telescopic masts. I may, moreover, substitute a solid wooden pole or the like for the hollow upper mast, without thus departing from the essence of my invention.

What I claim, and desire to secure by Letters Patent, is—

1. In a fire-extinguishing apparatus, the combination, with a pair of wheels, an axle on which the wheels are mounted, and a frame swiveled on the wheels, of a worm-wheel fixed on the axle, a worm-gear mounted on the frame and meshing with the worm-wheel, a mast carried by the axle, and means for holding the frame substantially horizontal.

2. In a fire-extinguishing apparatus, the combination, with a pair of wheels, an axle on which the wheels are mounted, and a frame swiveled on the wheels, of a worm-wheel fixed on the axle, a worm-gear mounted on the frame and meshing with the worm-wheel, a platform fixed on the axle, a mast mounted on the axle at right angles to the platform, and a lever fixed to the mast and movable over the platform, substantially as set forth.

3. In a fire-extinguishing apparatus, the combination, with a pair of revoluble drum shafts, and means for simultaneously rotating both shafts, of a drum fixed on one shaft, a drum loose on the other shaft, a clutch member at each end of the latter drum, a fixed clutch-member, a clutch member attached to the latter drum shaft, and means for shifting the latter drum, so as to engage one or the other of its clutch members with their respective corresponding clutch members, whereby said latter drum is either locked to its drum shaft or held stationary by the fixed clutch member, substantially as set forth.

4. In a fire-extinguishing apparatus, the combination, with an axle having a central opening, and a mast stepped in said opening, of means for rotating said mast, and means for rotating the axle, substantially as set forth.

5. In a fire-extinguishing apparatus, the combination, with a telescopic mast, of a collar fixed to one of the mast sections, a loose collar above the said fixed collar, a pulley revolubly mounted on the loose collar, and a cable passing over the pulley and connected to one of the mast sections, substantially as set forth.

In testimony whereof I have signed this specification in the presence of two subscribing witnesses.

AUGUST LEOPOLD GAISER.

Witnesses:

AUGUST B. DRAUTZ,
ARTHUR HOFMANN.