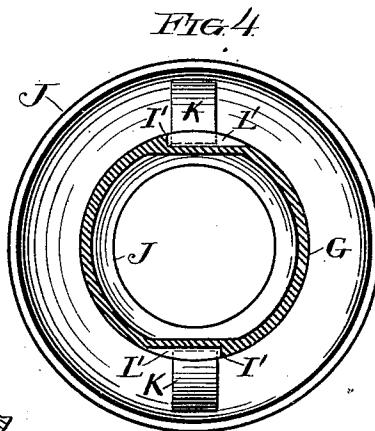
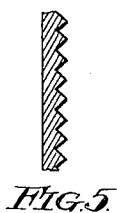
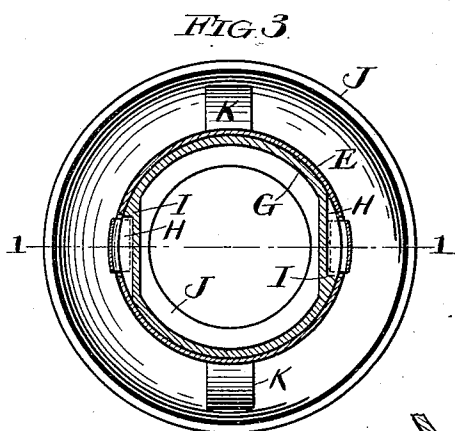
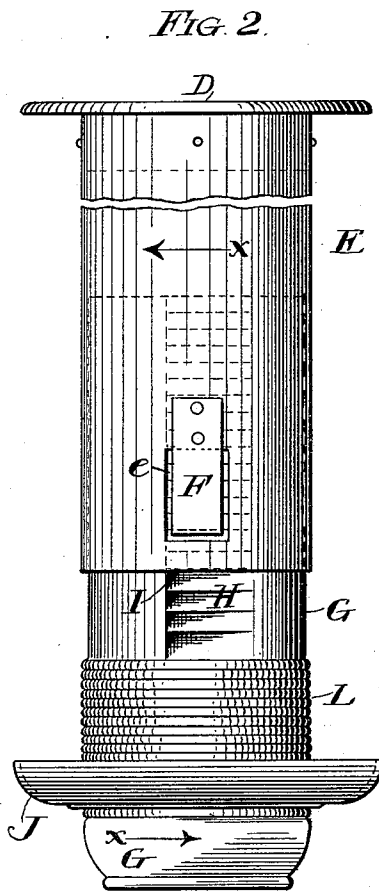
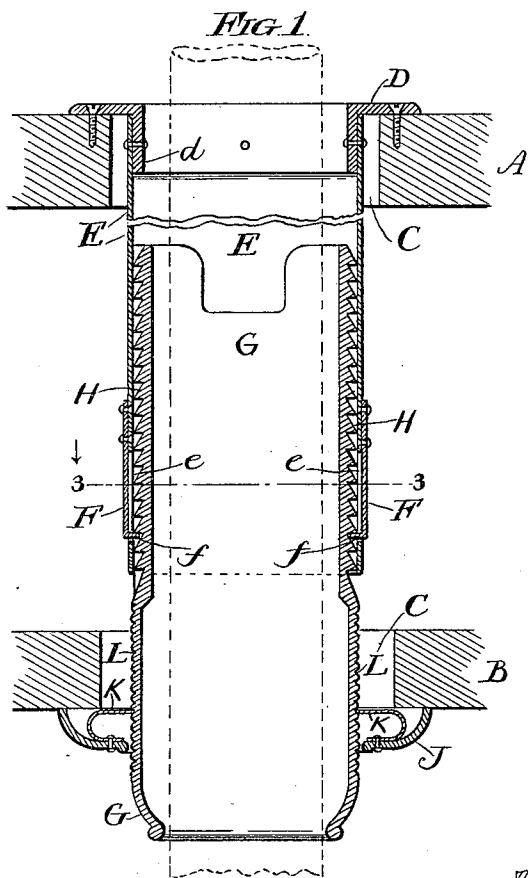


(No Model.)

G. E. DIXON.
PIPE INSULATOR.

No. 481,899.

Patented Aug. 30, 1892.



Witnesses:
J. Halpern
C. E. Kiddlebren

Inventor:
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By his Attorneys
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UNITED STATES PATENT OFFICE.

GEORGE E. DIXON, OF CHICAGO, ILLINOIS, ASSIGNOR OF ONE-HALF TO
ROBERT WEBSTER CALDWELL, OF SAME PLACE.

PIPE-INSULATOR.

SPECIFICATION forming part of Letters Patent No. 481,899, dated August 30, 1892.

Application filed March 1, 1892. Serial No. 423,393. (No model.)

To all whom it may concern:

Be it known that I, GEORGE E. DIXON, a citizen of Great Britain, residing at Chicago, in the county of Cook and State of Illinois, have invented certain new and useful Improvements in Pipe-Insulators, of which the following is a specification.

In equipping a building with a steam or hot-water plant for heating or other purposes it is desirable wherever a pipe passes through a partition of the building—*e. g.*, a floor or wall—to place around it a sleeve which is of somewhat greater diameter than the pipe itself and has its ends open, so as to permit the passage of air through it. The object of this is to prevent the air within the partition—*e. g.*, between the floor and ceiling—from becoming unduly heated. As the thickness of partitions varies, so the length of these insulating-sleeves must also vary, and sleeves having means for adjusting them in length have heretofore been provided. To improve the construction of these adjustable insulating-sleeves is one of the objects of the present invention.

It is customary to place around the pipe and against the partition a collar, which conceals the hole through which the pipe passes and gives the work a finished appearance. Since the pipe is subject to considerable endwise movement, due to expansion and contraction under variations in temperature, the collar cannot be secured to it, because if it is its position will change from time to time, so that at one time it will be some distance from the partition, while at another it will be embedded in it.

It has heretofore been proposed to secure the collar to the insulating-sleeve, and this is what I do, the object of the present invention, so far as this feature is concerned, being to improve the manner of attaching the collar to the sleeve.

The present invention consists in certain features of novelty that are particularly pointed out in the claims hereinafter.

In the accompanying drawings, which are made a part of this specification, Figure 1 is a longitudinal section of the improved insulator and a section of a partition to which it is secured, the position of the pipe to be insu-

lated being indicated by dotted lines. Fig. 2 is an elevation of said insulator. Fig. 3 is a horizontal section thereof on the line 3 3, looking downward. Fig. 4 is a horizontal section showing a modification. Figs. 5 and 6 are sections of fragments of parts of modified construction.

The improved insulator is equally applicable to all partitions, whatever may be their positions; but in this specification I will describe its application to a horizontal partition—*i. e.*, the floor of a building.

A represents the floor proper, and B the ceiling, through each of which is an opening C. To the floor is secured a ring D, (hereinafter called, for the sake of distinction, the "floor-ring,") having a flange *d*, which projects into the opening C, and to this flange is riveted or otherwise suitably secured a sleeve E, which is preferably made of sheet metal and has in its sides, near the bottom, openings *e* for admitting the engaging ends of detents F, which preferably consist of spring-plates riveted to the sleeve E and having their ends bent inward, as at *f*.

G is a second sleeve, which is preferably of cast metal and has upon its sides in positions corresponding to the positions of the detents racks H, with which said detents engage, whereby the two sleeves may be held together. The teeth of these racks do not extend entirely around the sleeve, but are arranged in two longitudinal rows, and instead of being formed by lugs projecting out beyond the plane of the sleeve they are the result of notches or indentations, so that they are all within said plane. The notches terminate abruptly at one end, resulting in shoulders I, which constitute stops for preventing the two sleeves from turning relatively to each other in the directions of the arrows *x* after the detents have engaged the racks and come in contact with the stops. At the other end the notches and teeth merge with the outer surface of the sleeve, so that by turning the two sleeves relatively to each other in a direction opposite to the arrows the detents will be disengaged from the teeth and brought to bear upon the plane surface of the sleeve G, whereupon the two sleeves may be drawn apart. By this arrangement the length of the two-

part sleeve may be varied within the range of the racks, so as to adapt the insulator for use in partitions differing in thickness. Fig. 1 shows the insulator contracted to its limit, and Fig. 2 shows it slightly lengthened.

J is the ceiling-collar, which may be cast with the sleeve G; but I prefer to form it separate and provide it with spring-detents K, that are adapted to engage a rack L, consisting of a number of parallel circumferential ribs or teeth formed on the lower part of the sleeve. By making the ceiling-collar adjustable the utility of the insulator is increased, as greater variations in the thickness of partitions can be compensated for than where the said collar and sleeve are integral. For example, Fig. 1 shows the insulator contracted to its limit. If the partition were narrower and the sleeve G and ceiling collar integral, the insulator would not be available; but said collar being adjustable the insulator is available for partitions that are even narrower within the range of the rack L. Furthermore, the teeth of the rack L are closer together than are the teeth of the rack H, whereby the ceiling-collar can be fitted with more exactness than it could be if only the rack H were used. The teeth of the rack L may be round, as shown by Figs. 1 and 2, or angular and sloping equally on both sides, as shown by Fig. 5, or of any other desired shape; but I prefer to make them of such shape that the detents K will slide over them in either direction. For this reason I prefer, also, to form said detents of spring-plates having their engaging ends perpendicular to the sleeve. Instead of continuing the teeth entirely around the sleeve, two rows of teeth L' and stops I', like the teeth H and stops I, may be used, as shown by Fig. 4. As a further modification, the stops I' may be omitted, as shown by Fig. 6. Preferably the teeth H slope on one side and on the other are perpendicular to the sleeve; but this is not essential. They may slope equally on both sides, as shown by Fig. 5, or they may be round, as shown at L, or of any other suitable shape. Furthermore, they may extend completely around the sleeve, in which case they should be of such shape that the detents F can be made to slip over them in both di-

rections. When the teeth do not extend completely around the sleeve, the number of racks may be either increased or decreased; but two are preferred.

I am aware that it is not broadly new to make the ceiling-collar adjustable on the sleeve by which it is supported.

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

1. In a pipe-insulator, the combination of two sleeves, a detent carried by one of said sleeves, and a rack extending only partly around the other, said sleeves being capable of relative rotation and said detent being adapted to be forced outward, and thereby disengaged from the rack, by the relative rotation of the sleeves, substantially as set forth.

2. In a pipe-insulator, the combination of two sleeves, a detent carried by one of said sleeves, and a rack extending only partly around the other, the surfaces between the teeth of the rack merging with the surface of the sleeve, substantially as set forth.

3. In a pipe-insulator, the combination of two sleeves, a detent carried by one of said sleeves, and a rack extending only partly around the other, the notches or depressions between the teeth of said rack terminating abruptly at one end, forming shoulders adapted to engage said detent and limit the relative rotation of said sleeves, and at the other end merging with the surface of the sleeve, substantially as set forth.

4. In a pipe-insulator, the combination of a pair of sleeves, a rack on one of said sleeves, a detent carried by the other and adapted to engage said rack, a second rack on one of the sleeves, and a collar adjustable on said second rack, the teeth of the second rack being closer together than the teeth of the first-named rack, substantially as set forth.

5. In a pipe-insulator, the combination of the floor-ring D, the sleeve E, secured thereto, a detent carried by said sleeve, the sleeve G, having racks H and L, and the ring J, adjustable on the rack L, substantially as set forth.

GEORGE E. DIXON.

Witnesses:

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L. M. HOPKINS.