No. 889,701. PATENTED JUNE 2, 1908.

H. LUCKENBACH.

APPARATUS FOR DISINTEGRATING FUEL OIL.

APPLICATION FILED JUNE 21, 1905.

FIG. 1.

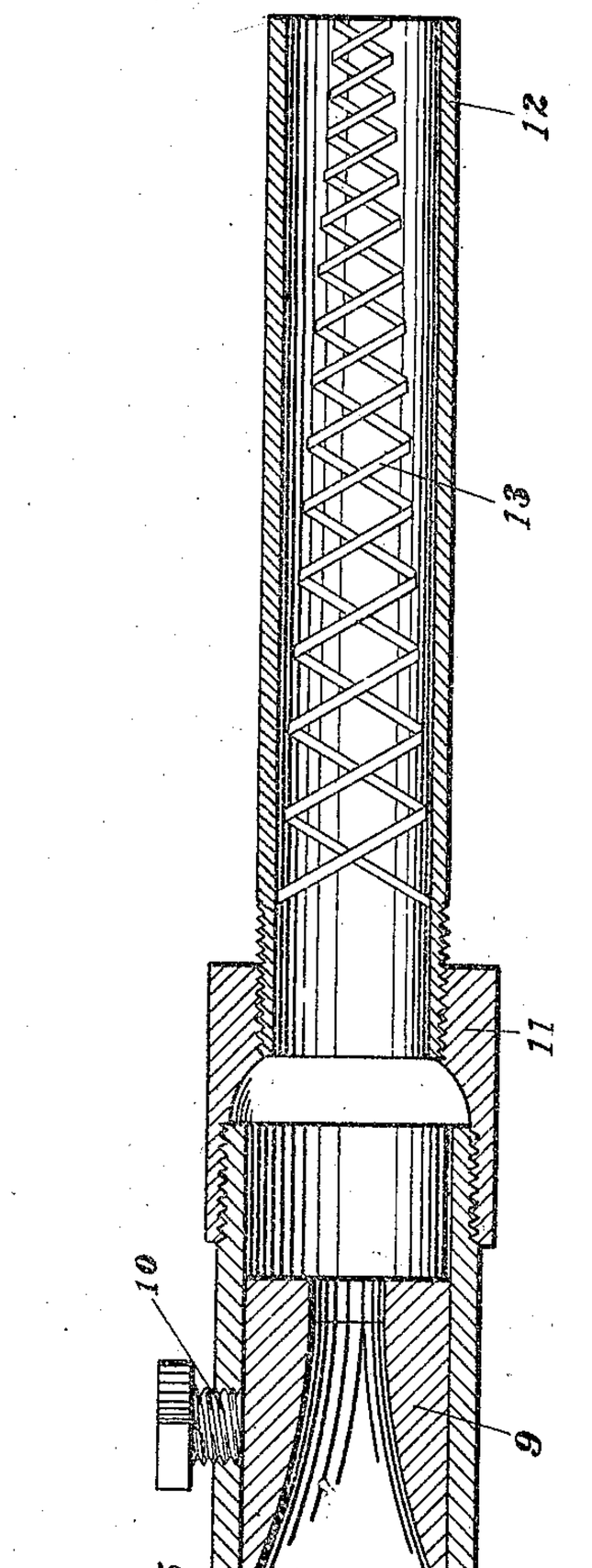
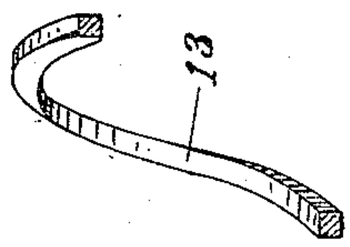


FIG. 2.



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UNITED STATES PATENT OFFICE.

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APPARATUS FOR DISINTEGRATING FUEL-OIL.

No. 889,701. Specification of Letters Patent. Patented June 2, 1908.

Application filed June 21, 1905. Serial No. 266,353.

To all whom it may concern:

Be it known that I, HARRY LUCKENBACH, a citizen of the United States, residing at San Francisco, in the county of San Francisco and State of California, have invented certain new and useful Improvements in Apparatus for Disintegrating Fuel-Oil, of which the following is a specification.

This invention relates to an apparatus for disintegrating fuel oil, the object of the invention being to provide means whereby compressed air or steam or superheated steam can be utilized to break up the particles of oil and discharge the same in a fine spray commingled with the compressed fluid, for the purpose of obtaining perfect combustion.

In the accompanying drawing, Figure 1 is a longitudinal sectional view of the apparatus; Fig. 2 is an enlarged perspective view of a portion of one of the springs.

Referring to the drawing, 1 represents the hollow body of the apparatus closed at the feed end by a cap 2 through which passes a narrow pipe 3 forming a nozzle through which may be discharged compressed air or other elastic fluid, on the end of which nozzle is a tip 4 having a contracted orifice.

5 represents an inlet pipe for the oil, discharging in front of the compressed air tip and connected by an elbow 6 with an oil pipe line 7.

The form and proportion of the nozzle tip relatively to the compressed air pipe is the essence of this invention. The contracted orifice 8 of said tip is of length substantially twice its diameter. Moreover the rear side of the tip, next the nozzle or compressed air pipe 3, forms a square surface or shoulder. The result of this configuration is that the compressed air, issuing through said orifice, does not spread, but forms a narrow cylindrical jet. This jet is discharged into the converging mouth of the bushing 9, which is held in place in the body of the apparatus by a set screw 10. Discharging into said mouth it produces a suction, which draws with it the oil from the oil pipe, and carries said oil with great force through said bushing.

On the discharge end of the body is secured a reducer 11, and into said reducer is screwed a pipe 12 of reduced diameter. The oil and compressed air passing into said pipe with great force impinge upon two spiral springs 13 tapering towards their discharge end, and by continued impact with the coils of said springs, the oil is broken up into fine particles of spray, and is discharged from the end of the pipe 12 thoroughly commingled with the compressed air and in proper condition for combustion. These springs, by their resiliency, retain their position in the pipe 12 against the force of the fluids; and in order to render the springs as effective as possible in breaking up the oil, they are made square in cross section, so that the flat surfaces of the springs will arrest and deflect the particles of oil as much as possible.

I claim:—

In an apparatus of the character described, the combination with a hollow body, of a nozzle therein for discharging compressed air, a pipe for feeding oil opening in front of said nozzle, a pipe connected to said hollow body and a coiled spring in said pipe tapering towards its discharge end, and made with flattened surfaces, substantially as described.

In witness whereof I have hereunto set my hand in the presence of two subscribing witnesses.

HARRY LUCKENBACH.

Witnesses:
F. M. WRIGHT,
BESSIE GOREINKEL.