THOMAS R. SINCLAIRE.

Improvement in Boiler Fire Extinguishers.
FIG. 1. Patented Sep. 19, 1871. No. 119,190 bds bos. ban sil bioth best Bir birdhelm Latted John Gini Mariting of the Company of the Compa LOUD PROPERTY AND LABOUR OF THE SECOND OF TH Magnize Carlo barazanen 25. kan di b eller engly of the acidebrace projetion in the control of the control of the projet of and Miller of Late (San Albanya) aditi ingaatik at abbiyading ibii. A a ka Manigue de la ligne de la lign PARTE LINE OF STATE OF BUILDING eralle and the English of skillering biki gkralikiliho o Make waying Telephonic May be a self-self be the an Bhaileach de Neach Eileid Rodright Color of the party of the color and the second of the second second THE BUT DO NOT THE THE BUT IN Managhan Marchan Magarasa registra al artifición de la latificación de la latificación de la latificación de l and the source of the telephone of the control of The probability of the $\mathbf{FIG.3}$. As the second of the $\mathbf{Fig.3}$ grand and all have been below to order a a line where can about a long to the transfer to be a constitution of the constituti The Market Committee of the Committee of White was a serior of the deliver that he had been the in the second of the second of the second wobasa wakin akumakin dibu bira dibubu di Program dan Merikan kecamatan dan dan Persebah ndipologica de la principalita de la compania de l Company to endigh a humbrowa unstrong and interest in this property of the contract of the contract. e. 1971 y to americal linger despetables High and modern design of the state of the second of the s Rock 1976, A Doron with the Rillian date and Administration Control and Lighted beginning to the Control that was the first of the first of the second a Dinamination of the American States is the company of the The Court of the second of the Court of the First Care and was the Whitelesson though the fre 大块的复数 医乳头 通风机 经现金的 化二进二级 医电影学 医二氏 And the contract of the life of the contract that the contract the con 是是一种生物,这是这种人的现在分词的一种人们的是 Historia and well will side who have been because Commence of the continuous for the continuous to Bakar Align Belang ber and Carles of Secretarial Belander and a second of the Control of the Align Align Align Witnebses: The w. S. Qurand Thos R. Sinclaire: Recee 6

UNITED STATES PATENT OFFICE.

THOMAS R. SINCLAIRE, OF NEW YORK, N. Y.

IMPROVEMENT IN BOILER FIRE EXTINGUISHERS.

Specification forming part of Letters Patent No. 119,190, dated September 19, 1871.

To all whom it may concern:

Be it known that I, Thomas R. Sinclaire, of New York, in the county of New York and State of New York, have invented a new and Improved Boiler Fire Extinguisher; and I do hereby declare the following to be a full, clear, and exact description of the same, reference being had to the accompanying drawing making a part of this specification, in which—

Figure 1 is a longitudinal vertical section through the case, boiler, and furnace. Fig. 2 is a horizontal section through the boiler above the horizontal pipes; and Fig. 3 is a transverse vertical section through the case, boiler, and fur-

nace.

This invention relates to a means for enabling a boiler to put out its own fires when steam is raised in it to a point beyond the permitted limit, by means of a system of pipes connecting the boiler and furnace, and provided with a safety water-valve, which, when the pressure is sufficient to raise its weight, rises, thus allowing water to be forced from the boiler to the furnace.

Referring to the drawing, a is a pipe, placed within a boiler, A, the lower end of said pipe being perforated, so as to admit water and exclude dirt or particles that might obstruct the proper working of the valve, and extending to a point that shall always be below the level of water in the boiler. The pipe a leads in any convenient direction through the boiler, and passes into a case, B, that, in this instance, is represented as attached to the top of the boiler, but may, for that matter, as well or better be situated at some point above or away from the boiler, where it is accessible and generally visible. That part of the pipe a that is within the case B is provided with a safety water-valve, of which b is the stem, c the lever, and d the weight. The lever c is provided with a sufficient number of eyes, c', to receive the bolt of the lock, which confines the weight d at any particular point. In adjusting the said weight d due allowance should be made for the height of the safety water-valve from the level of water in the boiler. A second pipe, f, of say equal capacity with a,

a, the branch n extending through the case and running to some point where water may conveniently be discharged from its end, and the branch p extending into the boiler, wherein it communicates at its lower end with a cross-pipe, g, from which two pipes, h, more or less, extend along the boiler, from each of which pipes h tubes i, three, more or less, in number, extend downward, opening directly into the furnace C. The pipe f and branch p should each be of at least equal capacity with the cross-pipe g, and the cross-pipe g should be of at least the capacity of all the pipes h, and each of these latter should be of at least equal capacity to all its branches The case B is provided with a door, B', having a window in it. This door is furnished with a lock, the key of which should be in the hands of the captain of the vessel, owner of the factory, or other proper person, never in the hands of the engineer. As regards the key of the weight d, that should be in the hands of the boiler inspector. The branches n and p of the pipe f are furnished with cocks l and k, one at each side of the connecting-pipe f. After an inspection of the boiler by the proper officer, the weight dshould be set at the point of maximum pressure and locked there. On the inside of the window of the door B' the inspector may paste a certificate showing the number of pounds pressure allowed by him on the day of inspection. The $\operatorname{cock} k$ should be opened and the $\operatorname{cock} l$ closed. Then the door B' must be also locked. Whenever the pressure in the boiler is allowed to exceed the amount for which the weight d is set, the safety water-valve in the pipe a will rise and water will flow through the pipes a f p g h i into the furnace and extinguish the fire. The knowledge by the engineer that this is sure to take place in the event of the pressure exceeding the prescribed limit will make him careful to keep the pressure within due bounds. If the cock kbe closed and the cock l be opened, the water, when the safety water-valve is raised, will flow through the branch n of the pipe f, and, by the issue of water therefrom, information will be conveyed of the proper working of the valve without extinguishing the fire. This trial should be connects branch pipes n and p with the said pipe | made at stated intervals by the person in charge of the key of the case B, and a record kept of such trial.

This apparatus, it will be seen, renders it impossible for the engineer to prevent the extinguishment of the fire whenever the pressure is excessive. The branch pipe p need not, in all cases, pass through the boiler, but may be carried outside the same to the fire-front or other convenient point, and the water injected from thence into the fire.

Having thus described my invention, what I

claim as new, and desire to secure by Letters Patent, is—

The apparatus, arranged substantially as herein described, whereby steam in a boiler causes water to flow from the boiler to the furnace whenever the pressure in the boiler is sufficient to raise the safety water-valve that regulates such flow.

Witnesses: THOS. R. SINCLAIRE.
THOS. D. D. OURAND,
CHAS. A. PETTIT. (72.)