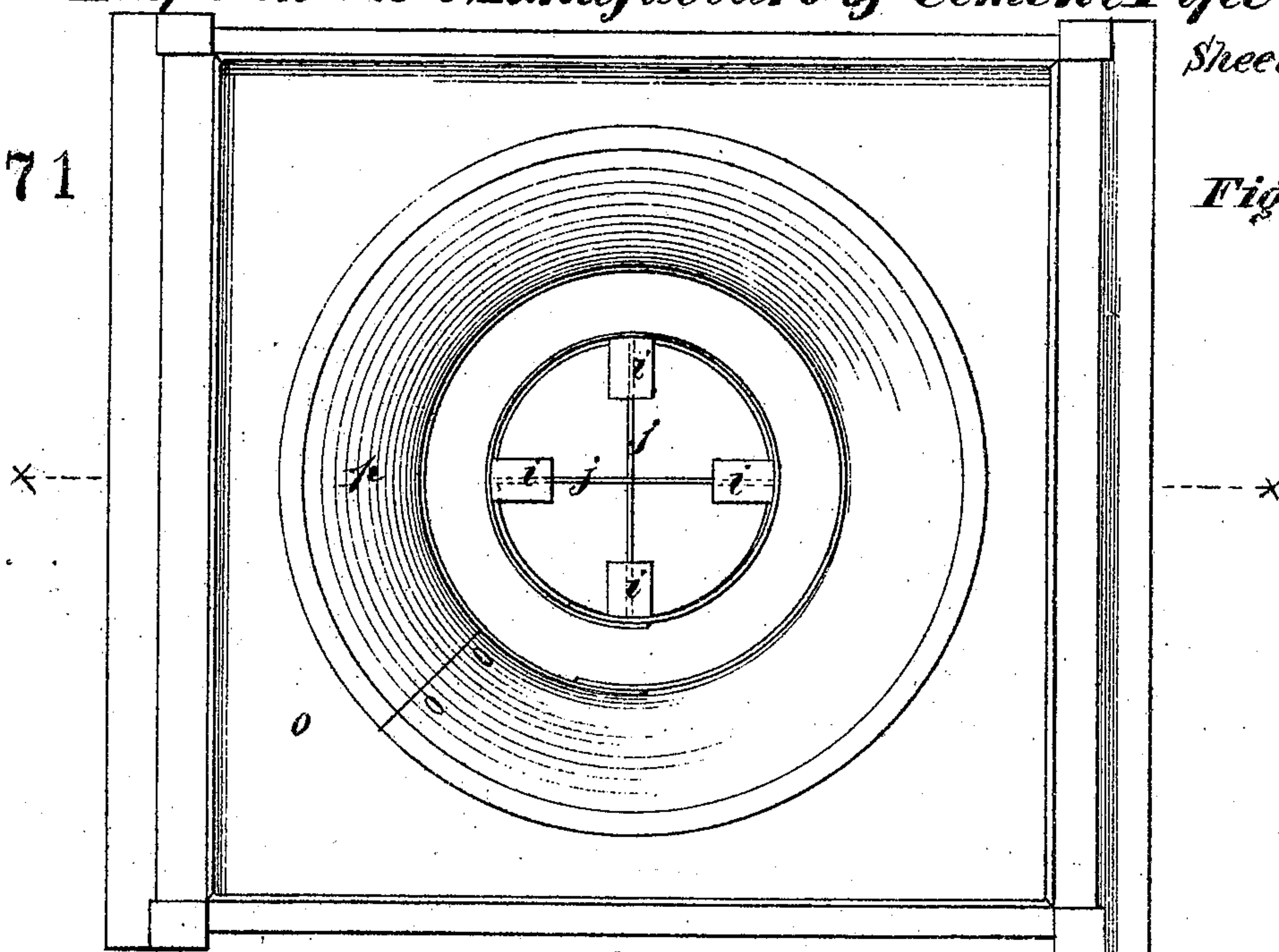


*John W. Stockwell.* **PATENTED JUN 27 1871**  
*Impt. in the Manufacture of Cement Pipe*

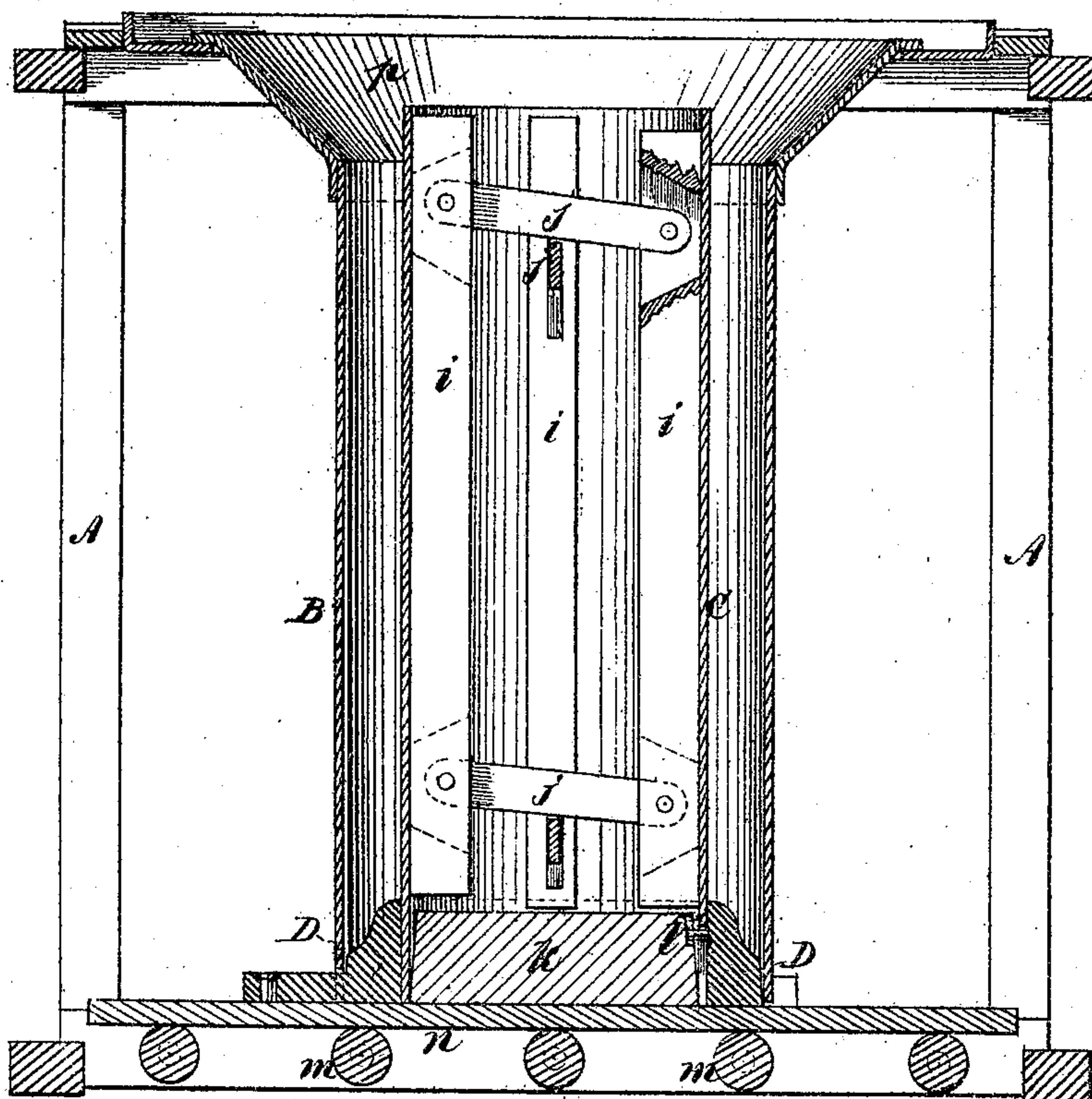
*Sheet No. 1.*

116371

*Fig. 1.*



*Fig. 2.*



Witnesses.

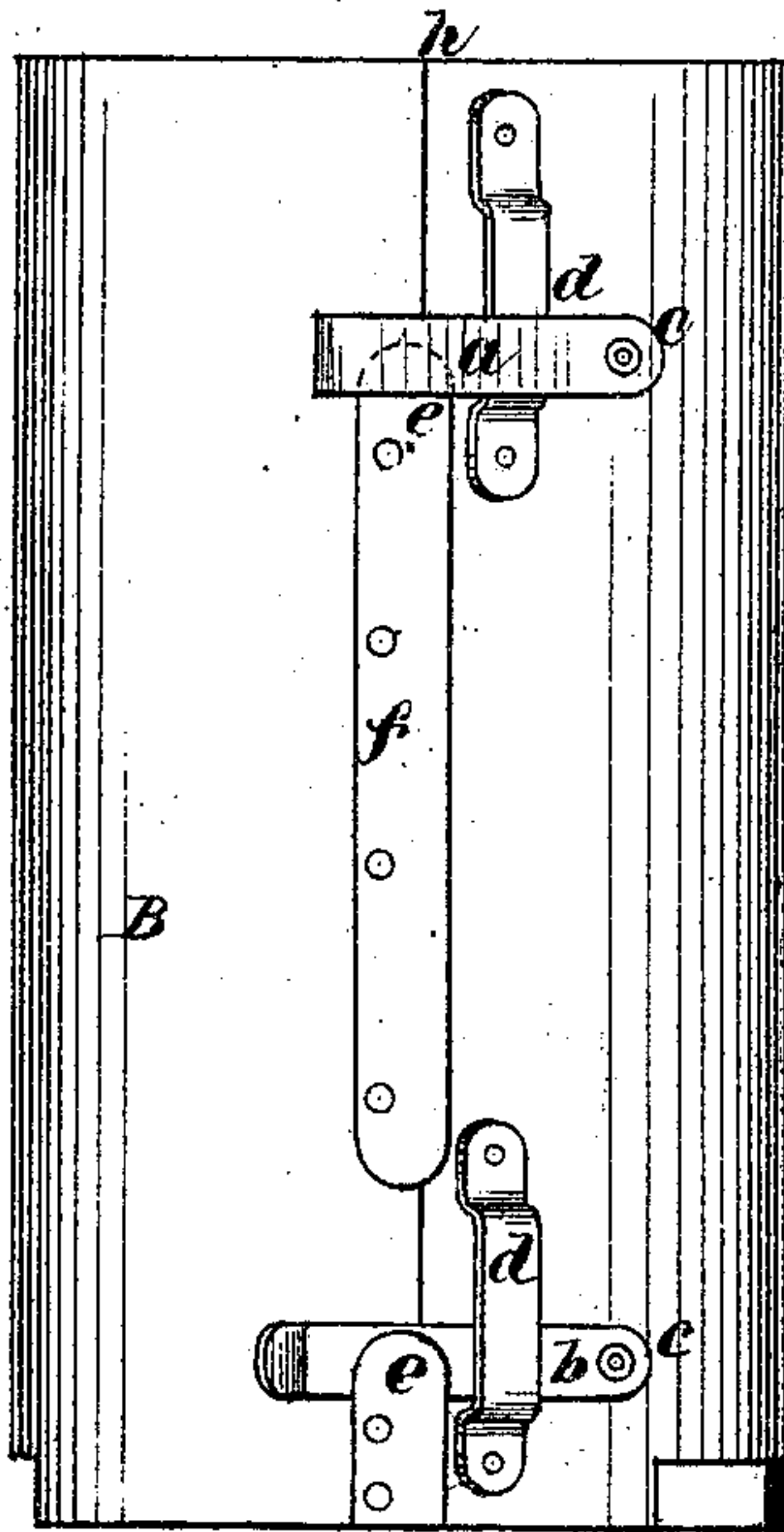
*George E. End.*  
*S. L. Carlisle*

Inventor.

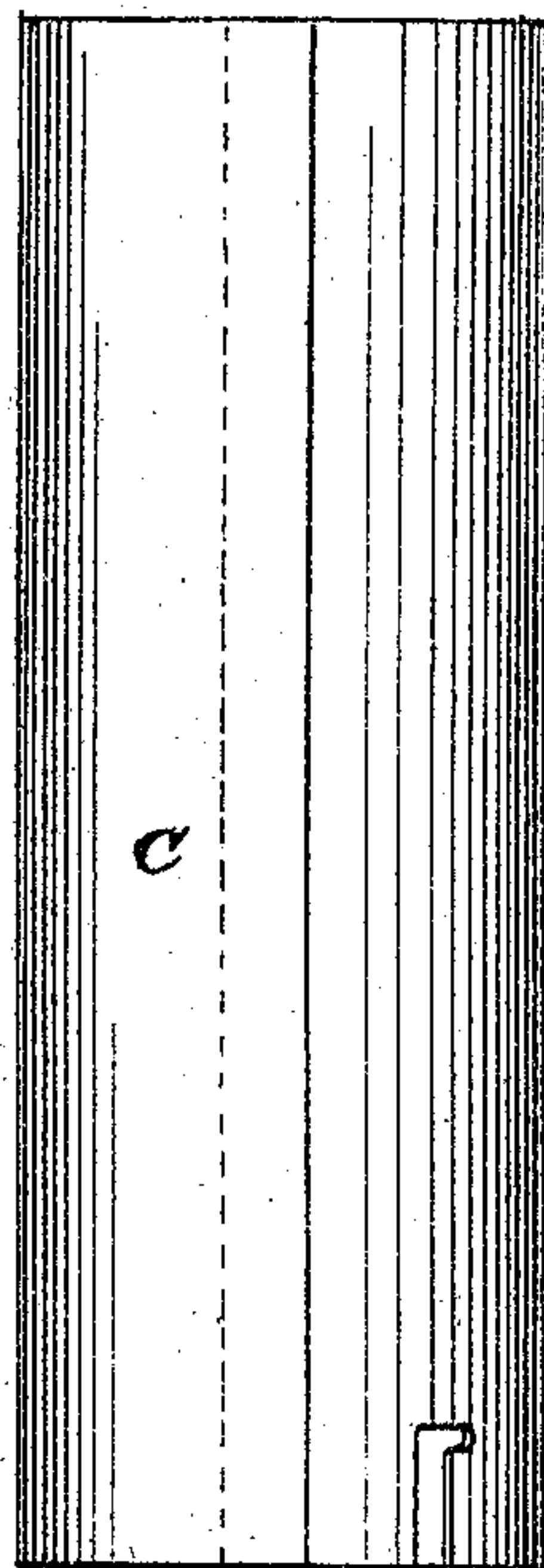
*John W. Stockwell.*

*John W. Stockwell.*  
*Impt. in the Manufacture of Cement Pipe*  
*Sheet No. 2.*

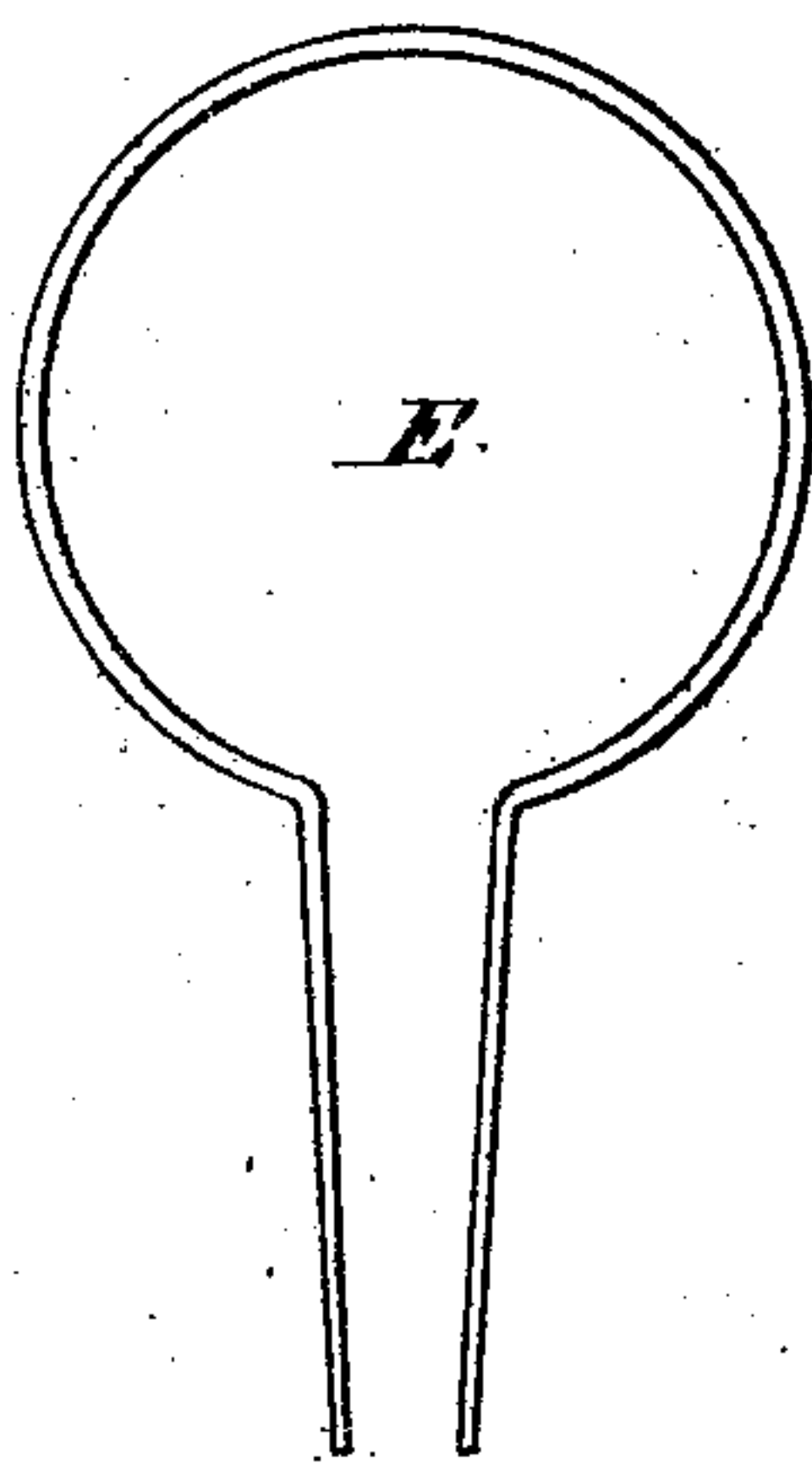
*Fig. 3.*



*Fig. 5.*



*Fig. 4.*



Witnesses.

*George E. Ford*  
*S. L. Carlton*

Inventor.

*John W. Stockwell.*



# UNITED STATES PATENT OFFICE.

JOHN W. STOCKWELL, OF PORTLAND, MAINE.

## IMPROVEMENT IN DRAIN-PIPE MACHINES.

Specification forming part of Letters Patent No. 116,371, dated June 27, 1871.

*To all whom it may concern:*

Be it known that I, JOHN W. STOCKWELL, of Portland, in the county of Cumberland and State of Maine, have invented certain new and useful Improvements in the Manufacture of Cement Pipe for various purposes; and I hereby declare the following to be a full, clear, and exact description thereof, reference being made to the accompanying drawing forming part of this specification, in which—

Figure 1 shows a top plan. Fig. 2 shows a sectional elevation. Fig. 3 shows an elevation of a case and fastenings. Fig. 4 shows a device to compress the core. Fig. 5 shows a view of the lower end of the core.

Same letters show like parts.

The object of my invention is to provide certain improvements for the better and more rapid construction of drain, water, and other cement pipe. My improvements consist of an improved method, in combination with the outer case, of securing together the two edges of the case, and, at the same time, of preventing the edges from overlapping. My invention also further consists in certain improvements in relation to the core, which will be hereinafter described. My invention also relates to certain improvements for supplying the case with material from which the pipe is made; to certain devices for removing the pipe and case when a piece of pipe is manufactured; and also to a device for contracting the core; all of which will be more fully described hereafter.

I will describe the devices in the following order: The method of fastening the outer case is seen in Fig. 3. *a* and *b* show latches rising or dropping on the pivots *c*, and controlled in their motions by guides *d*, and dropping also into catches *e*, to hold the two parts together. *f* is a strip riveted to one side of the case in order to strike against the guides *d*, so that the case shall just close, and no more; also, to form an overlapping piece to close the seam *h*. The latches are of different construction, one (the upper) being double, so as to pass both over and under *d*, and the lower simply passing under its guide. The device to keep expanded the spring metallic core which I employ is by a pair (or more, if desired) of parallels, *i i*, united by bars *j j*, which form joints, or are pivoted into the parallels. When so pressed down into the hollow of the core as to place the bars *j j* in a horizontal posi-

tion the case is expanded as far as they will do it. Then, when the joint of pipe is complete, one side of a parallel is pulled up, allowing the core to contract, and so leave the pipe in a smooth state on the inside.

Forcing a core up or down through the newly-made piece of pipe is destructive to the glaze made by the above process. Besides, less power is required, less time, and less consequent expense to force out the core. One of the cross-bars being under the other, when the parallels are loosened in the core, the whole is easily lifted out of the core. It will, of course, be understood that the pieces *i* extend down the whole length of the core.

The device to expand the core, when placed in position, is a dome or conical-shaped piece within the bottom former and core at the bottom. When the expansible core is placed in its position the conical piece expands it sufficiently for the size of pipe desired to be made. *k* shows this device. Light hollow cores would be liable to revolve with the rotating packer of the cement, if such were used. To prevent this I set the small stud *l* into the space between the dome and bottom former, where the core is placed, and then cut the core, as seen in Fig. 5, to fit down over the stud. Then, by a short turn to one side, it is also prevented from being lifted up as well as rotated.

When the core does not sufficiently contract so as to slip easily up out of the newly-made cement pipe, I employ the pinchers or contractor, Fig. 4, to slip over the core and further compress it. *m* show fixed rollers set in the bottom piece of the frame *A*. On these move the bed-pieces *n*. As fast as a piece of pipe is made the case and the piece *n* are all slipped off the rollers and another moved into their place. This, it will be seen, would prove very convenient with a fixed rotating packer like one before this patented by me, reissue No. 4,220. *o* shows a wide dish or pan to receive the material of the pipe before being fed into the case, and with it I have here combined the funnel-shaped feeder *p*. The core is made overlapping, as illustrated in Figs. 1 and 4.

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

1. The combination, with the mold-case *B*, Fig. 3, of latches *a b*, guides *d*, catches *e*, and plate *f*, when constructed, arranged, and operating as and for the purpose herein shown and described.

2. The combination of the spring core C with expanding devices *i j k*, as and for the purposes herein set forth.

3. The arrangement herein shown of the spring core C, expanding devices *i j k*, and bottom former D, all constructed and operating as and for the purpose described.

4. The combination of the spring core C with the core-contractor E, as set forth.

5. The arrangement herein shown of the pan *o*, feeding-funnel *p*, mold-case B and its adjuncts, rollers *m*, and bed-piece *n*, when constructed and operating as shown and described.

JOHN W. STOCKWELL.

Witnesses:

WM. HENRY CLIFFORD,  
GEORGE E. BIRD.