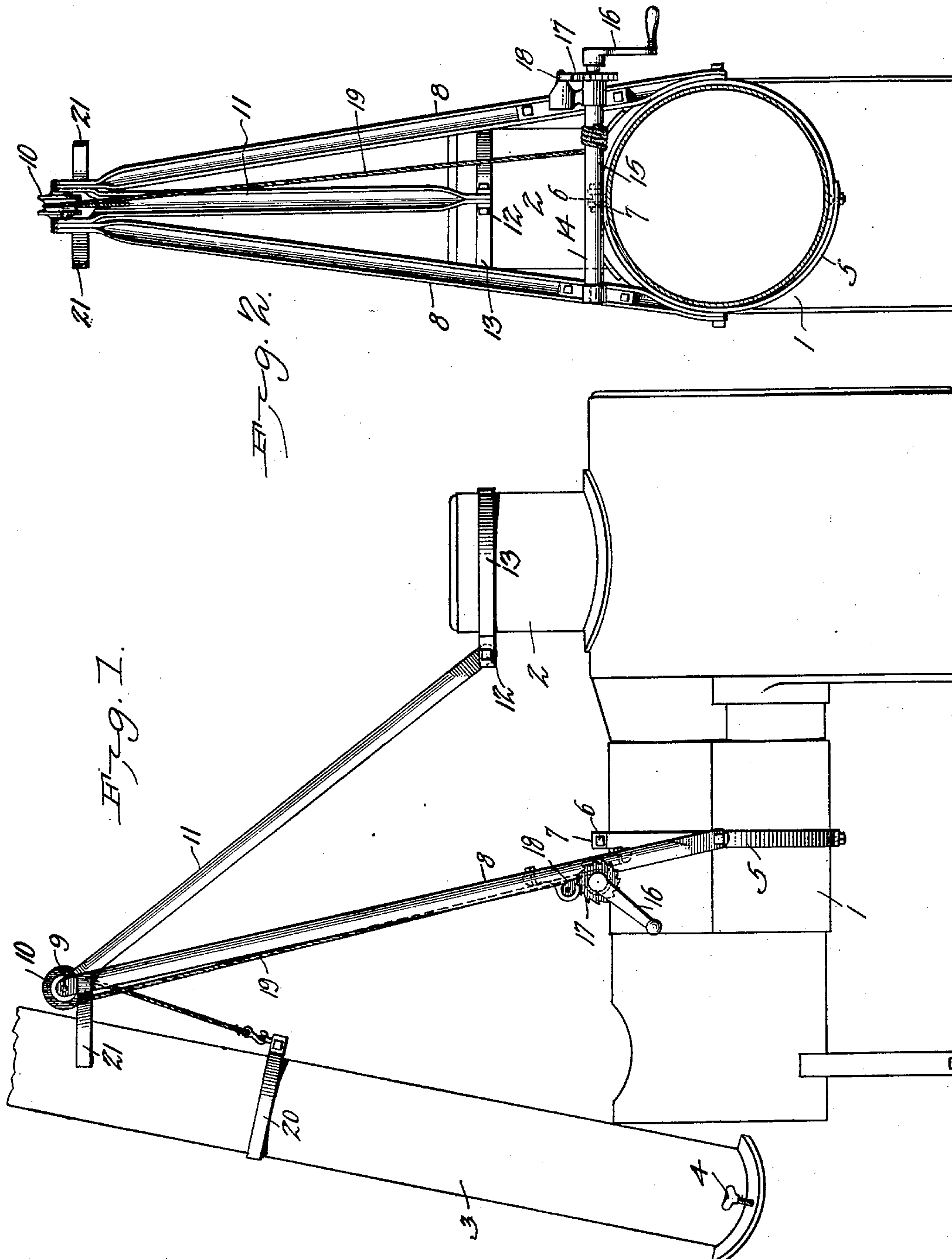


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PATENTED JUNE 16, 1903.

J. G. STEINER.
DERRICK FOR RAISING SMOKE STACKS.
APPLICATION FILED JAN. 20, 1903.

NO MODEL.



Witnesses
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UNITED STATES PATENT OFFICE.

JOHN G. STEINER, OF BLUFFTON, OHIO, ASSIGNOR OF ONE-HALF TO
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DERRICK FOR RAISING SMOKE-STACKS.

SPECIFICATION forming part of Letters Patent No. 731,079, dated June 16, 1903.

Application filed January 20, 1903. Serial No. 139,800. (No model.)

To all whom it may concern:

Be it known that I, JOHN G. STEINER, a citizen of the United States, residing at Bluffton, in the county of Allen and State of Ohio, have
5 invented a new and useful Derrick for Raising Smoke-Stacks, of which the following is a specification.

In oil-producing sections of the country considerable soft coal is used in boiler-furnaces,
10 and in many instances the oil itself is sprayed upon the fuel in the furnace, and the smoke and other products of combustion naturally resulting therefrom rapidly foul the boiler-stacks and necessitate frequent cleaning of
15 the same. In order to clean the stacks properly, it is necessary to lower them from the boiler and after cleaning to again raise them to position. This work as now performed usually requires the services of a number of
20 men to properly handle the stacks and at the same time entails considerable trouble. Also owing to the stacks having to be removed with such frequency from the boilers they cannot be secured permanently in position,
25 which fact further necessitates the use of guy-wires or the like for properly bracing and strengthening the stacks when in position upon the boilers.

My invention relates to a derrick for raising and lowering boiler-stacks, and has for
30 its objects to produce a device which will be comparatively simple of construction, efficient in operation, and inexpensive, and one which may be attached to the boiler and stack for raising and lowering the latter—thus obviating the difficulties above pointed out, which
35 are usually attendant upon such operation—and which will when the stack is in position on the boiler serve the purpose of properly bracing and strengthening the same, thus obviating the employment of guy-ropes or the like for this purpose.

The invention comprises the details of construction and combination of parts more fully
45 hereinafter described.

In the accompanying drawings, Figure 1 is a side elevation of a boiler having my invention applied thereto. Fig. 2 is a front sectional elevation of the same.

50 Referring to the drawings, 1 indicates a boiler of any suitable construction, but preferably

of the horizontal type, as herein shown, and provided with a steam-dome 2 and a stack 3, which is in accordance with my invention removably attached at its lower end
55 to the boiler by means of wing-nuts or the like 4.

5 indicates a clamping ring or band secured around the horizontal body portion of the boiler in any suitable manner, but preferably
60 by means of a tie-bolt 6, connecting the meeting flanged ends 7 of the band at the top of the boiler, which construction admits of the band being tightened from time to time, as circumstances may require. Secured to the
65 clamping-ring at the sides of the boiler and at points diametrically opposite by means of suitable stud-bolts are the lower ends of two normally vertical angle-iron bars or beams 8, which converge upwardly and are connected
70 at their upper ends by means of a suitable bolt or the like 9. These bars, which constitute the derrick proper, carry at their upper end a suitable pulley 10, which is journaled for rotation on the connecting-bolt 9. 75

11 indicates a brace-rod of angle-iron or the like, which is pivoted at its upper end upon the connecting-bolt 9 and at its lower end on a tie-bolt 12, which further serves to connect the ends of a clamping band or ring
80 13, which is mounted around the steam-dome 2 and is adjustable vertically up and down thereon for the purpose of changing the inclination of the derrick to meet certain conditions which may arise in the operation of
85 the device, as will be readily understood.

14 indicates a winch in the form of a horizontal drum 15, journaled at its ends for rotation in suitable bearings, bolted or otherwise secured to the angle-iron bars 8, which
90 constitute the derrick, the drum being provided with a suitable operating handle or crank 16 and a ratchet-wheel 17, engaged by a spring-actuated pawl 18, pivoted on a suitable horizontal stud or the like, projecting
95 from the side of the bearing block or casting and adapted to permit the drum being rotated in one direction by means of its operating-crank, but to engage the teeth of the ratchet-wheel and prevent rotation of the
100 drum in the opposite direction, as usual.

19 indicates a suitable cable, preferably of

wire or the like, connected at one end to the drum 15 and extending thence around the pulley 9 at the upper end of the derrick and having its other end attached in any suitable manner to a clamping ring or band 20, which is secured around the stack 3 and adapted for adjustment vertically up and down thereon for the purpose of properly balancing the stack during the raising and lowering operation.

21 indicates two horizontal arms secured by bolts or otherwise to the upper ends of the bars 8 and adapted to project therefrom at opposite sides of the stack in order to partially embrace and assist in sustaining and steadying the same during the raising and lowering operation.

In operation, supposing the stack to be in position on the boiler and secured thereto at its lower end by means of the wing-bolts 4, the cable will be fully wound upon the drum 15 and will be under suitable tension to insure the stack being properly braced and sustained by the derrick. With the parts in such position if it is desired to lower the stack for the purpose of cleaning or the like the wing-nuts are removed to release the lower end of the stack, and the winch is operated to slightly elevate the same and admit of the derrick swinging forward to move the stack clear of the front end of the boiler, when the winch may be actuated to lower the stack, as will be readily understood. In order to raise the stack, the winch is operated to raise the same and properly seat it in position, when the wing-bolts may be again screwed into place and the parts put under the proper bracing tension by slightly tightening the cable 19.

From the foregoing description it will be seen that I produce a device which is at once simple of construction and operation and one which is admirably adapted for the attainment of the ends in view, and it is to be understood that I do not limit or confine myself to the details herein shown and described, as various changes may be made therein without departing from the spirit or scope of my invention.

In practice the derrick may be permanently secured to the boiler, if so desired; but I prefer to so mount the same that it may be readily removed, if required by circumstances, and in order to provide for its ready removal I secure the shaft of the drum 15 by means of a suitable cotter-pin or the like to admit of its removal and employ the clamping rings

or bands herein described, which may be readily detached, as will be readily understood.

Having thus described my invention, what I claim is—

1. The combination with a boiler, of a stack removably secured thereto, a derrick sustained by the boiler, and connected with the stack for supporting the latter when in position upon the boiler, a winch carried by said derrick, operative connections between the winch and stack for raising and lowering the latter, and means for operating the winch.

2. The combination with a boiler, of a stack removably secured thereto, a derrick sustained by the boiler and connected with the stack for supporting the latter when in position upon the boiler, a winch carried by said derrick, a pulley also carried by the derrick, a cable connected to the winch and extending around said pulley and attached to the stack, and means for operating the winch.

3. The combination with a boiler, provided with a stack removably secured thereto, of a clamping-ring mounted on the boiler, a derrick pivoted at its lower end to said ring, means for bracing said derrick, a winch carried by the derrick, operative connections between the winch and stack for raising and lowering the latter, and means for operating the winch.

4. The combination with a boiler having a steam-dome, and provided with a stack removably secured to the boiler, of a clamping-ring mounted on the boiler, a derrick secured at its lower end to said ring, a clamping-ring mounted on the steam-dome, a brace carried thereby and connected to the upper end of the derrick, a winch carried by the derrick, operative connections between the winch and stack for raising and lowering the latter, and means for operating the winch.

5. The combination with a derrick, of a clamping-band connected thereto and adapted for attachment to a boiler, a brace-rod for said derrick having a clamping-ring adapted for attachment to the boiler, a winch carried by the derrick, a clamping-ring adapted for attachment to the boiler-stack, and operative connections between the latter and the winch.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in the presence of two witnesses.

JOHN G. STEINER.

Witnesses:

L. BLACK,
H. L. ROMNEY.