

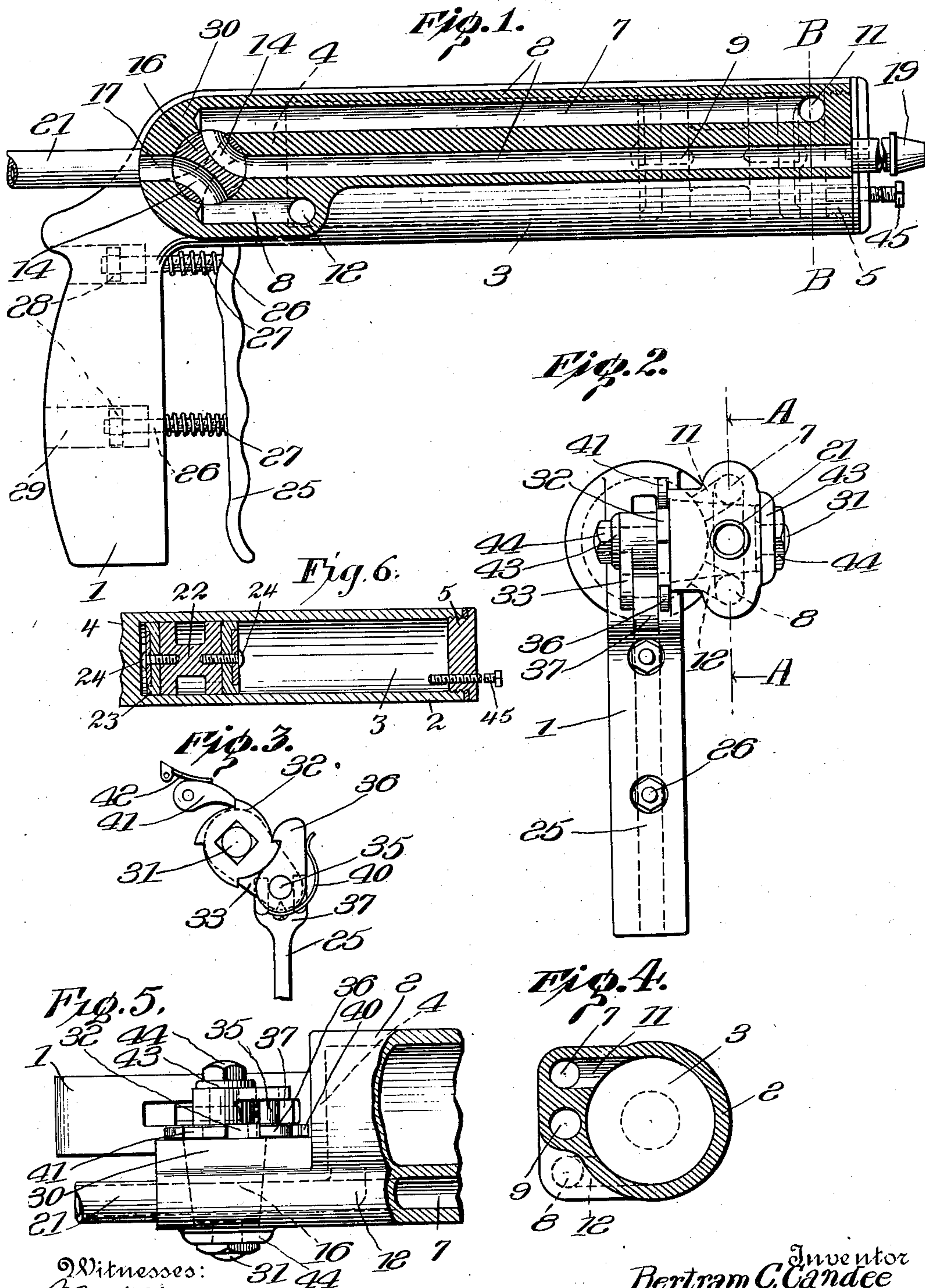
B. C. CANDEE.

OILING TOOL.

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1,191,663.

Patented July 18, 1916.



Witnesses:
J. P. Millard
M. L. Breslin

Inventor
Bertram C. Candee
By his Attorney
Alfred Wilkinson

UNITED STATES PATENT OFFICE.

BERTRAM C. CANDEE, OF BUFFALO, NEW YORK, ASSIGNOR OF ONE-HALF TO BUFFALO METAL GOODS COMPANY, OF BUFFALO, NEW YORK.

OILING-TOOL.

1,191,663.

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To all whom it may concern:

Be it known that I, BERTRAM C. CANDEE, a citizen of the United States, residing at Buffalo, in the county of Erie and State of New York, have invented new and useful Improvements in Oiling-Tools, of which the following is a specification.

My invention relates to a hand-tool particularly adapted for quickly and conveniently oiling large installations of machinery for instance link belt conveyers. In conveying mechanisms of this and similar character it has heretofore been an inconvenient and laborious matter to effect the oiling for it was necessary to do this on holidays, or to shut off the power on other days, and even then the oilers were obliged to climb over the structure and to oil the bearings at most inconvenient points and positions, a slow and laborious matter. In large structures or installations two men might easily spend a whole day doing this oiling, whereas with my tool, particularly designed for this work, the same may be done in an hour or less often by a single operator; it is not necessary to shut off the power; one operator may stand at any convenient point and as the parts of the conveyor move past him "shoot" a uniform charge of oil into each bearing.

For this purpose I have particularly designed my oiling tool, which consists essentially of a pistol-like structure having a handle-portion made to fit the hand, and a barrel-like portion formed with a cylinder for receiving the measured supply of oil and with parallel, elongated channels through which the oil is delivered from the inlet in the butt, connected to a suitable source of supply, first to the cylinder and second from the cylinder to the nozzle. A four-way or other suitable valve suitably arranged controls the direction of flow, and a piston in the cylinder is forced back and forth by the inflowing oil to force out one cylinder full at each reversal of the valve and consequent stroke of the cylinder, either forward or back. The operation is effected by a spring trigger in the handle.

My invention is shown in the drawings herewith in which the same reference numerals indicate the corresponding parts in all the figures.

Figure 1 is a longitudinal section of my

oiling tool taken on line A A of Fig. 2. Fig. 2 is a rear elevation thereof. Fig. 3 is a detail in side elevation showing a desirable form of ratchet and pawl connection. Fig. 4 is a cross-section on line B of Fig. 1. Fig. 5 is a partial top plan showing the butt and adjacent parts. Fig. 6 is a vertical longitudinal sectional view taken centrally through the cylinder 3.

In the figures 1 indicates the handle of the tool and 2 the barrel, the latter formed with the cylinder 3 extending from the rear wall 4 to the front end of the barrel where the cylinder is closed by screw-plug, or cylinder cap, 5, and with three longitudinal channels, the upper channel 7, the lower channel 8 and the delivery conduit 9. The channels 7 and 8 are respectively connected with the front and rear ends of the cylinder by front and rear ports 11 and 12. And through the valve ports 14 14 in the rotating valve 16 communication is alternately established between said channels and the inlet port 17; when one channel is connected through one valve port to the inlet port, for admitting the supply of oil, the other channel is connected through the other valve port to the conduit for delivering one cylinder full of oil to the oil-cup, or bearing, in question through the nozzle 19 at the front end of the conduit. The oil under suitable pressure is conducted to the inlet port through the inlet pipe 21 from any suitable source of supply. The piston 22 is fitted to reciprocate within the cylinder and is provided with suitable packing 23 held secured thereto by the screws 24 which also act as stops. The rotation of said valve and the simultaneous filling and emptying of the cylinder, by means of the piston moving alternately in opposite directions, is effected by the trigger 25 carried on the guide pins 26 provided with a suitable spring or springs 27 to return the trigger to initial position. Said pins are provided with heads 28 arranged in the head-holes 29 and acting as stops to limit the said outward movement of the trigger.

The valve is journaled in its bearing in the valve core or butt 30 of the barrel and is secured on the valve-pin 31, which carries near its other end, the ratchet 32 fixed thereon and the journaled arm 33. At the end of the arm is journaled on the ratchet-stud

35 the pawl 36, and said ratchet-stud is engaged by the forked end 37 of the trigger. The pawl-spring 40 holds the pawl against the ratchet. A dog 41 and dog-spring 42
 5 may be provided to prevent backward turn but probably will not generally be necessary for there would probably be enough friction in the parts to prevent any backward turn. 43 are washers and 44 are nuts
 10 for securing the valve-pin and parts thereon rotatably in position.

The amount of oil received into the cylinder and the amount discharged therefrom at each stroke of the piston may be varied and
 15 regulated by removing the cylinder cap and inserting a piston of different length, but I prefer to effect such modification in stroke of the piston and capacity of the cylinder by means of stop-screw 45 inserted into said
 20 cap which may easily be adjusted as desired from the exterior by screw-driver or wrench.

The nozzle 19 may be made longer or shorter or even extended into the form of a
 25 pipe if it is desired to deliver the oil some little distance.

As here shown the piston is in forward position and the cylinder is supposed to be filled with oil that is between the piston and
 30 the rear wall, the oil having been supplied under pressure from the source of supply through pipe 21, inlet port 17, one of the valve-ports 14, lower channel 8 and rear port 12. Now on pressure of the trigger,
 35 the valve is given a quarter turn by means of the ratchet connection described, thus turning it into reverse position indicated in dotted lines in Fig. 1. Communication is thereby established between the inlet-port
 40 and the front end of the cylinder through upper channel 7 and front port 11, whereby the oil enters, filling the cylinder from the front end and forcing out the charge of oil in the cylinder through the rear port 12,
 45 lower channel 8 and conduit 9, whence by nozzle 19, inserted into the oil-hole, it is directed in the bearing or oil-cup in question. Thus where moving parts are to be piled the oil may be supplied easily and
 50 conveniently to each oil-cup as it passes by the operator who takes his stand at the most convenient point, without the necessity of shutting down the machinery. And a fixed and easily regulable quantity of oil may be
 55 delivered into each oil-cup or other receptacle.

On releasing the pressure of the hand, the trigger under its spring pressure is forced out to return the pawl to initial position ready to engage the next tooth and to
 60 effect the next quarter turn of the valve.

While the form of tool here shown is desirable yet the particular form and arrangement of parts may be varied without departing from my invention. While particu-

larly designed for use with link-belt conveyers and other large installations, it is not limited to such purposes but may be used wherever desirable to deliver a fixed charge of oil, or of any other liquid to any
 70 receptacle.

Having described my invention, I claim,

1. A hand oiling tool comprising a suitable handle and a suitable barrel, said barrel being provided with a cylinder, an inlet, an
 75 outlet conduit, channels adapted to connect the inlet with the front and rear ends of the cylinder, a piston in the cylinder, a nozzle at the end of the conduit to deliver oil into an oil hole, a valve having ports, and means to
 80 move the valve to connect the inlet alternately with the respective channels and the respective channels alternately with the conduit.

2. A hand oiling tool adapted to deliver
 85 a measured quantity of oil, comprising a suitable handle adapted to fit the hand of the operator, an integral elongated barrel and an outlet nozzle on the end of the barrel adapted to be inserted in an oil hole, said
 90 barrel being formed with a cylinder, an inlet, and channels for connecting the inlet with opposite ends of the cylinder and a conduit connecting said opposite ends with the outlet nozzle and hand operated means
 95 to establish connection between the inlet and the channels alternately and simultaneously between the channel not so connected and the outlet nozzle.

3. A hand oiling tool comprising a handle
 100 formed to fit the hand of the operator and an integral elongated barrel provided with a cylinder, a parallel outlet conduit, two parallel channels, one having a port communicating with the front end of the cylinder
 105 and one having a port communicating with the rear end of the cylinder and an inlet port adapted to be connected with either of said channels, and also comprising a piston in the cylinder, a pipe connected to
 110 the inlet for delivering the oil under pressure from the source of supply, a rotating valve journaled in the butt of the barrel and provided with two ports adapted one to connect the inlet with one channel and one
 115 to simultaneously connect the other channel with the conduit, a spring trigger arranged in the handle to be operated by the grip of the operator and connections between the trigger and the valve to rotate the latter one
 120 step at each pressure on the trigger and reverse the connections of the inlet and the conduit with the channels.

4. A hand oiling tool comprising a handle
 125 formed to fit the hand of the operator and an integral elongated barrel provided with a cylinder, and at the side of the cylinder a parallel outlet conduit, two parallel channels, a longer channel having a port communicating with the front end of the cyl-
 130

inder and a shorter channel having a port communicating with the rear end of the cylinder and an inlet adapted to be connected with either of said channels, a nozzle at the end of the conduit to deliver oil into an oil hole, a pipe connected to the inlet for delivering the oil under pressure from a source of supply, a rotating valve journaled in the butt of the barrel and provided with two ports adapted one to connect the inlet with one channel and one simultaneously to connect the other channel with the conduit, a spring trigger arranged in the handle to be operated by the grip of the operator and connections between the trigger and the valve to rotate the latter one step at each pressure on the trigger and reverse the connections of the inlet and the conduit with the channels.

5. A hand oiling tool comprising a handle formed to fit the hand of the operator and an integral elongated barrel provided with a cylinder, a parallel outlet conduit, two parallel channels, one having a port communicating with the front end of the cylinder and one having a port communicating with the rear end of the cylinder and with an inlet port adapted to be connected with either of said channels, a piston in the cylinder, a pipe connected to the inlet for delivering the oil under pressure from the source of supply, a rotating valve journaled in the butt of the barrel and provided with two parts adapted one to connect the inlet with one channel and one simultaneously to connect the other channel with the conduit, a spring trigger arranged in the handle to be operated by the grip of the operator, connections between the trigger and the valve to rotate the latter one step at each pressure on the trigger and reverse the connections of the inlet and the conduit with the channels, a screw plug fitted to and closing the front end of the cylinder and an adjustable stop pin in said plug to limit the stroke of the piston.

6. A hand oiling tool comprising a handle formed to fit the hand of the operator and an integral elongated barrel provided with a cylinder, a parallel outlet conduit, two parallel channels, one having a port communicating with the front end of the cylinder and one having a port communicating with the rear end of the cylinder and an inlet, a pipe connected to the inlet for the oil under pressure from the source of supply, a valve-pin journaled in the butt of the barrel, a valve secured on the pin said valve being provided with two ports adapted simultaneously to connect the inlet with one channel or the other and reversely to connect the conduit with one channel or the other, a ratchet fixed on the pin, an arm journaled on the pin, a ratchet stud on the end of the arm, a pawl pivoted on said stud, a spring to hold the pawl in engagement

with the ratchet teeth, a hand operated trigger arranged on the front side of the handle and a connection between said trigger and the ratchet stud, whereby pressure on the trigger operates the ratchet and through it the valve.

7. A hand oiling tool comprising a handle formed to fit the hand of the operator and an integral elongated barrel provided with a cylinder, a parallel outlet conduit, two parallel channels, one having a port communicating with the front end of the cylinder and one having a port communicating with the rear end of the cylinder and an inlet adapted to be connected with either of said channels and comprising a pipe connected to the inlet for the oil under pressure from the source of supply, a valve-pin journaled in the butt of the barrel, a valve secured on the pin, said valve being provided with two ports adapted simultaneously to connect the inlet with one channel or the other and reversely to connect the conduit with one channel or the other, a ratchet connected to the valve and adapted to rotate the same, a hand operated trigger arranged on the front side of the handle, guide pins carrying the trigger, said guide pins extending back through holes in the handle into enlarged head holes or depressions in the handle, heads on the pins arranged in said head-holes, springs coiled on said guide pins between the trigger and the handle and an operating connection between the trigger and the ratchet, substantially as shown.

8. A hand oiling tool comprising a handle formed to fit the hand of the operator and an integral elongated barrel provided with a cylinder, a parallel outlet conduit, two parallel channels, one having a port communicating with the front end of the cylinder and one having a port communicating with the rear end of the cylinder and an inlet adapted to be connected with either of said channels and comprising a pipe connected to the inlet for the oil under pressure from the source of supply, a valve-pin journaled in the butt of the barrel, a valve secured on the pin in line with the channels and conduit, said valve being provided with two ports adapted simultaneously to connect the inlet with one channel and then the other and the conduit with one channel and then the other, a ratchet fixed on the pin, an arm journaled on the pin, a ratchet stud on the end of the arm, a pawl pivoted on said stud, a spring to hold the pawl in engagement with the ratchet teeth, a spring dog on the butt to prevent backward turn of the ratchet, nuts and washers on the ends of the valve pin to secure it in position, a hand operated trigger arranged on the front side of the handle, guide pins carrying the trigger, said guide-pins extending back through holes in the handle into enlarged head holes or de-

pressions in the handle, heads on the pins
arranged in said head-holes, springs coiled
on said guide pins between the trigger and
the handle and an arm extending up from
5 the trigger and having a forked end engag-
ing with the ratchet stud, substantially as
described and shown.

In testimony whereof I have signed my
name to this specification in the presence of
two subscribing witnesses.

BERTRAM C. CANDEE.

Witnesses:

ROSE H. OWEN,
WM. F. EMERSON.