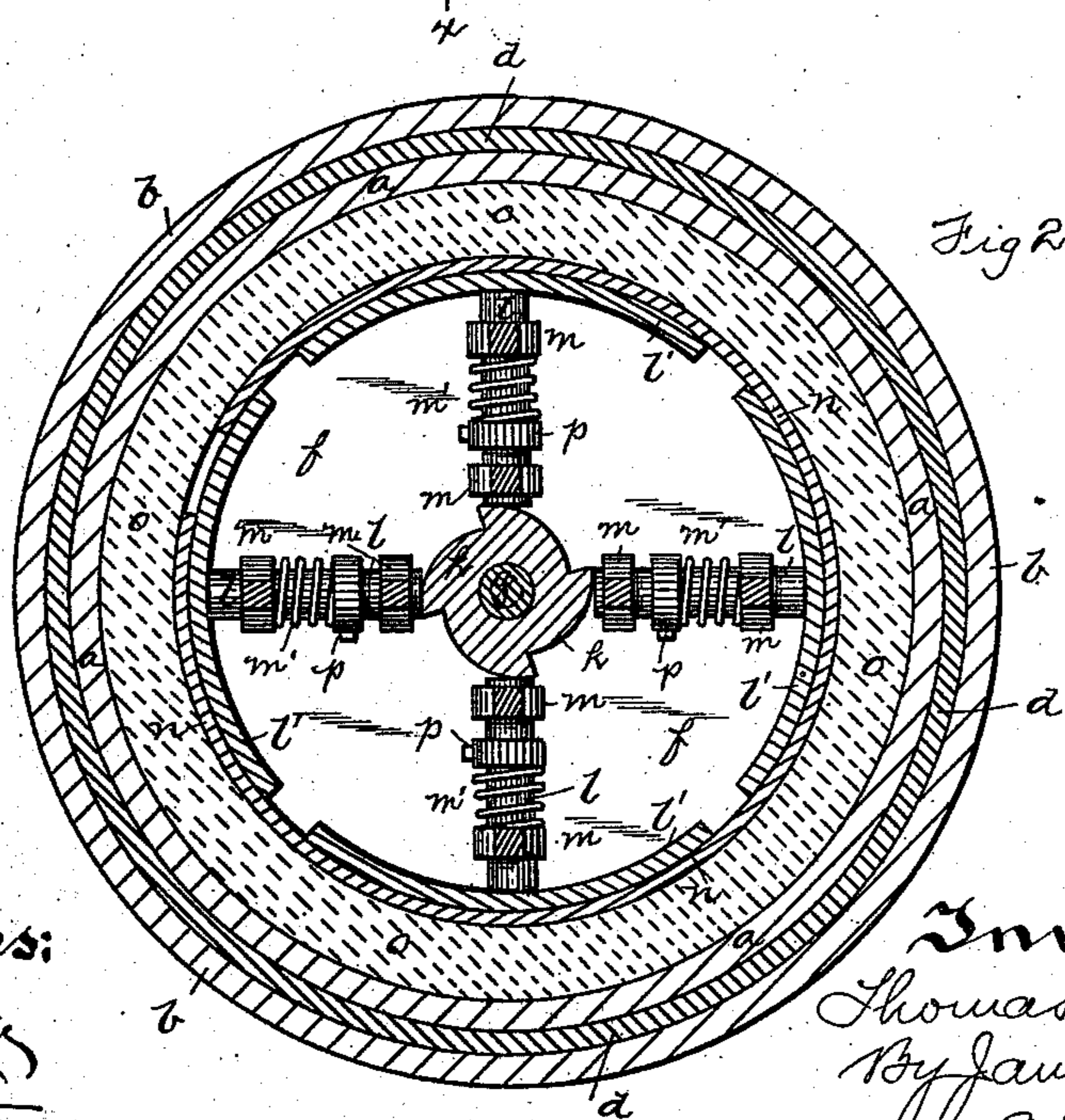
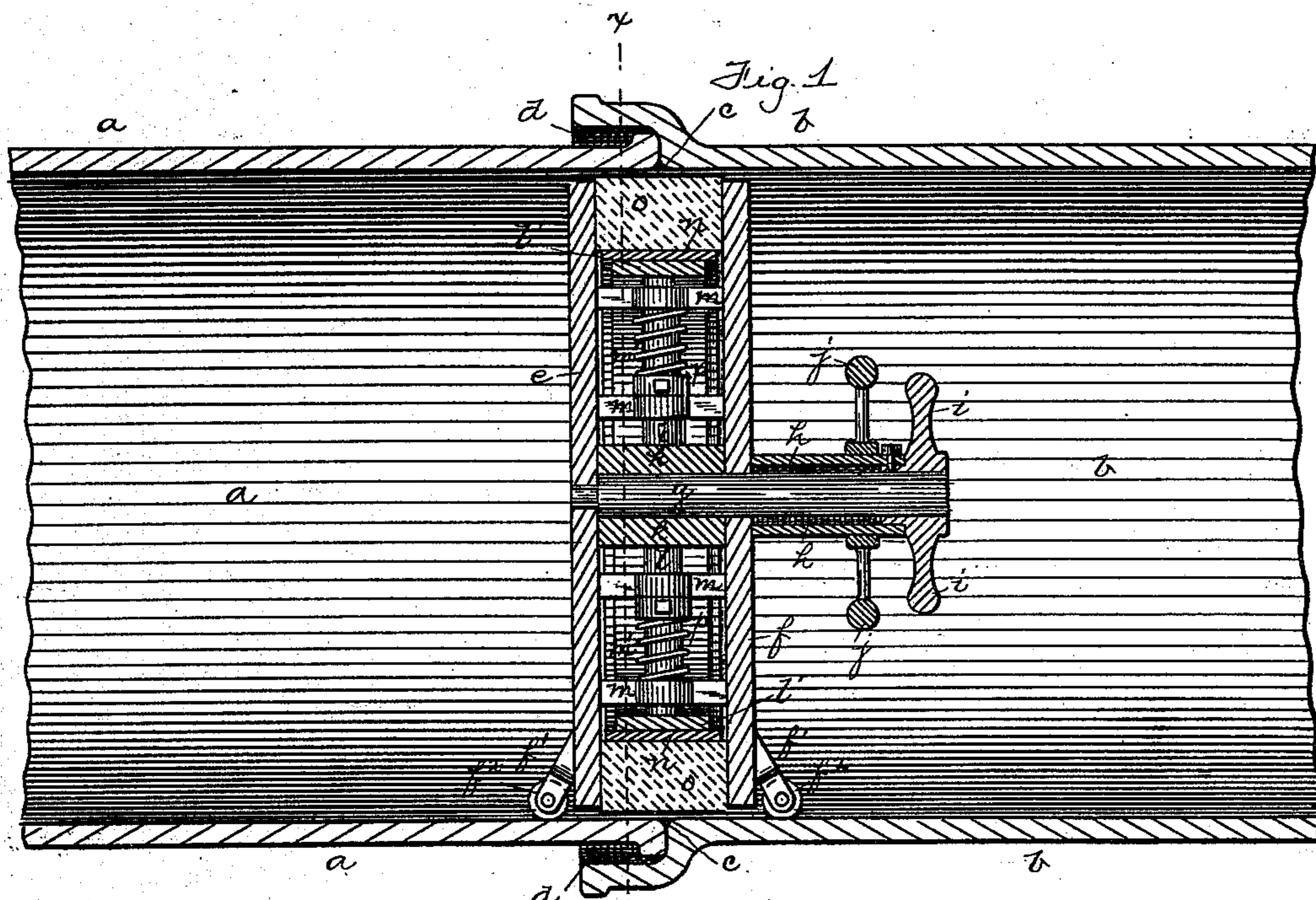


(No Model.)

T. SHELTON.
APPARATUS FOR SEALING PIPE JOINTS.

No. 413,738.

Patented Oct. 29, 1889.



Witnesses:
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UNITED STATES PATENT OFFICE.

THOMAS SHELTON, OF McKEESPORT, PENNSYLVANIA, ASSIGNOR TO THE
NATIONAL TUBE WORKS COMPANY, OF SAME PLACE.

APPARATUS FOR SEALING PIPE-JOINTS.

SPECIFICATION forming part of Letters Patent No. 413,738, dated October 29, 1889.

Original application filed June 16, 1887, Serial No. 241,489. Divided and this application filed April 20, 1889. Serial No. 307,985.
(No model.)

To all whom it may concern:

Be it known that I, THOMAS SHELTON, a resident of McKeesport, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Apparatus for Sealing Pipe-Joints; and I do hereby declare the following to be a full, clear, and exact description thereof.

My invention relates to an apparatus for the sealing of pipe-joints, its object being to prevent the calking material from running through the crevice or crevices of the joint into the interior of the pipe without the use of any permanent packing material. With almost all pipe-joints, and especially in cast-iron pipe, there is between the spigot end and the bowl end a crevice through which the calking material will run into the interior of the pipe when poured into the calking-recess. In connecting the sections of cast-iron pipes there is always inserted in the rear end of the calking-recess formed between the spigot end and the overlapping bowl some packing material to pack the base of the calking-recess, and thus prevent the calking material, when poured into the recess, from running through the crevice between the ends of the pipe-sections into the interior of the pipes; but this is objectionable, in that it requires a longer bowl on the pipe to give sufficient depth of recess for both the packing and the calking material, and when the material is to be calked to render the joint tight it has to be driven against a yielding backing, and for this reason cannot be spread or calked so perfectly. Where wrought-iron or steel pipes are connected by lead or like joints, when no packing is used, there is also more or less difficulty with the calking material running through the crevice between the end of one pipe and the abutting pipe or the pipe and the coupling, and when any deviation takes place in the line, so that the pipe does not rest true within the coupling, the leakage becomes quite troublesome.

To enable others skilled in the art to make and use my invention, I will describe the same more fully, referring to the accompanying drawings, in which—

Figure 1 is a vertical central section of a pipe, showing my apparatus ready to be expanded against the crevice of the joint; and Fig. 2 is a section of Fig. 1 on the line *x x*, showing the parts expanded.

Like letters refer to like parts in each of the figures of the drawings.

In the ordinary form of cast-iron-pipe joint—such as shown in the drawings—when the spigot end *a* is inserted in the bowl end *b* there is always a crevice *c*, leading from the calking-recess *d* into the interior of the pipe, through which the calking material may run into the interior when it is poured into the calking-recess. With the ordinary sizes of cast and wrought iron pipe, to prevent this running of the calking material I find the form of apparatus shown in an application filed by me June 16, 1887, Serial No. 241,489, suitable for the purpose, the present application being a divisional application of that application. Where pipes of large diameter are to be joined—such as the joint of a twenty-inch to thirty-six-inch pipe—the form of apparatus shown in the present application is better adapted for the purpose. In this construction the two disks *e* and *f* are rigidly attached to each other at a suitable distance apart, and swiveled or journaled in the disk *e* is the inner rod *g*, which projects through an opening in the disk *f*, and also through the hollow rod *h*, and carries keyed to its outer end the hand-wheel *i*. The hollow rod *h* has a similar hand-wheel *j* secured to it, and it is rigidly attached to the disk *f*, as in the other form of the device heretofore described. The shaft or rod *h* carries between the disks *e* and *f* the tappet-cam *k*, which acts on the ends of rods or bars *l*, sliding in suitable guides *m*, attached to the disks, these rods having on their outer ends or attached thereto the segments *l'*, on which rests the split ring *n*, and outside of this ring is the expanding asbestos ring *o*. To insure the return of the segment-arms *l'* to their normal position, a coiled spring *m'* is placed around each rod, one end of the spring bearing against the upper guide *m* and the other against a collar *p*, attached to the rods *l* be-

tween the guides *m*. In this case, as the pipes are sufficiently large to allow a boy or man to enter within them, the rods *g* and *h* need not be very long, as there is no necessity for them to project beyond the end of the pipe to operate the apparatus. On the outer surface of each disk, near their peripheries, are the lugs *f'*, in which are journaled small guide-rollers *f*², which project slightly beyond the periphery of the disks, and serve to support and guide the apparatus while it is being inserted in the pipe, and overcome friction between the apparatus and interior of the pipe.

When the joint is to be sealed, the boy or man enters the pipe, pushing the device ahead of him, and when the device is in proper position he holds by one hand on the hand-wheel *j* the device in position, while with the other he turns the hand-wheel *i* and rod *g*, which causes the cam *k* on the shaft to act on each one of the rods *l*, forcing them outward and expanding the ring *o* against the contiguous surfaces of the crevice of the joint. The joint is now ready for the calking material to be poured in the recess, as heretofore described.

When the operation has been completed by turning a little farther the hand-wheel *i*, the cam *k* allows the rods to be forced backward by their springs until the ring *o* is contracted sufficiently to be out of contact with the inner surface of the pipe, and thus the device

can be readily withdrawn. This means for calking pipe-joints has the advantage that all liability of the calking material running into the interior pipe is avoided without the use of any permanent packing material, and hence a much tighter joint is obtained, while at the same time the crevice of the joint is filled and a smooth surface formed on the interior of the pipe.

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

1. In an apparatus for closing the crevice of pipe-joints, the combination of the ring *o*, of expansible material, the disks *e* and *f*, the cam *k*, the rods *l*, the segments *l'*, the split ring between the segments *l'* and the expansible ring, and means for rotating said cam *k*, substantially as and for the purposes set forth.

2. An apparatus for closing the crevice of pipe-joints, having a head or body carrying a ring of expansible material, mechanism for expanding the expansible ring against the crevice of the joint, and rollers *f*² on said body to support and guide the movement of said body, substantially as and for the purposes set forth.

In testimony whereof I, the said THOMAS SHELTON, have hereunto set my hand.

THOMAS SHELTON.

Witnesses:

J. N. COOKE,
ROBT. D. TOTTEN.