

No. 896,785.

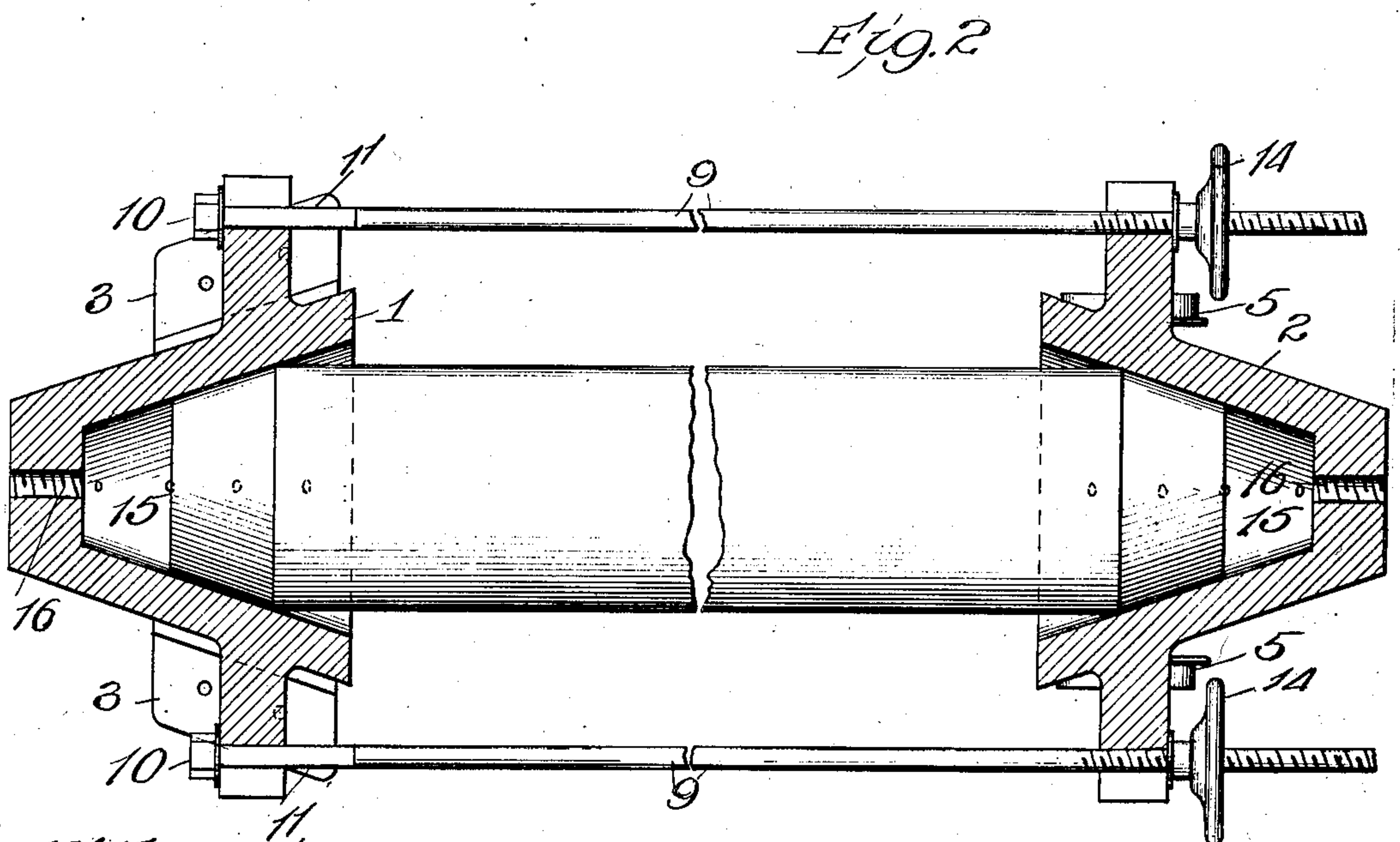
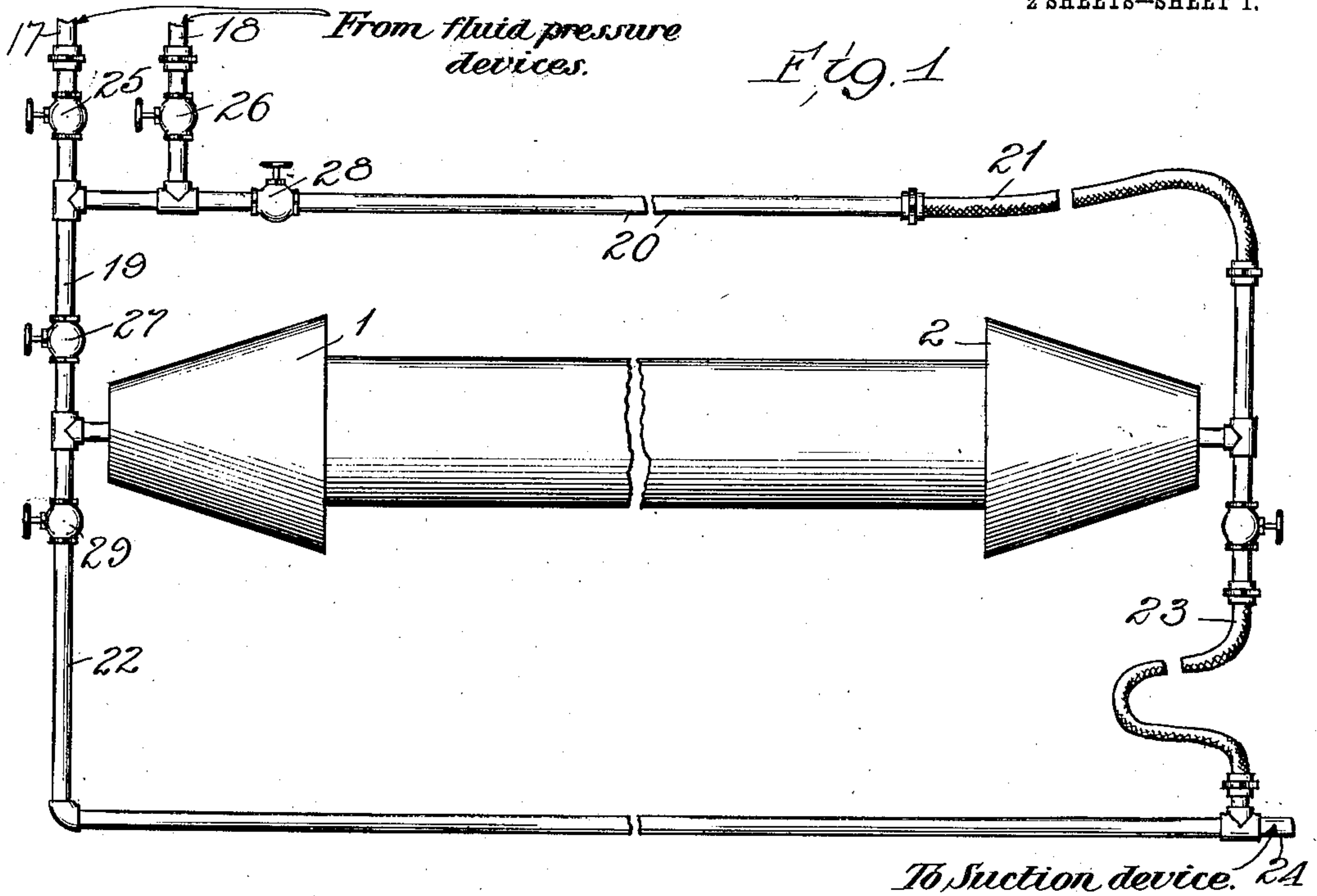
PATENTED AUG. 25, 1908.

S. WILLNER.

APPARATUS FOR INJECTING CHEMICALS INTO LOGS.

APPLICATION FILED OCT. 19, 1907.

2 SHEETS—SHEET 1.



Witnesses
Ray White.

Harry R. L. White

Inventor:
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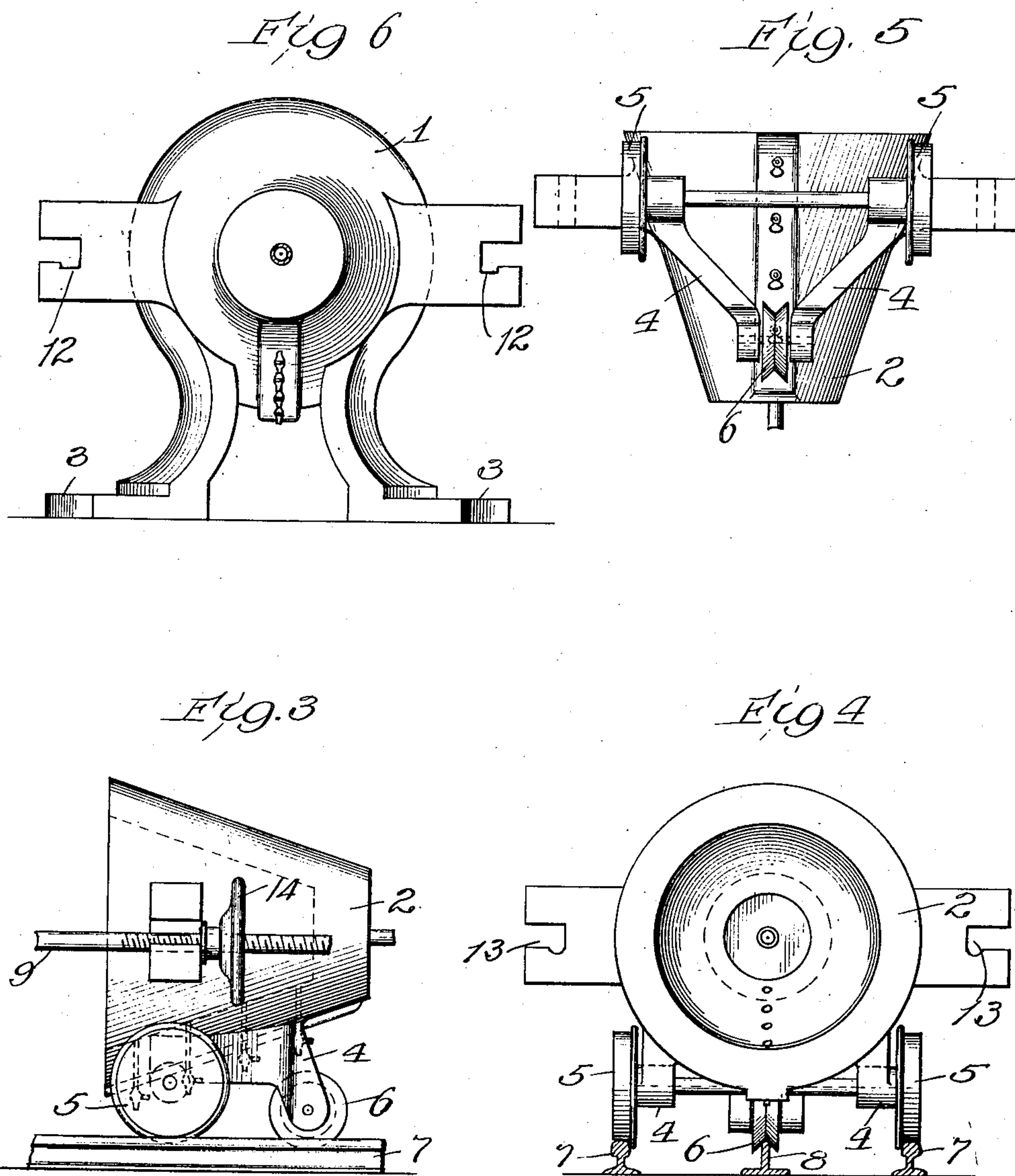
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Ray White,
Harry R. L. White.

Inventor:
Sigmund Willner,
By Hummel & Hummel, Attys

UNITED STATES PATENT OFFICE.

SIGMUND WILLNER, OF CHICAGO, ILLINOIS.

APPARATUS FOR INJECTING CHEMICALS INTO LOGS.

No. 896,785.

Specification of Letters Patent.

Patented Aug. 25, 1908.

Application filed October 19, 1907. Serial No. 398,180.

To all whom it may concern:

Be it known that I, SIGMUND WILLNER, a subject of the Emperor of Germany, and a resident of Chicago, county of Cook, State of Illinois, have invented certain new and useful Improvements in Apparatus for Injecting Coloring-Matter, Preservatives, or Chemicals into Logs, of which the following is a specification.

The main objects of this invention are to provide an improved form of apparatus for injecting coloring matter, preservatives, fire-proofing and other chemicals into the pores of the wood of logs; to provide an improved form of log engaging head for apparatus of this character; and to provide an improved system of chemical and suction pipes whereby the direction of flow of chemicals through the log may be readily reversed without necessitating the reversal of the log between injecting heads for the purpose of insuring uniform distribution of injected material throughout the interior of the log. These objects are accomplished by the device shown in the accompanying drawings, in which—

Figure 1 is a diagrammatic view of an apparatus constructed according to this invention. Fig. 2 is a sectional detail showing the shape of the sockets in the log engaging heads, and the method of adjusting the heads toward and away from each other. Fig. 3 is a side elevation of the movable head. Fig. 4 is an end elevation of the same. Fig. 5 is a bottom plan of the same, showing the arrangement of the wheels upon which it is mounted. Fig. 6 is an end elevation of the stationary head.

In the form shown in the drawings, the apparatus comprises a stationary head 1, a movable head 2, each having a socket for engaging the corresponding end of a log for supporting the same between said heads, and a system of piping for forcing chemicals into the cavities within said heads and causing such chemicals to flow through the pores of the log, as will be hereinafter described.

The stationary head 1 is provided with base flanges 3 for bolting it to the floor or to a suitable bed plate not shown. The movable head 2 is provided with a carriage 4 which is mounted upon wheels 5 and 6. The wheels 5 are flanged and ride upon a pair of rails 7 which extend parallel to common center line of the two heads. The wheel 6 rides upon an inverted T-shaped rail 8 intermedi-

ate between the rails 7, as will be seen from Fig. 4. The wheel 6 is grooved so as to engage the upwardly disposed flange of the rail 8 in such manner as to keep the head 2 in perfect alinement with the head 1 for all positions of adjustment.

Each of the heads is provided with a pair of lugs extending horizontally outward at opposite sides thereof, and corresponding lugs are connected by means of rods 9. These rods are provided with heads 10 at one end, and are squared at 11 near said end to fit the square recesses 12 in the lugs of the corresponding head. The rods 9 are threaded for a considerable distance inward of their other ends, and extend through recesses 13 in the other head. The lugs are preferably provided with slots extending into the recesses 12 and 13, so that the rods 9 may be readily inserted and withdrawn from said recesses. Nuts 14, preferably in the form of hand wheels, are mounted upon the threaded ends of the rods 9, and engage the corresponding lugs so as to draw the heads together.

The log engaging sockets 15 of the heads face each other, and are preferably conical and in alinement with each other. Each of the sockets is exactly circular in transverse section, and its longitudinal elements are straight lines. This insures that when the ends of the log are turned to a conical taper by means of a suitable machine, the drawing of the heads together will cause them to have fluid-tight engagement with the log around the entire periphery of its end, regardless of the shape of the log. For this purpose, the conical taper of the log should be of exactly the same angle as that of the sockets 15. When the log is forced into the socket there will then be fluid-tight contact around its entire periphery. Care should be taken in tapering the log, to insure that no depressions in the surface of the log extend to the small end of the taper. Then there will always be a certain amount of tapered surface on the log in contact with the inner lines of the socket.

Each of the sockets 15 is provided with an inlet 16. The pipe 17 communicates with a tank or other suitable source of chemical under pressure, and the pipe 18 communicates with a source of a different chemical under pressure. For instance, the pipe 17 may supply a suitable chemical for removing the sap from the log, and the pipe 18 may

supply a dye for coloring the log. The pipe 19 connects both of the pipes 17 and 18 with the inlet 16 of the head 1, and a pipe 20 connects said pipes 17 and 18 with the head 2.

5 The pipe 20 is provided with a suitable flexible section 21, which permits of the proper range of movement of the head 2. The respective inlets 16 of the heads 1 and 2 also communicate by means of pipes 22 and 23
10 with a pipe 24 extending to a suitable suction pump for exhausting fluid from the cavities in the heads. The pipe 23 is also flexible throughout a certain part of its length. The pipes 17, 18, 19, 20, 22 and 23 are re-
15 spectively controlled by the valves 25, 26, 27, 28, 29 and 30. By the manipulation of these valves, as will be readily seen from the drawings, the operator is enabled to force chemicals into one end of the log, and draw off sap
20 or other liquid at the other end. He may then reverse the direction of flow of the chemicals through the log, and insure uniform distribution thereof throughout the material of the log.

25 The operation of the device shown is as follows:—The ends of the log are first chamfered, preferably by machine, to a conical taper having the same angle at its apex as that of the taper of the sockets 15, the cham-
30 fer being cut sufficiently deep to extend below any irregularities in the surface of the log. The log is then mounted between two heads, and the heads are forced together until a fluid-tight engagement with the log is
35 secured. Assuming that the pipe 17 supplies the chemical for removing the sap and resinous matter from the pores of the wood, then said pipe would first be put into communication with one end of the log, while the
40 valve controlling the suction pipe at the other end is open. This will cause the sap-removing chemical to flow through the log in one direction. As the chemical penetrates the log, it is gradually reduced in strength,
45 and, in order to insure uniform distribution of the chemical throughout the log in a minimum space of time, the valves are manipulated so as to cause the chemical from the pipe 17 to flow in the opposite direction
50 through the log. After the log has been sufficiently treated by the first chemical, the valve 25 is closed, and the same operation is repeated with reference to the chemical from the pipe 18, which contains the coloring
55 matter or other material which is to be injected into the pores. The manipulation of the valves is so simple that it will be readily understood without detailed description.

What I claim as my invention and desire
60 to secure by Letters Patent is:—

1. A device of the class described, comprising a pair of heads mounted in alinement with each other and adapted to engage opposite ends of a log for supporting it between
65 them, each of said heads having a socket

adapted to fit liquid-tight around the periphery of the log and provide a liquid chamber within the head at the end of the log, a suction pipe having branches connected with each of said chambers, a fluid inlet pipe
70 having branches respectively connected with each of said chambers, valves controlling said branches and adapted to be set to permit fluids to be forced through the log in either direction at the will of the operator. 75

2. A device of the class described, comprising a pair of heads mounted in alinement, each having a socket facing the other and adapted to receive the end of a log, for supporting such log between said heads, means
80 for admitting chemicals to the socket of each of said heads, suction connections for drawing fluid from each of said heads, and a system of valves controlling said inlet and suction connections and adapted to cause chem-
85 icals to be passed through the log from one head toward the other in either direction at the will of the operator.

3. A device of the class described, comprising a pair of heads mounted in alinement
90 with each other and adapted to engage opposite ends of a log for supporting it between them, each of said heads having a socket adapted to fit liquid-tight around the periphery of the log and provide a liquid chamber
95 within the head at the end of the log, a suction pipe having a suction device connected therewith and having branches connected with each of said chambers, a fluid inlet pipe having branches respectively connected with
100 each of said chambers, valves controlling said branches and adapted to be set to permit fluids to be forced through the log in either direction at the will of the operator.

4. A device of the class described, comprising a pair of heads mounted in alinement
105 with each other and adapted to engage opposite ends of a log for supporting it between them, each of said heads having a socket adapted to fit liquid-tight around the periphery of the log and provide a liquid chamber
110 within the head at the end of the log, a suction pipe having a suction device connected therewith and having branches connected with each of said chambers, a fluid inlet pipe having a fluid pressure device connected
115 therewith at its supply end and having branches respectively connected with each of said chambers, valves controlling said branches and adapted to be set to permit
120 fluids to be forced through the log in either direction at the will of the operator.

5. A device of the class described, comprising a pair of heads mounted in alinement
125 with each other and adapted to engage opposite ends of a log for supporting it between them, each of said heads having a socket adapted to fit liquid-tight around the periphery of the log and provide a liquid chamber
130 within the head at the end of the log, a suc-

tion pipe having branches connected with
each of said chambers, a fluid inlet pipe hav-
ing branches respectively connected with
each of said chambers, valves controlling
5 said branches and adapted to be set to per-
mit fluids to be forced through the log in
either direction at the will of the operator,
one of said heads being movable toward and
away from the other, and said fluid inlet and
10 suction pipes each having a flexible section

adapted to permit the movement of said mov-
able head without disturbing its connection
with said inlet pipe.

Signed at Chicago this 10th day of Octo-
ber, 1907.

SIGMUND WILLNER.

Witnesses:

WM. R. RUMMLER,
MARY M. DILLMAN.