C. B. & F. E. WIESER.

FUEL REGULATOR.

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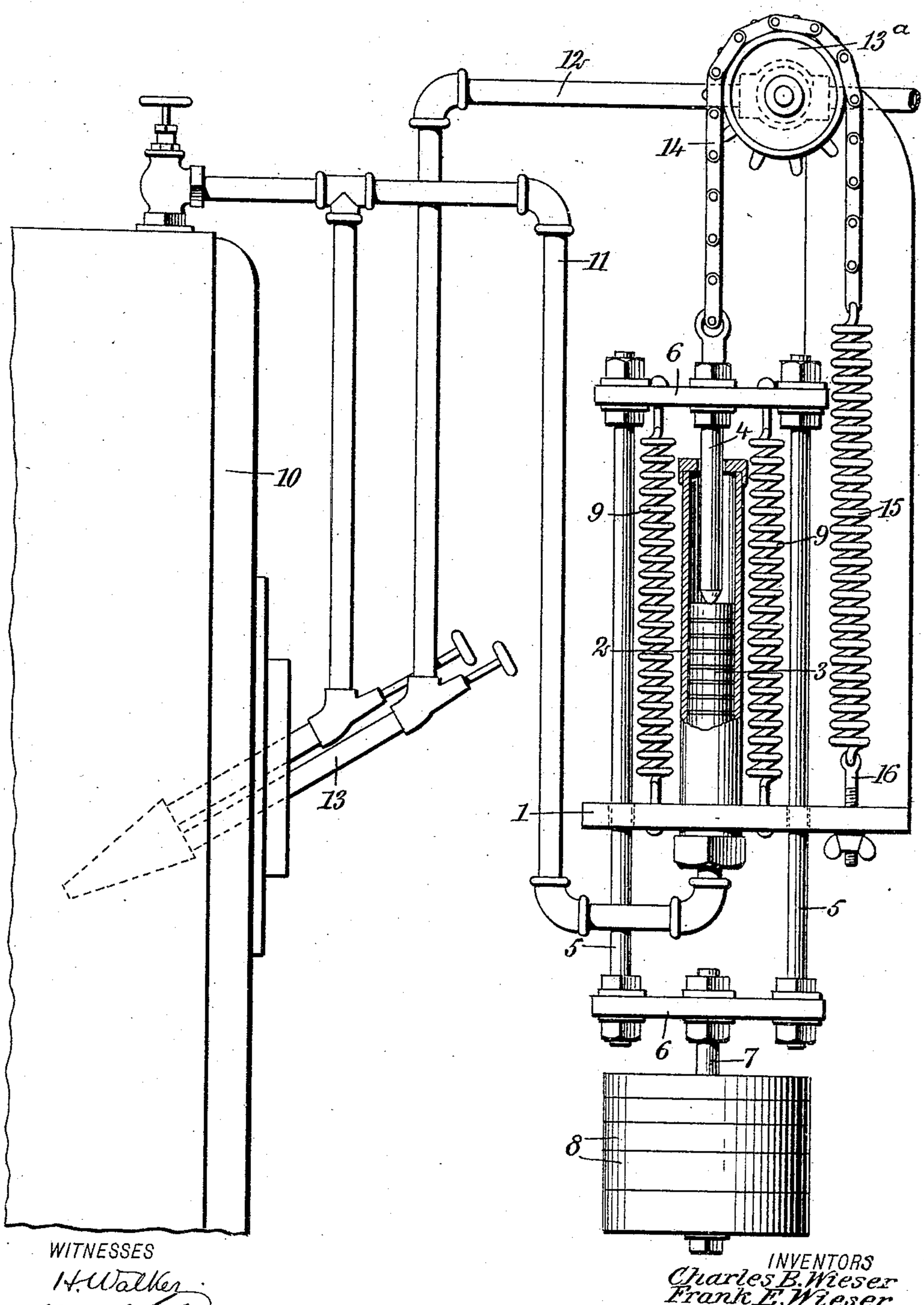
908,179.

Patented Dec. 29, 1908.



WITNESSES

H. Walker

INVENTORS

Charles B. Wieser

Frank E. Wieser

BY Munn & Co.

ATTORNEYS.

UNITED STATES PATENT OFFICE.

CHARLES BEN WIESER AND FRANK EDWIN WIESER, OF PASO ROBLES, CALIFORNIA, ASSIGNORS OF ONE-THIRD TO JAMES M. CURRELL, OF PASO ROBLES, CALIFORNIA.

FUEL-REGULATOR.

No. 908,179. Specification of Letters Patent. Patented Dec. 29, 1908.

Application filed June 3, 1908. Serial No. 436,397.

To all whom it may concern:

Be it known that we, CHARLES BEN WIESER and FRANK EDWIN WIESER, both citizens of the United States, and residents of Paso Robles, in the county of San Luis Obispo and State of California, have invented a new and Improved Fuel-Regulator, of which the following is a full, clear, and exact description.

This invention is an improvement in devices controlling by steam pressure, the flow of oil, gas or other fuels to the burners of steam boilers.

The invention has for its purpose to provide such a construction in which a cylinder having a working piston is in communication with the boiler pressure, with means in connection with the piston for moving the fuel regulating valve in a direction to cut down the fuel supply when the piston is moved by the steam pressure in one direction, and means tending to move the piston in the opposite direction against the steam pressure, the last mentioned means being variable, whereby it is possible to maintain any desired boiler pressure within certain limits.

Reference is to be had to the accompanying drawing forming a part of this specification, in which the preferred form of our improved fuel regulator is shown in side elevation, partly in central vertical section, and as applied to a boiler.

On a plate 1, supported in any suitable manner, is rigidly attached a vertically-arranged cylinder 2 having a working piston 3 which is provided with a stem 4 passing loosely through the upper end of the cylinder, the lower extremity of the piston stem being preferably of conical form and bearing on the top of the piston head, permitting of a free and easy movement of the working parts. Slidable through the plate 1, at opposite sides of the cylinder 2, are vertical guide-rods 5, rigidly connected together at opposite ends by heads 6, the upper head having the piston stem rigidly connected therewith, and the lower head being provided with a central weight hanger 7 having a number of removable weights 8, the latter operating through the connecting mechanism to force the piston downwardly in the cylinder. This downward pressure on the piston is further increased by springs 9, attached at opposite ends to the plate 1 and upper head 6, and arranged at opposite sides of the cylinder at the inside of the guide-rods. The lower end of the cylinder is placed in communication with the steam pressure of one or more boilers 10, through a pipe 11.

The fuel supply pipe 12, passing to the burner 13 for heating the boiler, passes directly above the regulator, where it is provided at one side of the vertical center with a controlling valve, to the stem of which is secured a sprocket wheel 13^a. Over this sprocket wheel passes a chain 14 having one end attached to the piston, and its opposite end connected to a spring 15, the tension of the latter being adjusted by the bolt 16, which passes through the plate 1.

With our improvement thus installed, when the pressure of the steam in the boiler exceeds a certain point, which is determined by the weights placed on the weight hanger 7, the piston rises in the cylinder, which permits of the drawing of the chain over the sprocket wheel by the spring 15, operating to move the valve in a direction to cut down the fuel supply. As the boiler pressure drops, the weights 8 and springs 9 will return the piston, chain, etc., and thereby further open the fuel valve. In this way approximately any desired boiler pressure may be maintained within certain limits.

Having thus described our invention, we claim as new and desire to secure by Letters Patent:

1. The combination of a burner, a fuel supply leading to the burner, having a regulating valve, a cylinder, rods slidable relatively to the cylinder having heads attached to its opposite ends, a piston in the cylinder connected to one of said heads, a wheel for operating said valve, a flexible member connected at one end to the piston and passing over the wheel, means independent of said wheel and connected to the opposite end of said member, tending to move it in a direction to cut off the fuel supply, and means tending to move said member in the opposite direction.

2. The combination of a vertically-arranged cylinder having a working piston, means tending to force the piston within the cylinder, a burner, a fuel supply leading to the burner, having a controlling valve, a sprocket wheel for regulating said valve, a chain attached to the piston at one end and passing over the sprocket wheel, a spring

attached to the opposite end of said chain, and means for regulating the tension of the spring.

3. The combination of a boiler, a burner for heating the boiler, a fuel supply leading to the burner and having a regulating valve, a wheel for operating said valve, a cylinder, a working piston in the cylinder, means tending to move the piston against the steam pressure of the boiler, a flexible member attached to the piston and passing over said wheel, and a spring for drawing said member over the wheel when the piston is moved against the action of said means.

4. The combination of a cylinder adapted to be placed in communication with the steam pressure of a boiler, a fuel regulating valve, a sprocket wheel for operating said valve, guide-rods slidable relatively to the cylinder at opposite sides thereof and rigidly connected together at opposite ends, a piston in connection with said guide-rods, means tending to move the piston in one direction, a chain connected at one end to the piston and passing over the sprocket wheel, and a spring connected to the opposite end of the chain, tending to pull it over said wheel against the action of said means.

In testimony whereof we have signed our names to this specification in the presence of two subscribing witnesses.

CHARLES BEN WIESER.
FRANK EDWIN WIESER.

Witnesses:
ELMER T. BOLLINGER,
CHESTER TAYLOR.