

July 6, 1948.

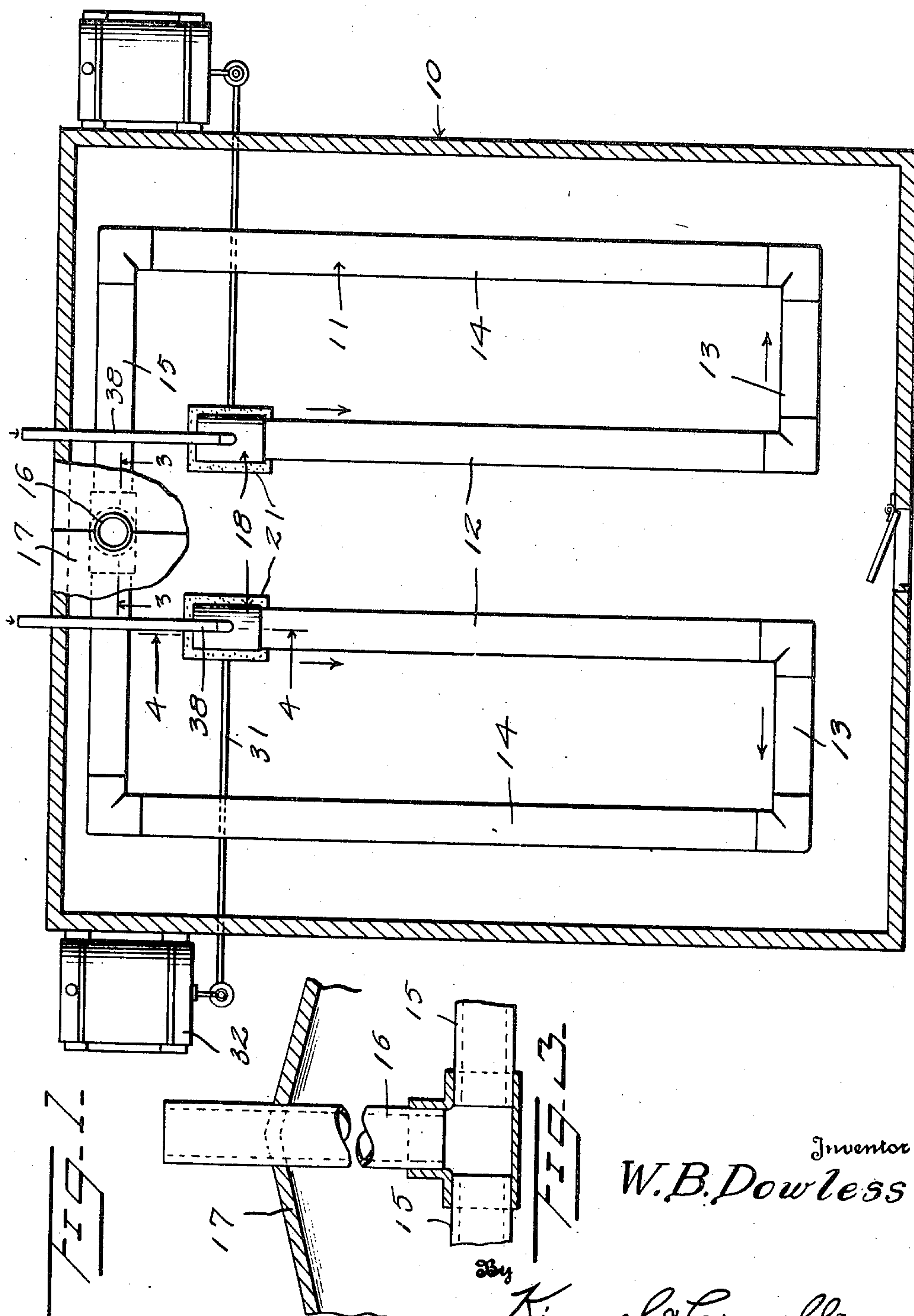
W. B. DOWLESS

2,444,814

OIL BURNER FOR TOBACCO DRYING AND CURING MEANS

Filed Nov. 19, 1945

2 Sheets-Sheet 1



Inventor
W.B. Dowless

Kimmel & Crowell Attorneys

July 6, 1948.

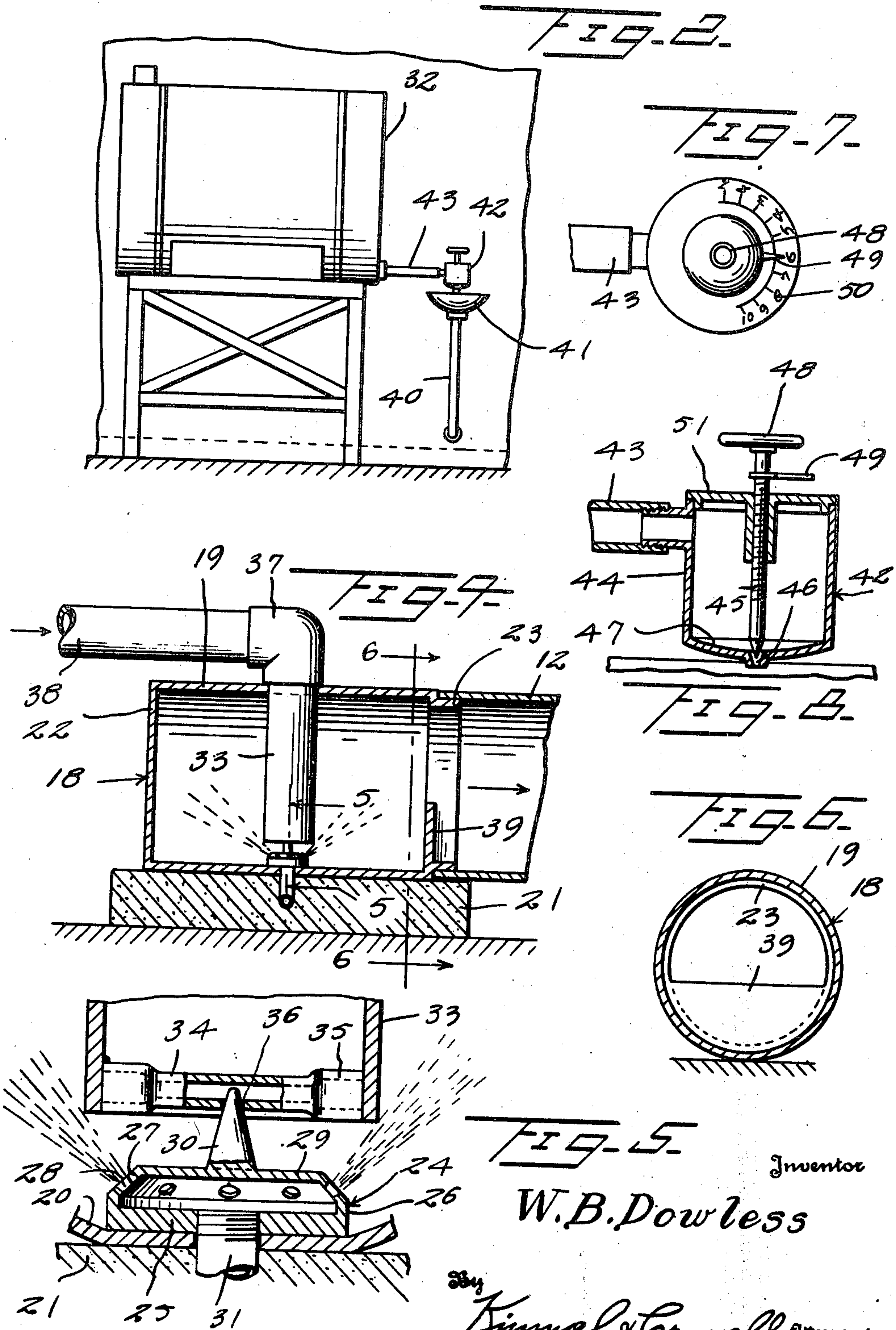
W. B. DOWLESS

2,444,814

OIL BURNER FOR TOBACCO DRYING AND CURING MEANS

Filed Nov. 19, 1945

2 Sheets-Sheet 2



UNITED STATES PATENT OFFICE

2,444,814

OIL BURNER FOR TOBACCO DRYING AND CURING MEANS

William B. Dowless, Abbottsburg, N. C.

Application November 19, 1945, Serial No. 629,379

3 Claims. (Cl. 158—91)

1

This invention relates to tobacco drying and curing means and is an improvement over the structure shown in my Patent Number 2,223,301 dated November 26, 1940.

An object of this invention is to provide in a tobacco curing means, embodying hot air ducts, an improved burner or heater for heating the air passing through the ducts.

Another object of this invention is to provide an improved burner of this kind which is of simple construction so that it can be easily and cheaply made and will provide a minimum of parts in order that the burner will not readily get out of order.

With the above and such other objects in view, as may hereinafter more fully appear, the invention consists of the disclosed novel construction, combination and arrangement of parts, but it will be understood that changes, variations and modifications may be resorted to which fall within the scope of the invention, as claimed.

In the drawings:

Figure 1 is a horizontal section of a tobacco curing barn or housing showing in plan a drying and curing means mounted therein which is constructed according to an embodiment of this invention.

Figure 2 is a detail elevation of the fuel supply tank on the exterior of the housing.

Figure 3 is a sectional view taken on the line 3—3 of Figure 1.

Figure 4 is a sectional view taken on the line 4—4 of Figure 1.

Figure 5 is a sectional view taken on the line 5—5 of Figure 4.

Figure 6 is a sectional view taken on the line 6—6 of Figure 4.

Figure 7 is a fragmentary plan view of the oil regulating valve.

Figure 8 is a vertical section through the regulating valve.

Referring to the drawings the numeral 10 designates generally a housing wherein the tobacco is suspendingly positioned for drying and curing.

The housing 10 has mounted in the lower portion thereof, a heating means, generally designated as 11. The heating means 11 includes a pair of hot air ducts 12, extending from front to rear of the housing, and having connected to one end thereof laterally extending ducts 13. The ducts 13 extend in opposite directions toward the opposite side walls of the housing 10, and have connected to the outer ends thereof longitudinal pockets 14. The longitudinal pockets

2

14 have connected to the opposite ends thereof, ducts 15 which are connected to a vertically disposed outlet pipe 16 extending through the roof 17 of the housing.

The two hot air pipes 12 each have heating members 18 secured to one end thereof, the heating members 18 being of like construction, and shown in greater detail in Figures 4, 5 and 6.

Each heating member 18 comprises a substantially cylindrical body 19 which is formed with a flat lower wall 20, adapted to engage a supporting base 21. The body 19 is formed with one end wall 22 closing the outer end of the body 19, and the opposite end of the body 19 is formed with a reduced cylindrical extension 23 over which the adjacent end of the duct or pipe 12 is adapted to telescope.

The bottom wall 20 of the heater body 19, has mounted thereon a nozzle member, generally designated as 24. The nozzle member 24 includes a flat bottom wall 25 which is of disk-shape in plan, and which has extending upwardly therefrom a cylindrical wall 26 terminating in frusto-conical wall 27. The wall 27 is formed with a plurality of jet openings 28 from which the fuel is adapted to be ejected.

The frusto-conical wall 27 has formed integral with the upper end thereof, a horizontal flat wall 29 which has extending from the center thereof a cone-shaped spacer member and air duct supporting member 30.

The bottom wall 25 of the nozzle 24, has threaded into the lower end thereof, a fuel intake pipe 31, which is connected to a fuel supply tank 32 disposed on the exterior of the housing 10. An air intake duct 33 is disposed in the body 19, extending diametrically thereof, and terminating at its lower end at a point slightly above the top of the nozzle 24. The lower end of the duct 33 has extending diametrically thereacross, a bar 34 which is of tubular construction, being flattened at its outer ends, as indicated at 35 and formed with an opening 36 within which the point of the spacer and supporting member 30 is adapted to engage.

The jet openings 28 are arranged at such an angle that the fuel ejected therefrom will pass the lower edge of the air duct 33, for mixture with the downwardly flowing air in the duct 33. The upper end of the duct 33 has connected thereto, an L 37 with which an air intake pipe 38 extended through the adjacent wall of the housing 10, is adapted to be connected.

The body 19, has disposed at the outlet end thereof, a segmental baffle 39, which extends

3

from the lower side of the body 19 so as to prevent any unburned liquid fuel from entering the adjacent end of the hot air duct 12.

The pipe 31, as shown in Figure 2, is provided at its outer end with an upturned portion 40, having a cup or funnel 41 secured thereto. A fuel regulating valve 42 is secured to a pipe 43 which is connected to the tank 32, and the fuel from the valve 42 discharges into the cup 41, and then gravitatingly flows to the nozzle or burner member 24.

As shown in Figures 7 and 8, the valve 42 comprises a hollow body 44 which has a needle valve 45 extended vertically thereinto, for regulating the amount of fuel discharged through the outlet opening 46 formed in the bottom wall 47 of the valve 42.

The valve stem 45 has a hand wheel 48 secured to the upper end thereof and a pointer 49 is secured to the stem 45, exteriorly of the body 44, and swings over a series of graduations 50 formed on the upper wall 51 of the valve body.

What is claimed is:

1. In a tobacco curing system, a burner comprising a cylindrical housing, a fuel nozzle in the bottom of said housing formed of a hollow body having a plurality of upwardly and outwardly directed jet openings, an air intake tube extending downwardly through one side of said housing and terminating above said nozzle, a diametrically disposed bar fixedly carried by the lower end of said tube, said bar having a central opening, and a conical pin carried by said nozzle coaxially thereof engaging in said opening for supporting said tube with the lower end thereof spaced above said nozzle and out of the path of the fuel ejected through said jet openings.

2. In a tobacco curing system, a burner comprising a substantially tubular housing closed at one end and open at the other, a fuel nozzle adjacent to the bottom of said housing and formed of a hollow body having a plurality of upwardly and outwardly directed jet openings, an air inlet tube extending into said housing through the top thereof and terminating above said nozzle, a diametrically disposed bar carried by the lower end of said tube, said bar having a central opening, and an upwardly convergent conical pin carried

4

by said nozzle coaxially thereof engaging in said opening for supporting said tube with the lower end thereof spaced above said nozzle out of the path of the fuel ejected through said jet openings.

3. In a device as described, a tubular conduit establishing a line of flow of hot flames, a fuel burner at one end of said conduit, said burner comprising a substantially tubular housing closed at one end and open at the other, a fuel nozzle adjacent to the bottom of said housing and formed of a hollow body having a plurality of upwardly and outwardly directed jet openings, an air tube disposed downwardly in said housing and extending diametrically almost across said conduit with its air discharge end in close spaced proximity to said nozzle, a centrally apertured bar in the lower end of said tube, a conical pin on said nozzle engaging in the opening of said bar for supporting said tube thereabove, and a baffle plate extending upwardly from the bottom of said housing at the open end thereof for angularly diverting into said conduit a flow of the hot flames generated at the confluence of the burner gases and the air stream discharged from said tube.

his
WILLIAM X B. DOWLESS.
mark

Witnesses to mark:

J. O. HALL,
H. H. CLARK.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

| Number | Name | Date |
|-----------|-------------|----------------|
| 387,927 | Smith | Aug. 14, 1888 |
| 797,249 | Ziegler | Aug. 15, 1905 |
| 965,407 | Reese | July 26, 1910 |
| 990,150 | Liddell | Apr. 18, 1911 |
| 1,381,835 | Holmes | June 14, 1921 |
| 1,395,824 | Hoerger | Nov. 1, 1921 |
| 1,459,969 | Beauchamp | June 26, 1923 |
| 1,606,974 | Tegner | Nov. 16, 1926 |
| 1,623,415 | Kennedy | Apr. 5, 1927 |
| 1,927,434 | Cole et al. | Sept. 19, 1933 |
| 2,223,301 | Dowless | Nov. 26, 1940 |
| 2,246,809 | Miller | June 24, 1941 |