M. G. FIELD.

APPARATUS FOR CONSTRUCTING SEWERS, &c.

No. 194,233. Patented Aug. 14, 1877.

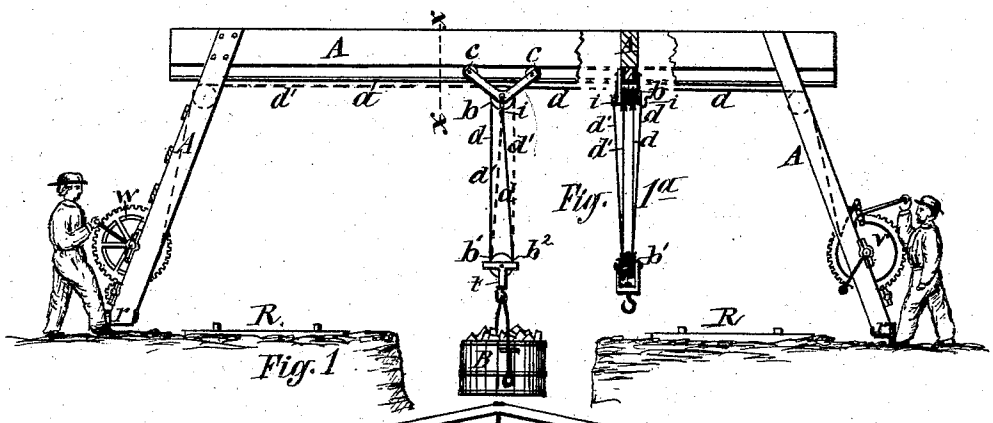


Fig. 1

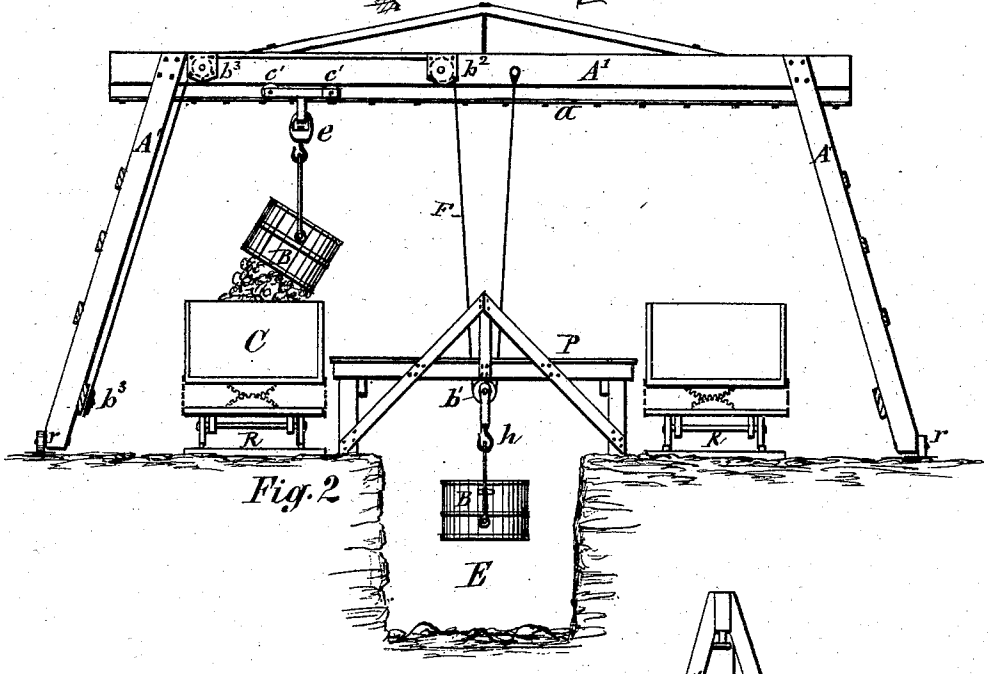


Fig. 2

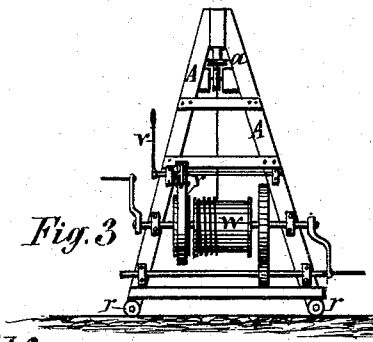


Fig. 3

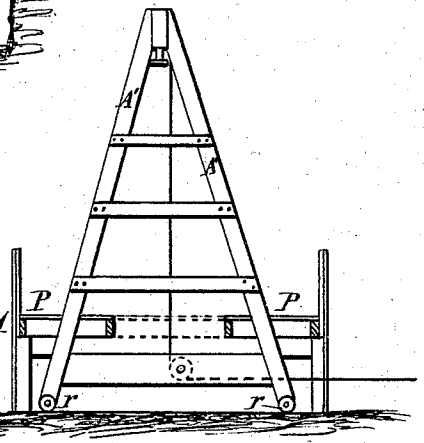


Fig. 4

Witnesses:

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E. Bendixen

Inventor:

Mason G. Field

per E. Laass Atty.

N. PETERS, PHOTO-LITHOGRAPHER, WASHINGTON, D. C.

UNITED STATES PATENT OFFICE.

MASON G. FIELD, OF SYRACUSE, NEW YORK, ASSIGNOR OF ONE-HALF OF HIS RIGHT TO JAMES FINEGAN, OF SAME PLACE.

IMPROVEMENT IN APPARATUS FOR CONSTRUCTING SEWERS, &c.

Specification forming part of Letters Patent No. **194,233**, dated August 14, 1877; application filed March 28, 1877.

To all whom it may concern:

Be it known that I, MASON G. FIELD, of the city of Syracuse, in the county of Onondaga, in the State of New York, have invented a new and useful Improvement in Apparatus for Constructing Sewers and other Underground Structures, of which the following, taken in connection with the accompanying drawing, is a full, clear, and exact description.

This invention consists in a novel construction, combination, and arrangement of devices whereby the construction of sewers and other underground structures is greatly expedited and facilitated, and the cost thereof materially diminished.

The invention is clearly illustrated in the accompanying drawing, wherein Figure 1 is a front view of the apparatus for delivering the building material to the workmen in the pit. Fig. 1ª is a transverse section on line *x x* of Fig. 1; Fig. 2, a front view of the apparatus for elevating and removing the excavated material from the pit; and Figs. 3 and 4 are end views, respectively, of the two apparatuses, showing them as arranged relative to each other when in operation.

Similar letters of reference indicate corresponding parts.

A A′ are trestles or horses, properly braced and of sufficient length to span the excavation E and the railway-tracks R at the side thereof. They are placed astride the same and mounted on wheels or rollers *r*, attached to the foot of their posts, so as to allow them to be readily moved as the work progresses. Their top beam or stringer is properly trussed, to prevent its deflection at the center when subjected to strain, and provided with a double track, *a*, extending the length of the bent.

To carry on the work expeditiously and advantageously it generally requires a series of these trestles, arranged in two sets—one set constituting the apparatus for elevating and removing the excavated material from the pit, as illustrated in Figs. 2 and 4 of the drawing, and the second set the apparatus for delivering the building material to the workmen in the pit, as represented in Figs. 1 and 3 of the drawing. The trestles A′ of the first set have connected with their top beam a loose block, b^1, and a stationary pulley, b^2, directly over the excavation E, and, near the end of the beam and foot of the posts, pulleys b^3, for connecting the pulley-rope *d* with horse or other power. The loose block b^1 is provided with a hook, *h*, by which it carries the bucket B. When the bucket is raised to a proper height it is attached to a swivel-hook, *e*, pendent from the carriage *c′*, and then detached from the loose block b^1 and moved by the carriage *c*, which traverses the track *a* on the top beam, to the place of deposit, and dumped.

To still further facilitate and expedite the construction and completion of the work, the railway-tracks R R are laid alongside the excavation, and a platform, P, placed astride the latter, to enable the workmen to dump the excavated material into cars C on the track R, as illustrated in Fig. 2 of the drawing. The material can be conveyed in these cars to the place where the underground structure is complete, and dumped upon the same, thus completing the work as it advances and avoiding the obstructions to streets occasioned by dumping the material by the side of the excavation, as has been customary heretofore, and at the same time saving the extra expense of refilling the excavation.

The trestles A of the second set are provided with simple, convenient, and effective devices, ingeniously arranged for delivering the building material to the workmen in the pit. To a carriage, *c*, on the track *a*, before described, are pivoted two pulleys, *b*, and a loose tackle-block, *t*, is likewise provided with two pulleys, b^1. Two separate and distinct lines, *d d′*, are each attached at one end to a hook, *i*, on opposite sides of the carriage-frame, and passed in opposite directions to each other around the pulleys of the loose block *t*, then carried over the pulleys on the carriage-frame, and extended to opposite ends of the trestle, where they are connected with the windlass *w*.

This novel and ingenious combination and arrangement of the tackle-block, geared in opposite directions, and operated by two windlasses, as described, not only furnishes great hoisting power, but also provides means for moving the carriage *c* with its load along the track *a*, which latter is accomplished by wind-

ing up one line and giving out the other with sufficient tension to prevent the bucket B from settling, and allow it to be drawn to the side where the building material is to be obtained.

When the bucket is filled both windlasses are operated to raise the bucket to a proper height to clear all obstacles on the ground, then, by continuing to wind up the line at the opposite side of the pit E, and giving out the other line, as before described, the carriage *c*, with its load, is drawn along the track *a* until the bucket is brought over the pit, and is then lowered into the pit by releasing the windlasses and applying the brake *v*, as represented in Fig. 1 of the drawing.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is—

An apparatus for constructing sewers, consisting of the elevator A′, Fig. 2, composed of main frame, provided with wheels *r* and ways *a*, block b^1, provided with hook *h*, pulleys b^2 b^3 b^3, carriage *c′*, provided with pendent swivel-hook *e*, line F, and bucket B, and of the material lowerer A, Fig. 1, composed of main frame provided with wheels *r* and ways *a*, carriage *c*, provided with pulleys *b* and hooks *i*, block b^2, provided pulleys b^1, bucket B, lines *d d′*, windlasses *w*, and brakes *v*, all constructed and arranged substantially as shown and described, for the purposes specified.

In testimony whereof I have signed my name and affixed my seal in the presence of two attesting witnesses, at Syracuse, in the county of Onondaga and State of New York, this 9th day of February, 1877.

MASON G. FIELD. [L. S.]

Witnesses:
H. C. FIELD,
A. W. SMITH.