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PATENTED OCT. 15, 1907.

E. L. RANSOME.
MEANS FOR MOLDING PIPES.

APPLICATION FILED JUNE 13, 1906. RENEWED APR. 26, 1907.

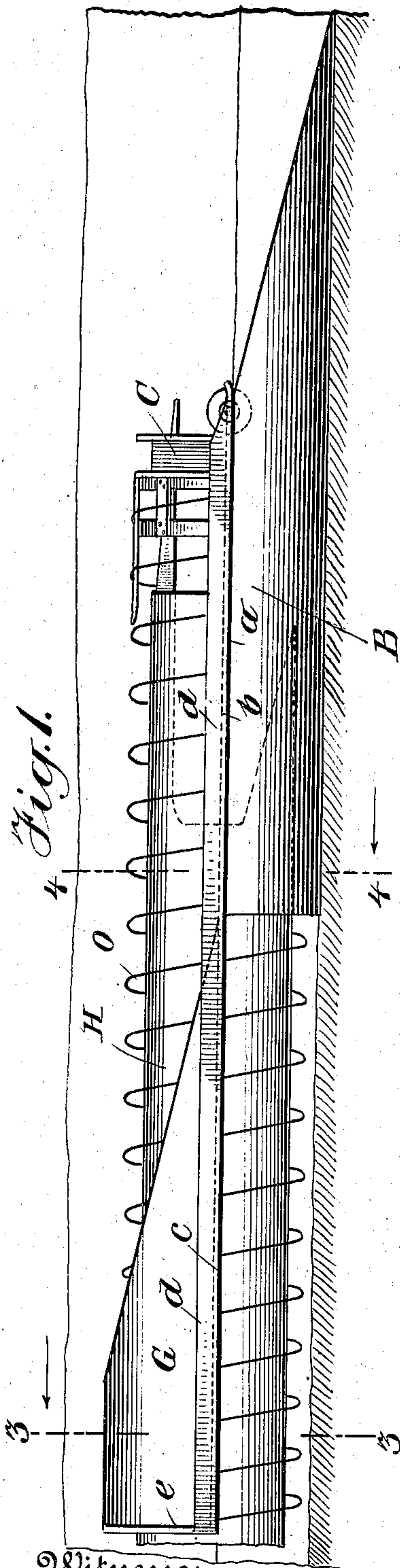


Fig. 1.

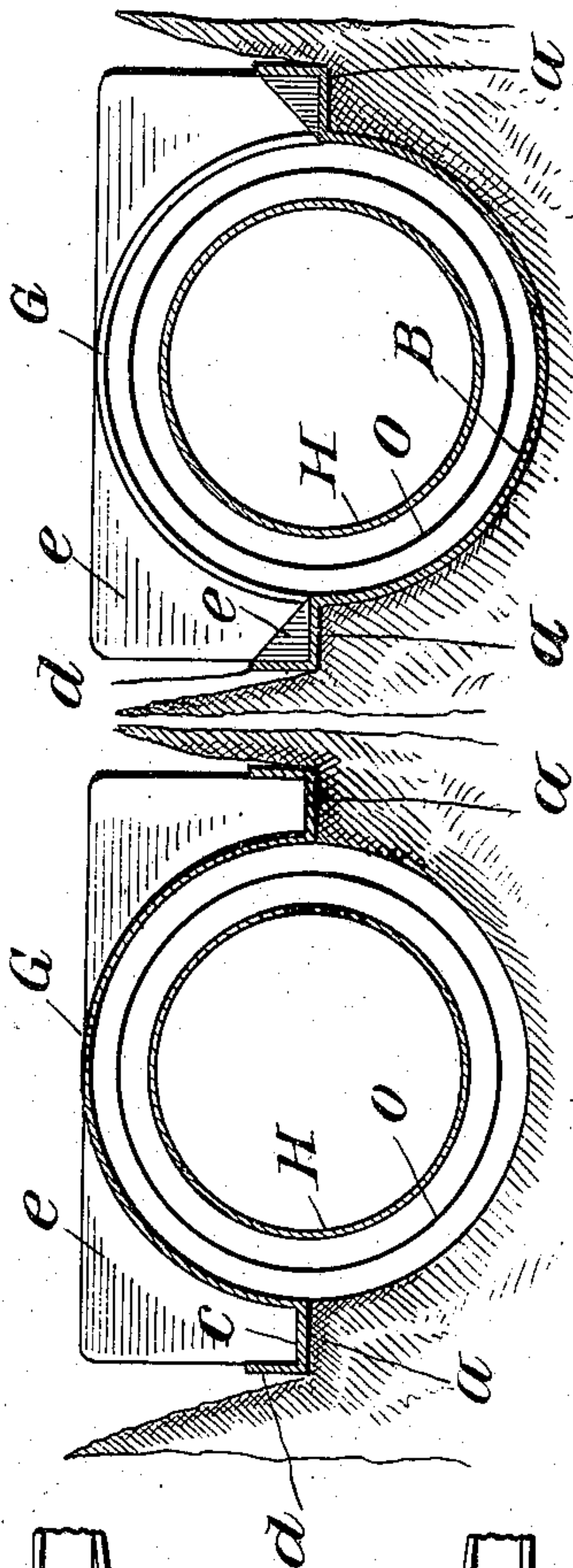


Fig. 2.

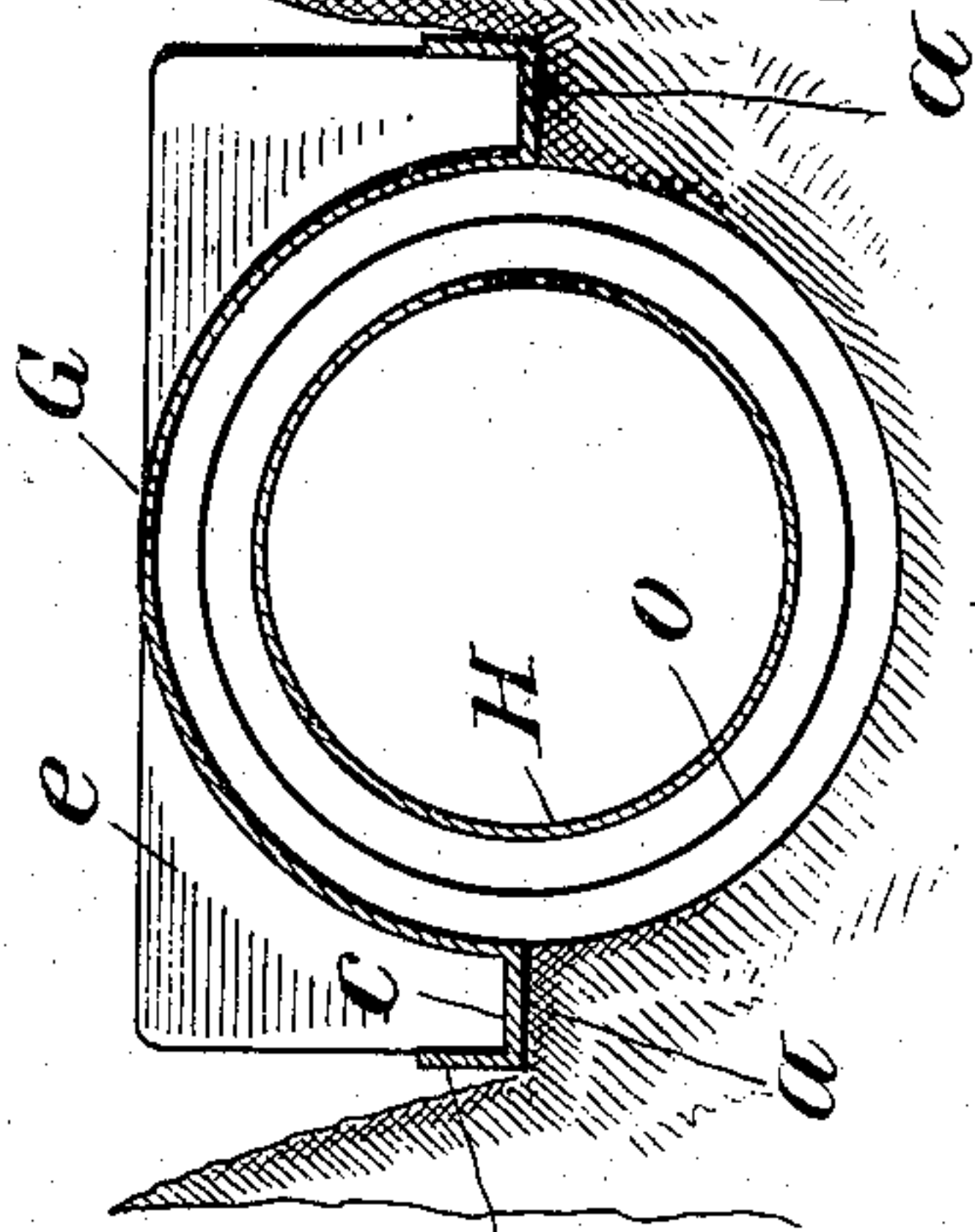


Fig. 3.

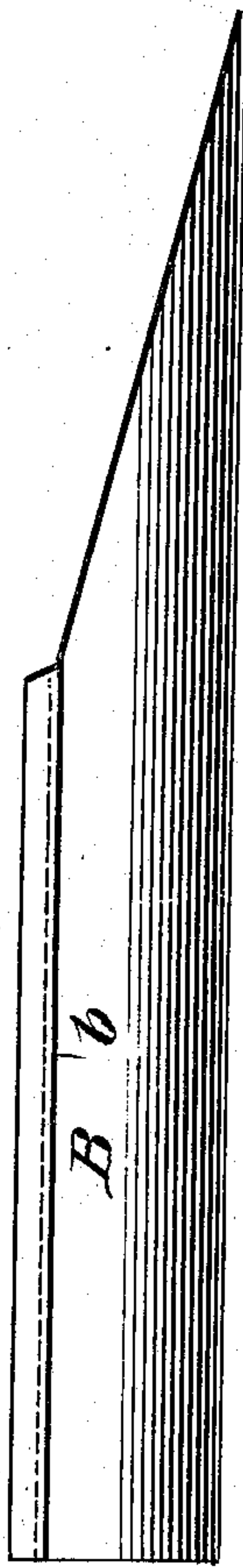


Fig. 4.

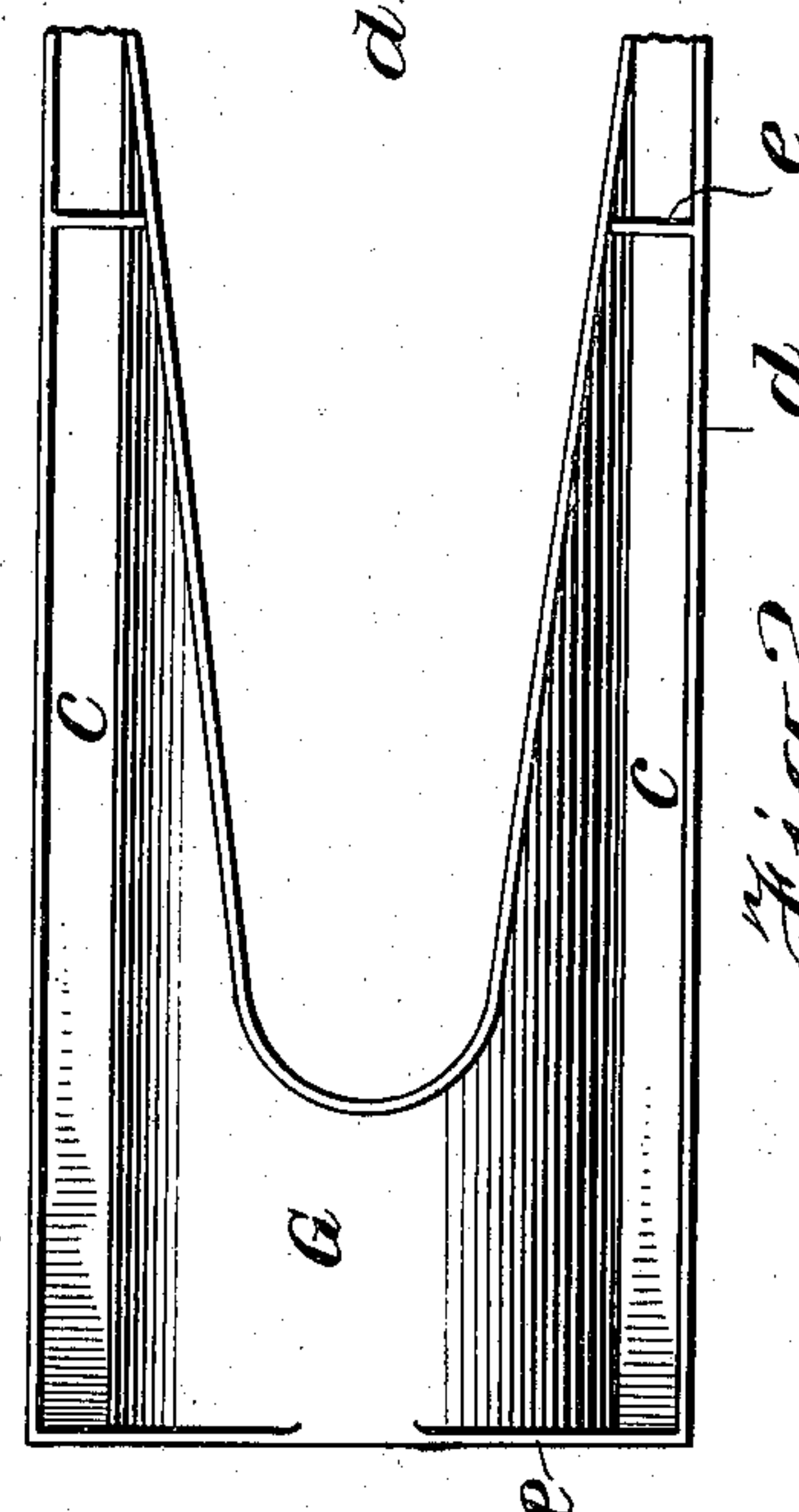


Fig. 5.

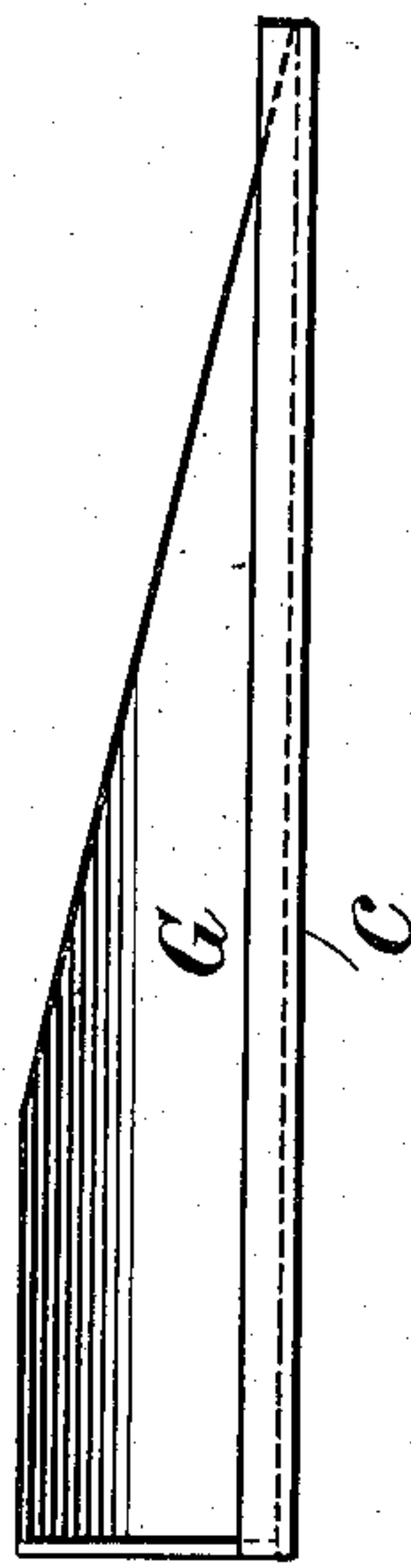


Fig. 6.

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MEANS FOR MOLDING PIPES.

No. 868,007.

Specification of Letters Patent.

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To all whom it may concern:

Be it known that I, ERNEST LESLIE RANSOME, of the borough of Richmond, city, county, and State of New York, have invented certain new and useful Improve-
5 ments in Means for Molding Pipes, of which the following is a full, clear, and exact specification, such as will enable others skilled in the art to which it appertains to make and use the same.

My invention relates particularly to apparatus for
10 molding concrete pipes, conduits or mains in trenches so that after the concrete sets, the pipes may be covered and the trench closed.

In my prior patent No. 517,808 dated April 3, 1894, I have disclosed a machine of this character, the especial
15 purpose of which was to embed in the concrete a reinforcing wire or other reinforcing means by which to increase the strength of the tube. This machine was provided with a top or cap mold and to support the same I employed an overhead structure embodying a shoe
20 running on the core for support. Said shoe, however, was found seriously to interfere with the reinforcing wire and to this extent was objectionable.

Therefore the especial object of my present invention is to support the top or cap mold in such a manner that
25 the reinforcing wire will not be interfered with and the cap mold allowed to pass freely over the same. In attaining this end I so arrange the cap or top mold that it will bear on and be supported by the earth at the sides of the trench or by some means or device provided at
30 this point for the purpose. Preferably the cap mold has flanges at the sides which project outward and bear on benches or ledges formed at the sides of the trench, and to facilitate forming such benches, I prefer to form similar flanges on the bottom mold section or "shaper",
35 so that this section running ahead forms the bench which in turn supports the following top or cap section, dispensing with all overhead support or other structure and allowing the unrestrained and unobstructed application of the reinforcing wire.

40 The invention involves various other features of major or minor importance and all will be fully set forth hereinafter and particularly pointed out in the claims.

Reference is now had to the accompanying drawings which show as examples two ways in which the principles of my invention may be practically embodied and in which Figure 1 is a side view of my prior apparatus
45 reconstructed to embody my present improvements; Fig. 2 is a plan view of the top or cap mold; Fig. 3 is a section on the line 3—3 of Fig. 1; Fig. 4 is a section on the line 4—4 of Fig. 1; and Fig. 5 is a side elevation of the two mold sections of slightly modified arrangement.

In said drawings, B indicates the bottom mold section of "shaper"; H, the core; G the top section or cap;
50 O, the reinforcing wire; and C, the reel carrying the wire, all of which parts perform the same functions as in my prior patent before mentioned.

As shown best in Fig. 3 and 4, the trench in which the apparatus runs is formed on each side with a ledge or bench *a*. This may be done by any means. Preferably, however, the bottom mold section or "shaper" 60 is constructed with side flanges *b* which advance with the mold section and run along the sides of the trenches to pack the earth and form the ledges or benches, assisted when working in some soils by laborers shoveling ahead of the apparatus. The top or cap section G follows through the trench and has at its sides flanges *c* 65 which rest on the earth benches *a* and support the cap G. This results, it may be seen, in supporting the cap section G on the earth, spaced from the core H, allowing ample space between the cap and core for the formation 70 of the pipe and avoiding interference in any way with the reinforcing wire.

If desired, in order to prevent the earth from caving in on the flanges *b* and *c*, said flanges may be provided with upwardly projecting walls *d* at their outer edges 75 and these may be braced by webs or brackets *e* as shown or by other means suitable to the purpose. In my prior patent mentioned, the two mold sections are joined rigidly together and this arrangement is shown in Fig. 1 of the present drawings. In Fig. 5, however, I have 80 shown the mold sections separate and they may, in this event be joined together in any manner desired, for example by a link, chain or the like.

The use and manner of operation of the apparatus will be fully understood from my aforesaid prior patent 85 and other sources of prior knowledge in the art.

Having thus specifically described my invention, what I claim to be new and what I desire to secure by Letters Patent is:

1. An apparatus for forming concrete pipes in trenches, 90 the apparatus having a core and a cap or top mold section with means at one or both sides for supporting it spaced above the core free from the same, and a means adapted to precede said cap or top mold section, to introduce a reinforcing member into the pipe as the same is formed within 95 the unobstructed space between the core and cap or top mold section.

2. An apparatus for forming concrete pipes in trenches, having a cap or top mold section and means for supporting the same against the wall or walls of the trench at 100 one or both sides of the mold section, to permit said mold section to slide on said supporting means horizontally through the trench, as the construction of the pipe advances, whereby an unobstructed space is left under the mold section facilitating the formation of the pipe. 105

3. An apparatus for forming concrete pipes in trenches, having a cap or top mold section and means for supporting the same against the wall or walls of the trench at 110 one or both sides of the mold section, to permit said mold section to slide on said supporting means horizontally through the trench, as the construction of the pipe advances, whereby an unobstructed space is left under the mold section facilitating the formation of the pipe and a means adapted to precede the mold section and serving to 115 introduce a reinforcing member into the pipe as the same is formed in the said unobstructed space beneath the mold section.

4. An apparatus for forming concrete pipes in trenches, the same having a bottom mold section or shaper, a core, a cap or top mold section with means at one or both of its sides for supporting it against the wall or walls of the trenches leaving the space between the core and top mold section unobstructed and a means for introducing a reinforcing member into said unobstructed space between the core and cap or top mold section. 40
5. An apparatus for forming concrete pipes in trenches, having a cap or top mold section extending continuously over the core from one side of the trench to the other and having its sides engaged with and supported by the side walls of the trenches, whereby to leave an unobstructed space beneath said mold section. 45
6. An apparatus for forming concrete pipes in trenches, having a cap or top mold section extending continuously over the core from one side of the trench to the other, said cap or top mold section having at its sides outwardly projecting flanges bearing on horizontal earth benches formed in the walls of the trench, whereby to sustain the mold section wholly from its sides and leave under said mold section an unobstructed space for the formation of the pipes. 50
7. An apparatus for forming concrete pipes in trenches, having a cap or top mold section extending continuously over the core from one side of the trench to the other, said cap or top mold section having at its sides outwardly projecting flanges bearing on horizontal earth benches formed in the walls of the trench, whereby to sustain the mold section wholly from its sides and leave under said mold section an unobstructed space for the formation of the pipe, the said earth benches extending continuously along the trench to permit the said top mold section to be advanced through the trench by sliding its flanges on said earth benches in unison with the advance in the formation of the pipe. 55
8. An apparatus for forming concrete pipes in trenches having a cap or top mold section with its sides engaged on earth benches formed at the sides of the trench for the purpose specified and means adapted to precede the cap or top mold section to form the said benches. 60
9. An apparatus for forming concrete pipes in trenches having a cap or top mold section with outwardly projecting flanges at its sides engaged on earth benches formed at the sides of the trench for the purpose specified and means adapted to precede the cap or top mold section to form the benches. 65
10. An apparatus for forming concrete pipes in trenches having a cap or top mold section with its sides engaged on earth benches formed at the sides of the trench for the purpose specified, and a bottom mold section or "shaper" adapted to precede the cap or top mold section and having means for forming said benches.
11. An apparatus for forming concrete pipes in trenches having a cap or top mold section with outwardly projecting flanges at its sides engaged on earth benches formed at the sides of the trench for the purpose specified, and a bottom mold section or "shaper" adapted to precede the cap or top mold section and having at its sides outwardly projecting flanges adapted to form said benches.
12. An apparatus for forming concrete pipes in trenches having a cap or top mold section with outwardly projecting flanges at its sides engaged on earth benches formed at the sides of the trench for the purpose specified and vertical walls rising from the outer edges of the flanges to prevent the earth falling in on the flanges.
- ERNEST LESLIE RANSOME.
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