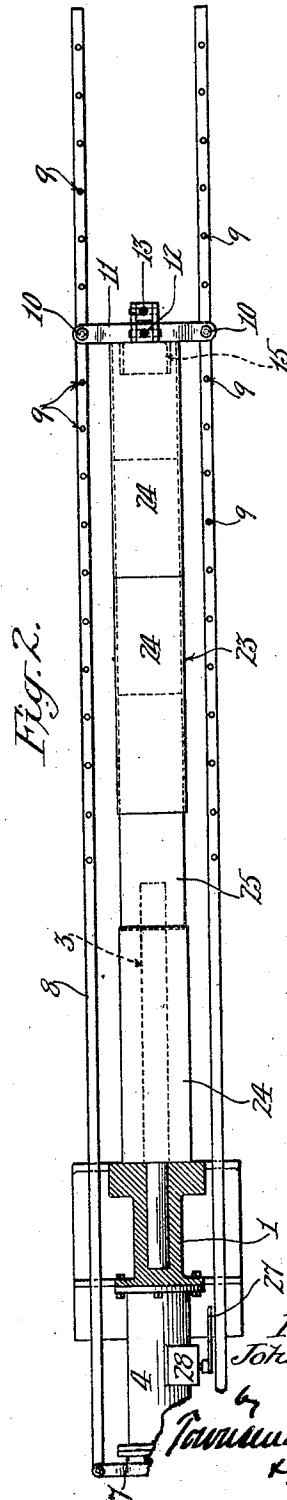
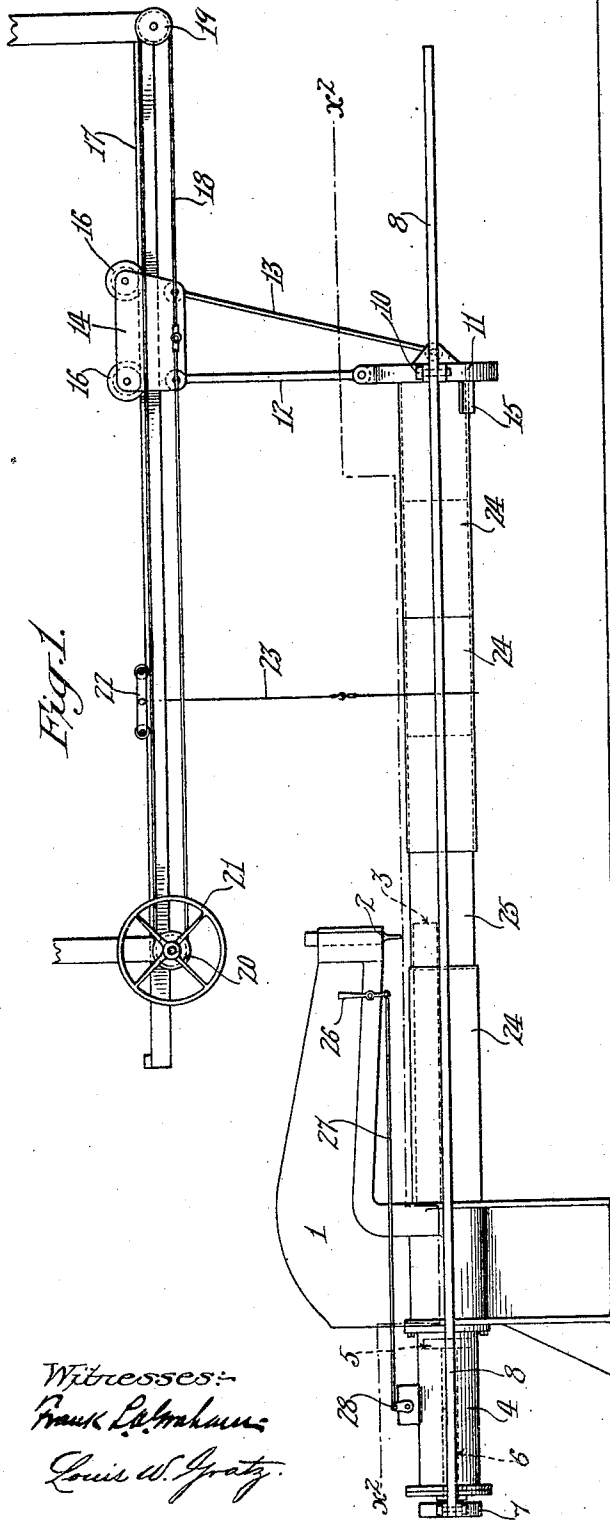


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HYDRAULIC MACHINE FOR MAKING CASING.
APPLICATION FILED DEC. 17, 1908.

Patented Oct. 26, 1909.
2 SHEETS—SHEET 1.

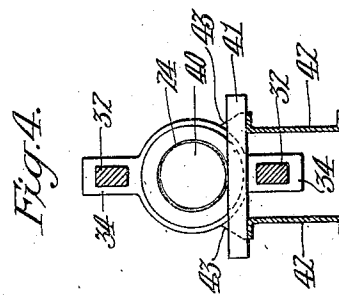
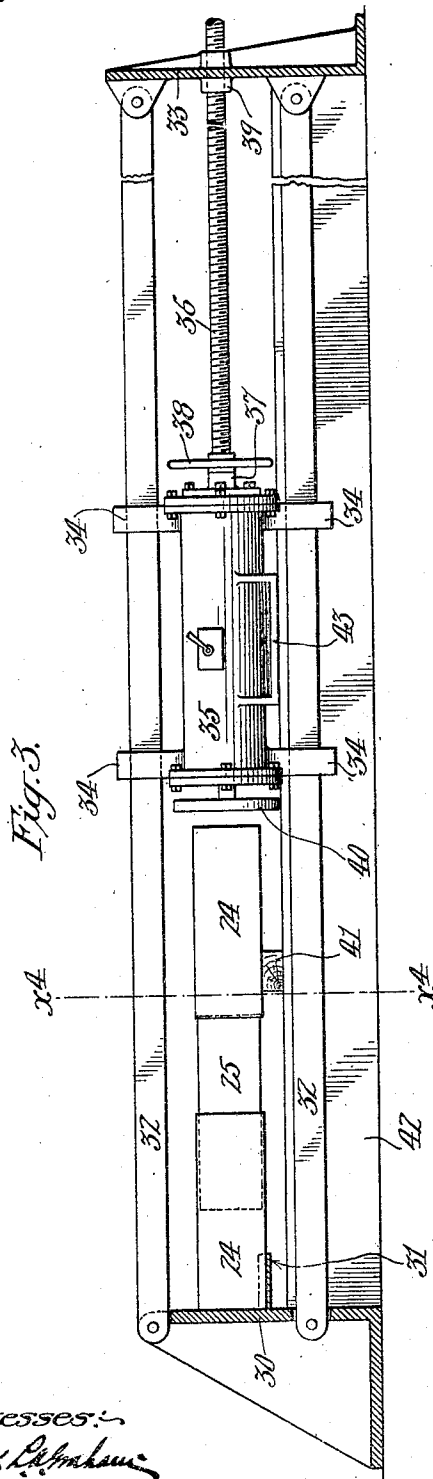
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Witnesses:
Frank P. Adams
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UNITED STATES PATENT OFFICE.

JOHN R. FRENCH, OF LOS ANGELES, CALIFORNIA, ASSIGNOR TO LACY MANUFACTURING COMPANY, OF LOS ANGELES, CALIFORNIA, A CORPORATION.

HYDRAULIC MACHINE FOR MAKING CASING.

937,990.

Specification of Letters Patent.

Patented Oct. 26, 1909.

Application filed December 17, 1908. Serial No. 468,081.

To all whom it may concern:

Be it known that I, JOHN R. FRENCH, a citizen of the United States, residing at Los Angeles, in the county of Los Angeles and State of California, have invented a new and useful Hydraulic Machine for Making Casing, of which the following is a specification.

The casing which is constructed with this machine consists of an outer series of pipe sections arranged with their ends close together and a series of pipe sections closely fitting within the outer sections and the ends of the inner sections being substantially midway of or alternating with the ends of the outer sections, so that the joints are staggered and the pipe is of great strength. In the construction of such casing heretofore the outer section has been driven over the inner section by manually driving it on, one method having been to suspend the completed portion of the casing in a sling, and the inner section having been started it was driven home by manually ramming the tube against a rigid support. This process required the services of two men, was extremely fatiguing work, requiring great muscular energy, and the ends of the sections became battered in ramming them against a rigid support.

It is the object of the present invention to enable the sections to be quickly forced together by hydraulic or other fluid pressure without battering the ends and with but the labor of a single man and not only eliminate the expenditure of great muscular energy but also accomplish the results more quickly and better, thereby attaining considerable economy in the manufacture of the casing and producing a better product.

The accompanying drawings illustrate two forms of the invention, and referring thereto: Figure 1 is a side elevation showing one form of the invention. Fig. 2 is a horizontal sectional view on line x^2-x^2 in Fig. 1. Fig. 3 is a side elevation showing another form. Fig. 4 is a vertical section on line x^4-x^4 Fig. 3.

In the form shown in Fig. 1, 1 designates the main frame of the machine which is provided with a riveting head 2 operated in any well known manner for riveting the sections when completed. 3 is a stake projecting horizontally from the frame 1 and supporting the sections while being riveted and also supporting one end of the tube while

the sections are being driven on. A cylinder 4 projects rearwardly from the frame 1 and is provided with a piston 5 having a piston rod 6 which carries a yoke 7, the latter having two connecting rods 8 which extend forward, as shown, and each connecting rod 8 having a series of holes 9 adapted to be engaged by pins 10 with a driving head 11, the latter being supported by links 12 and 13, the former being pivotally secured to the upper portion of the head 11, and the latter being secured at about the center of the head 11. The link 12 extends vertically and is suspended from a carrier 14, while the link 13 extends rearwardly at an angle and is also connected to the carrier, so that the driving head 11 is not only supported but is held against tilting. The driving head 11 has a curved shelf 15 which forms a support for the end of the casing.

The carrier 14 is mounted on wheels 16 which travel on a stationary track 17. Connected to the carrier 14 is a horizontal cable 18 which is carried on pulleys 19 and 20, and a hand wheel 21 is provided for rotating the pulley 20, whereby the cable or chain 18 may be operated to advance or retract the carrier 14 and driving head 11. Also an auxiliary carrier 22 is mounted to travel on the track 17, and supported by carrier 22 is a cable or chain 23 which is passed around the casing and acts as a sling to support the casing in a horizontal position.

24 designates the outer sections of casing and 25 designates the inner sections of casing. In Fig. 1 I have shown two outer sections of casing put together with the third outer section just slightly started. By operating the lever 26 which acts through link 27 to operate the valve 28, fluid is admitted against the piston 5 and the latter is propelled rearwardly, thus drawing connecting rods 8 with it together with the driving head 11, and the latter forces the inner section 25 into the left hand outer section 24. As soon as this has been accomplished the valve 28 may be reversed to restore the piston 5 and driving head 11, but the next section to be added will necessitate the driving head 11 being retracted sufficiently to admit the section, and this is accomplished by removing pins 10 which allow the driving head 11 to be carried back a distance sufficient to enable a new inner section to be placed on the stake 3, after which the left hand outer section is started over the inner section by ma-

nipulating the hand wheel 21, and as soon as it has been started the valve 28 may then be operated as before to drive the parts together by power.

5 In Figs. 3 and 4 I have shown a modification in which the cylinder and piston are moved or adjusted bodily as required to accommodate the increasing length of pipe as it is built up. In this form 30 designates an
10 abutment having a curved shelf 31 for supporting the adjacent end of the casing. 32 designates two ways which connect the abutment 30 with a head 33. Slidable on the ways 32 are brackets 34 which project from
15 the cylinder 35. 36 is a screw which has a swivel connection at 37 with the cylinder 35, and 38 is a hand wheel for turning the screw 36. The screw 36 extends through a nut 39
20 the cylinder 35 together with its plunger 40 may be adjusted bodily along the ways 32 and thus place it in proper position for the plunger 40 to operate against the end of the section. In this form the casing may be supported
25 by a timber 41 placed across the bed plates 42.

What I claim is:

1. A cylinder and piston, a pair of links connected with the piston, a head adjustably
30 connected with said links, a carrier supporting said head, and a track for said carrier.

2. A cylinder and piston, a pair of links connected with the piston, a head adjustably connected with said links, a carrier supporting
35 said head, a track for said carrier, and

manually operated means for moving said carrier and thereby adjusting the space between said head and the cylinder.

3. A cylinder and piston, a pair of links connected with the piston, a driving head connected with the links, a carrier supporting the driving head, a track on which said carrier is adapted to travel, a pulley at each end of said track, a cable over said pulleys connected to the carrier, and a hand wheel
45 for operating one of said pulleys.

4. A cylinder and piston, links connected with the piston, a driving head, pins in said driving head detachably engaging in holes formed in said links, a carrier for supporting said driving head, and manually operated means for shifting said carrier.

5. A cylinder and piston, a pair of links connected with the piston, a driving head adjustably connected with said links, a curved
55 shelf on the driving head for supporting one end of the casing, a pair of links connected to the driving head, a carrier supporting said links, a track on which said carrier travels, means for shifting said carrier along
60 said track, an auxiliary carrier on said track, and a sling supported by the auxiliary carrier for partially holding the casing.

In testimony whereof, I have hereunto set my hand at Los Angeles, California, this 7th
65 day of December 1908.

JOHN R. FRENCH.

In presence of—

G. T. HACKLEY,
FRANK L. A. GRAHAM.