

(No Model.)

W. H. McKINNEY.
NON CONDUCTING JACKET.

No. 363,663.

Patented May 24, 1887.

FIG. 1.

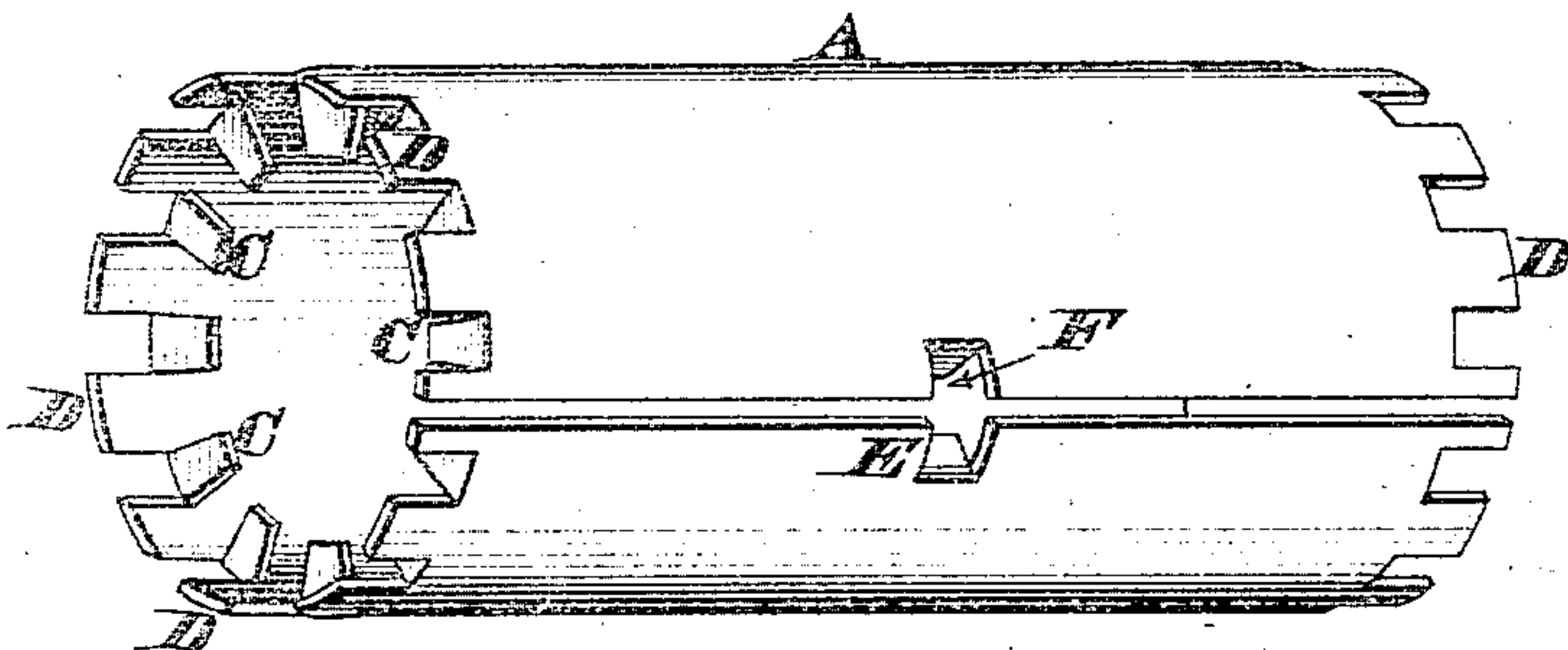


FIG. 2.

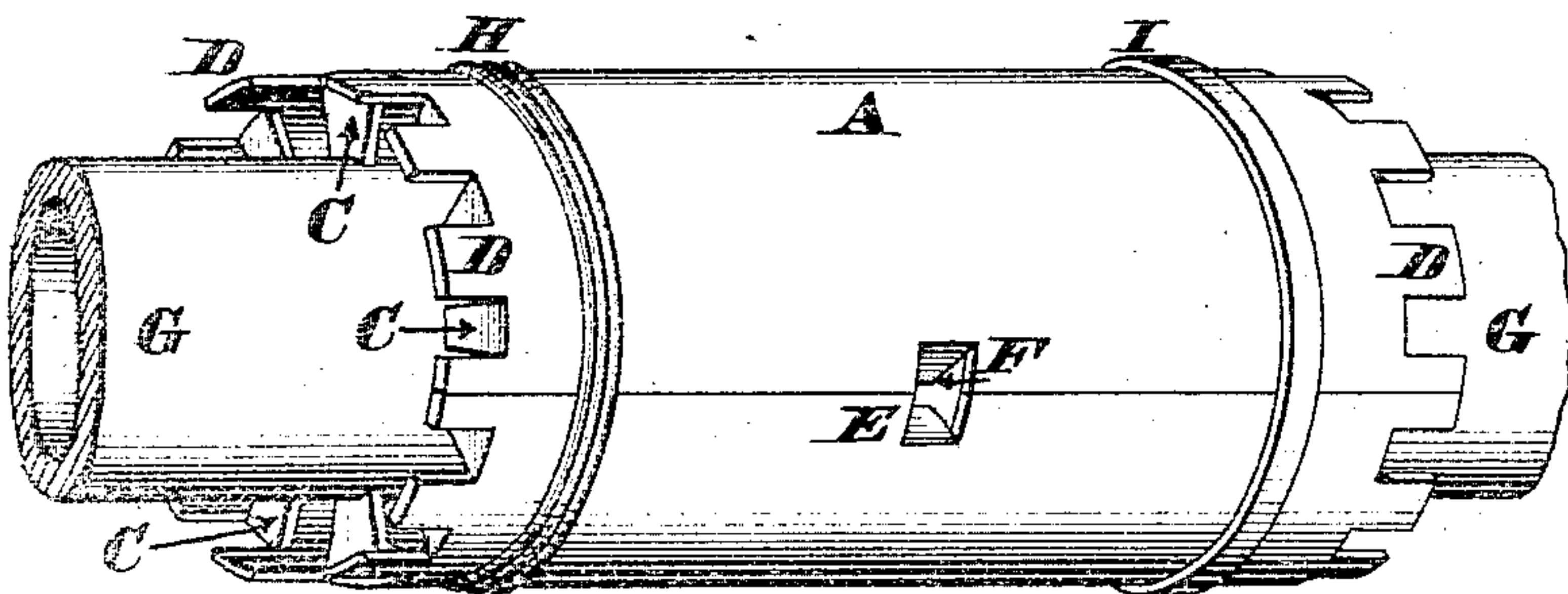


FIG. 3.

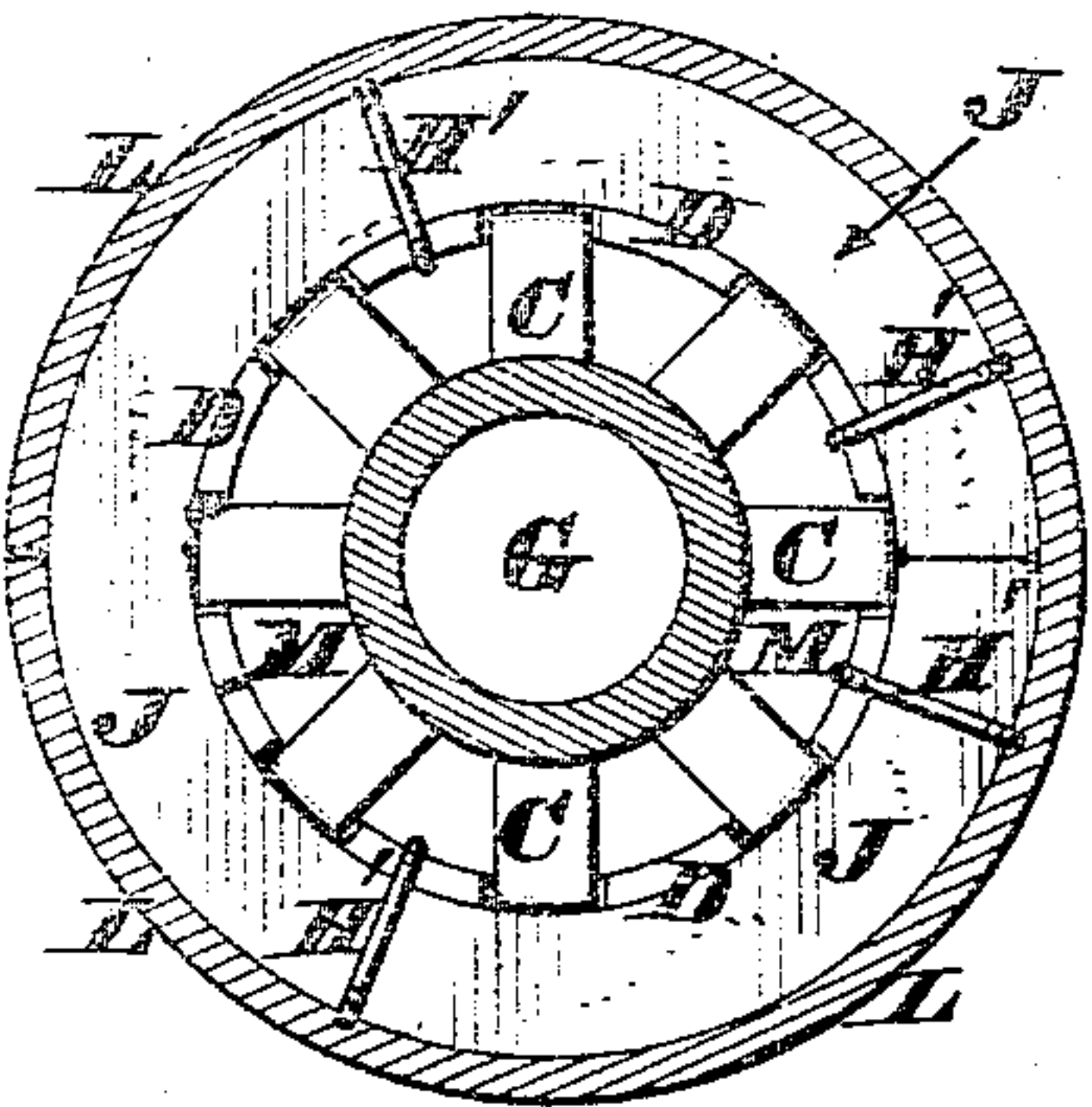


FIG. 5.

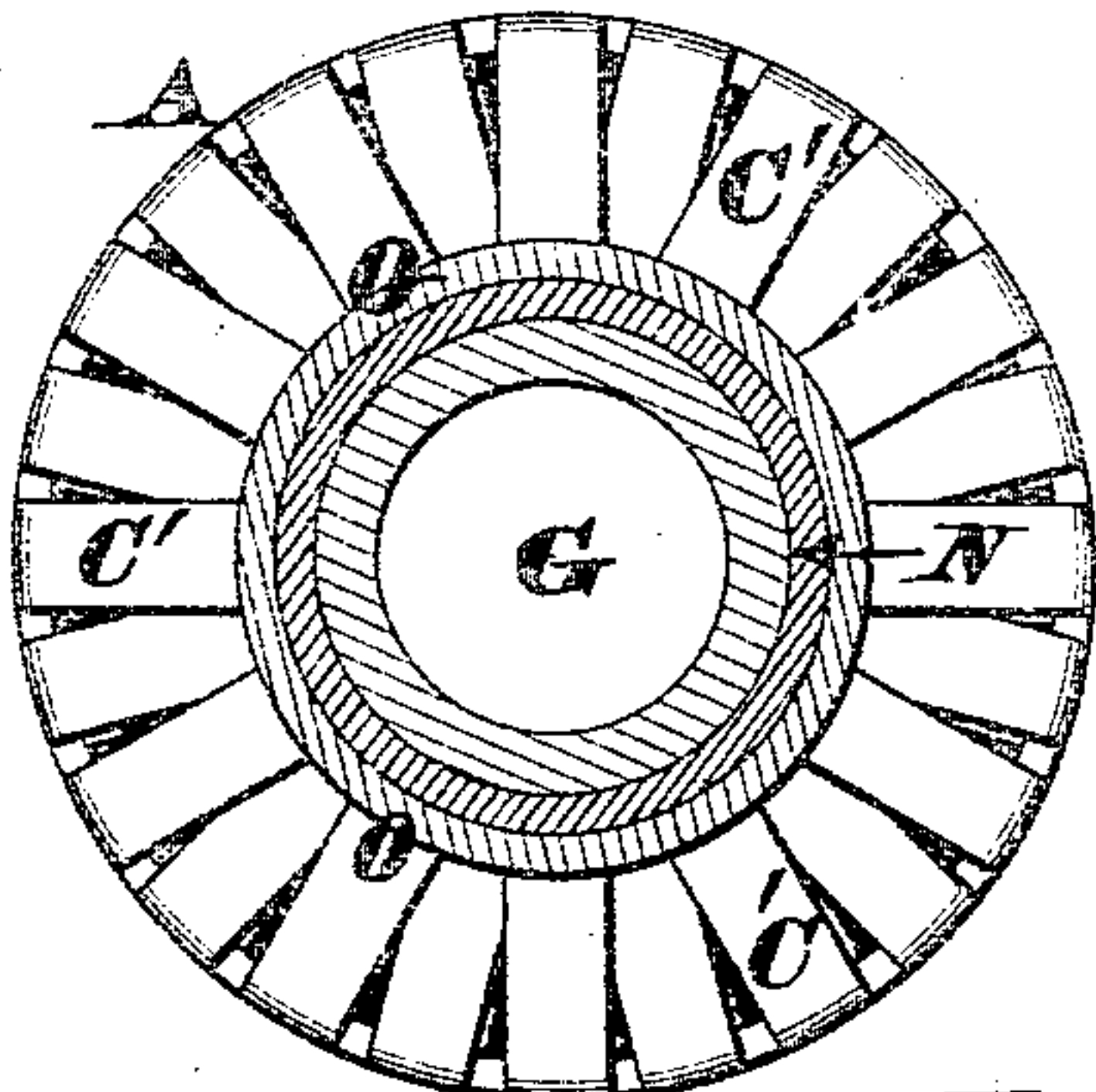


FIG. 6.

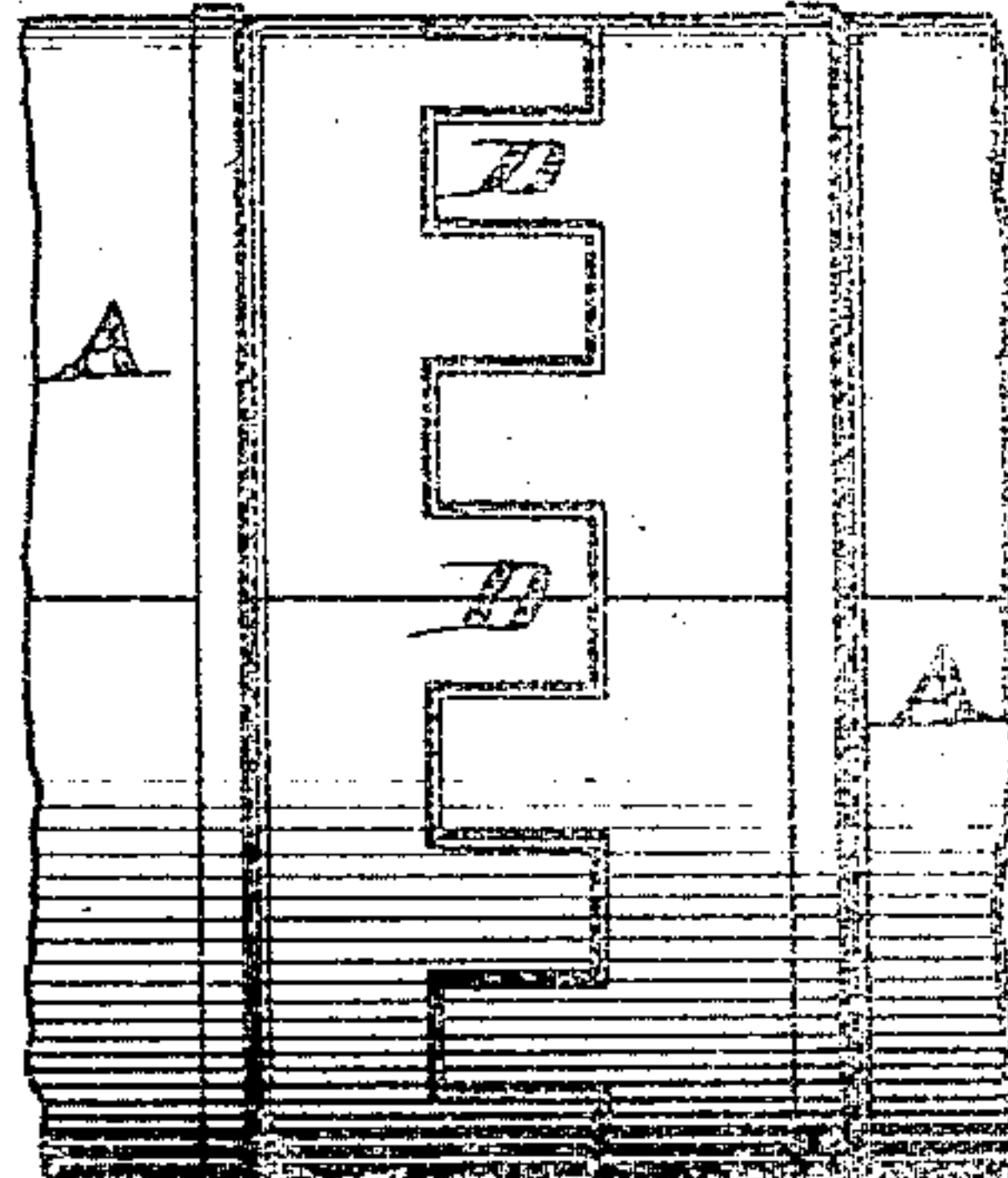
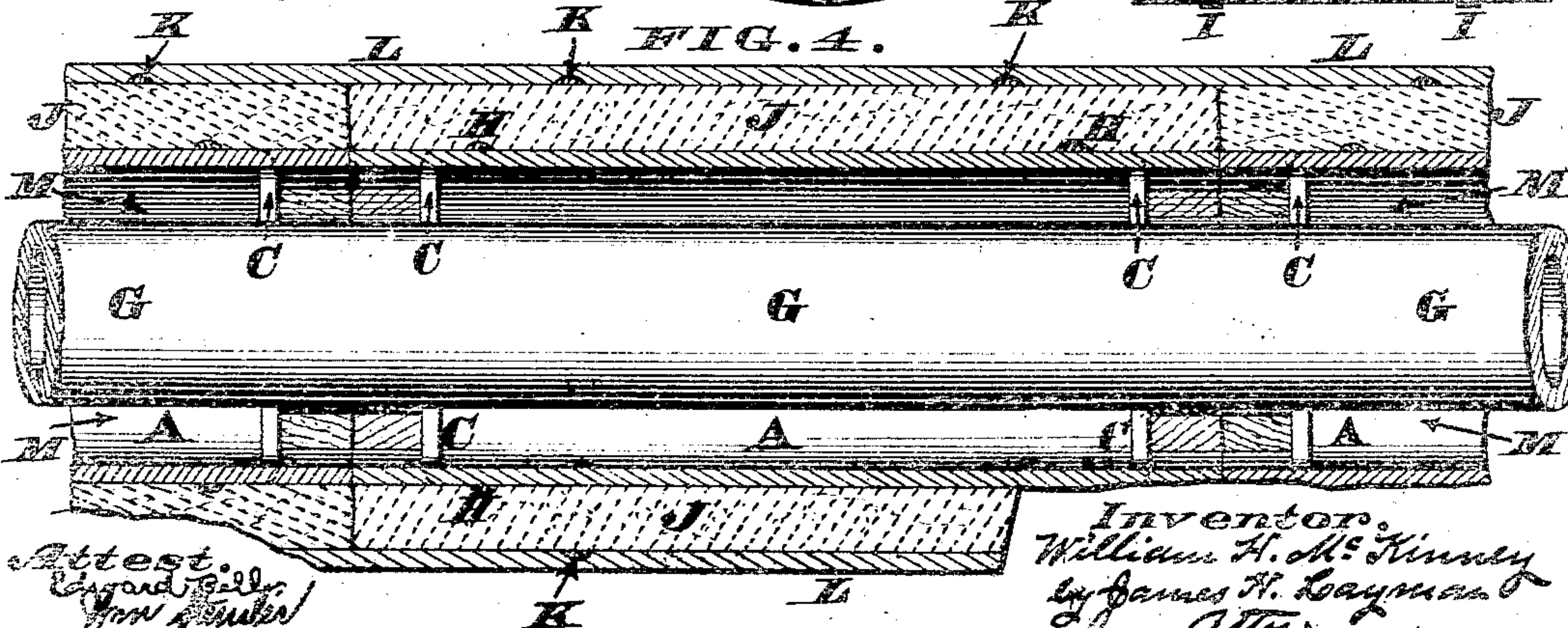


FIG. 4.



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UNITED STATES PATENT OFFICE.

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NON-CONDUCTING JACKET.

SPECIFICATION forming part of Letters Patent No. 363,663, dated May 24, 1887.

Application filed March 8, 1887. Serial No. 233,073. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. MCKINNEY, a citizen of the United States, residing at Evansville, in the county of Vanderburg, State of Indiana, have invented certain new and useful Improvements in Non Conducting Jackets for Steam-Pipes, &c., of which the following is a specification, reference being had therein to the accompanying drawings.

This invention comprises a novel construction of those non-conducting jackets which are applied to steam-pipes, boilers, domes, &c., for the purpose of preventing radiation of heat, and a consequent loss of power.

My jacket is made in sections of any convenient length, and these sections are placed end to end, thereby forming a continuous covering inclosing a dead-air space that protects the pipe or other channel or vessel containing steam. Each section is formed of a single piece of sheet metal, the width of which will be determined by the diameter of the pipe to be covered, and said sheet is rolled or bent to a cylindrical shape, the opposite ends of this cylinder being cut and slitted longitudinally. The length of each slit will be regulated by the width of the annular air-space, as the alternate divisions between the slits are bent inwardly or at right angles to the plane of the sheet, thereby affording a series of integral feet at the opposite ends of each section. Each section is then fitted around the pipe so as to cause these inwardly-projecting feet to rest upon the exterior of the steam-conductor, after which a wire or other binder is wrapped around the sheet-metal cylinder to prevent the latter coming apart. After these sheet-metal cylinders have been thus applied to the pipe, they are completely enveloped in any approved non-conducting material; but, if preferred, this non-conducting material or lagging may be secured to the exterior of the metallic plates before the latter are fitted around the pipe, in which event the lagging will be cut into sheets of the same length as each of said metallic sections, as hereinafter more fully described.

In the annexed drawings, Figure 1 is a perspective view of one of my sheet-metal cylinders or sections in condition for application to a steam-pipe. Fig. 2 is a perspective view of this cylinder secured to the pipe. Fig. 3 is an enlarged transverse section of the steam-

pipe, sheet metal jacket, and surrounding non-conductor. Fig. 4 is a longitudinal section thereof. Fig. 5 is an elevation showing the closed end of one of these cylinders. Fig. 6 is an elevation showing one method of uniting the ends of two contiguous cylinders. Fig. 7 is a plan of a portion of a sheet adapted to fit around a steam-boiler provided with a dome.

A represents a sheet-metal plate, which is usually of iron, and is cut with reference to the steam pipe or boiler or other special use to which the jacket is to be applied. This sheet is subsequently bent to form a cylinder, and its opposite ends are cut or slitted longitudinally, as more clearly shown at B in Fig. 7, the length of these cuts being equal to the desired width of dead-air space around the steam-pipe. After being thus slitted, the alternate divisions are bent inwardly or at right angles to the plane of the cylinder, thereby forming a series of feet, C, with tongues D between them. Furthermore, it is preferred to slit the meeting edge of the cylinder, as at E, and bend the cut portion inwardly, so as to form feet F, of which feet any required number may be used, according to the length of the section. The cylinder or section having been thus prepared is then opened sufficiently to permit its ready fitting around the steam-pipe G, after which application the meeting edge of said cylinder is properly secured. As seen at H, in Fig. 2, a wire binder is wrapped around the cylinder, while I in the same illustration represents a metallic strip or band that secures the sheet metal jacket in a true cylindrical shape.

After the jacket has been mounted upon the pipe G the cylinder is surrounded with a non-conducting envelope or lagging, J, composed of any suitable material, and this lagging may be held in place with wire or bands K, and be protected with a canvas or other covering, L. This outer covering may be finally protected with a fire-proof paint of any desired color. After the first section has been thus applied to the steam-pipe, the second section can be attached in line with the first, and so on until the entire length of said pipe has been covered.

From the above description it is evident the feet C preserve the sheet-metal cylinder A a uniform distance away from the pipe G, there-

by affording an annular dead-air space, M, around said pipe, which air-space acts as a non-conductor to prevent radiation of heat from said pipe, which radiation is still further guarded against by the lagging or other cover or coverings of said cylinder.

For closing up the end of the dead-air space L all the divisions at one end of the sheet-metal cylinder may be bent inwardly, so as to rest upon the pipe, as seen at O' in Fig. 5, which illustration shows an asbestos sheathing, N, surrounding said pipe G, which sheathing has a metallic band or hoop, O, around it to prevent the feet cutting through said sheathing. After the end of the cylinder has thus been bent down a suitable non-conducting cement must be applied thereto to prevent the escape of hot air from the annular space M.

It is immaterial how the ends of adjacent sections are fitted together; but in Fig. 6 the tongues of one cylinder are shown engaged with the interdental spaces of a contiguous cylinder. Fig. 7 shows a plate designed for a jacket to be applied around a steam-boiler and to fit up snugly against a dome of the latter. Here the end of the plate has a semicircular cove, P, cut in it, the diameter of said cove being about equal to that of the dome. This coved portion is slitted at B' to afford a series of feet, C'', which must be of the same length as the other feet of the plate. It is evident a sheet similar to this must be placed around the boiler on each side of the dome, and then secured in place, after which act said sheets can be covered, as above described. If a leak should occur, or it should be desired to obtain access to the steam-pipe for any other reason, the canvas covering L can be cut at the ends of the proper section and the canvas stripped from off the non-conducting lagging J. The latter can then be readily removed from the cylinder A, and the ties H or I being then cut said cylinder can be opened far enough to permit its detachment from the pipe. The pipe can then be repaired and the jacket re-applied thereto, as previously explained. From the above description it is apparent my non-conducting jacket is light, cheap, and durable, and can be attached either to a steam pipe or boiler by any ordinary mechanic and without employing special tools or other appliances. In some cases, however, it may be desirable to attach the lagging J to the sheet-metal cylinders A before the latter are bent around the pipe. In this event each sheet of

lagging must be of the same length as the cylinder to which it is to be attached, the attachment being effected by means of wires H', wrapped longitudinally around the covering J and jacket A, as seen in Fig. 3. This jacket, with its inclosing covering, is then bent around the pipe, and the longitudinal seam of the covering and circumferential seams between each section are sealed up air-tight by strips of canvas similar to what is seen at L. By simply cutting these sealing-strips each section of the pipe-covering can be opened and separately removed without interfering with the adjacent sections.

I claim as my invention—

1. A jacket for steam-pipes, &c., which jacket consists of a sheet-metal cylinder having at its opposite ends a series of inwardly-projecting integral feet adapted to rest upon the pipe, substantially as herein described.

2. A jacket for steam-pipes, &c., which jacket consists of a sheet-metal cylinder having at its opposite ends a series of integral longitudinal tongues with inwardly-projecting integral feet between them, substantially as herein described.

3. A jacket for steam-pipes, &c., which jacket consists of a number of sheet-metal cylinders placed end to end, each cylinder having at its opposite ends a series of integral longitudinal tongues with inwardly-projecting integral feet between them, and the tongues of one cylinder being arranged to engage with the interdental spaces of the adjacent cylinder, substantially as herein described.

4. A jacket for steam-pipes, &c., which jacket consists of a number of sheet-metal cylinders placed end to end, each cylinder having at its opposite ends a series of inwardly-projecting integral feet, and said cylinders being surrounded with a non-conducting lagging, substantially as herein described.

5. A jacket for steam-pipes, &c., which jacket consists of a sheet-metal cylinder, A, having at its opposite ends a series of inwardly-projecting integral feet, F, said cylinder being surrounded with a non-conducting lagging, J, secured with suitable wrappings, as H', substantially as herein described.

In testimony whereof I affix my signature in presence of two witnesses.

WILLIAM H. MCKINNEY.

Witnesses:

JOHN H. OSBORN,
A. C. HAWKINS.