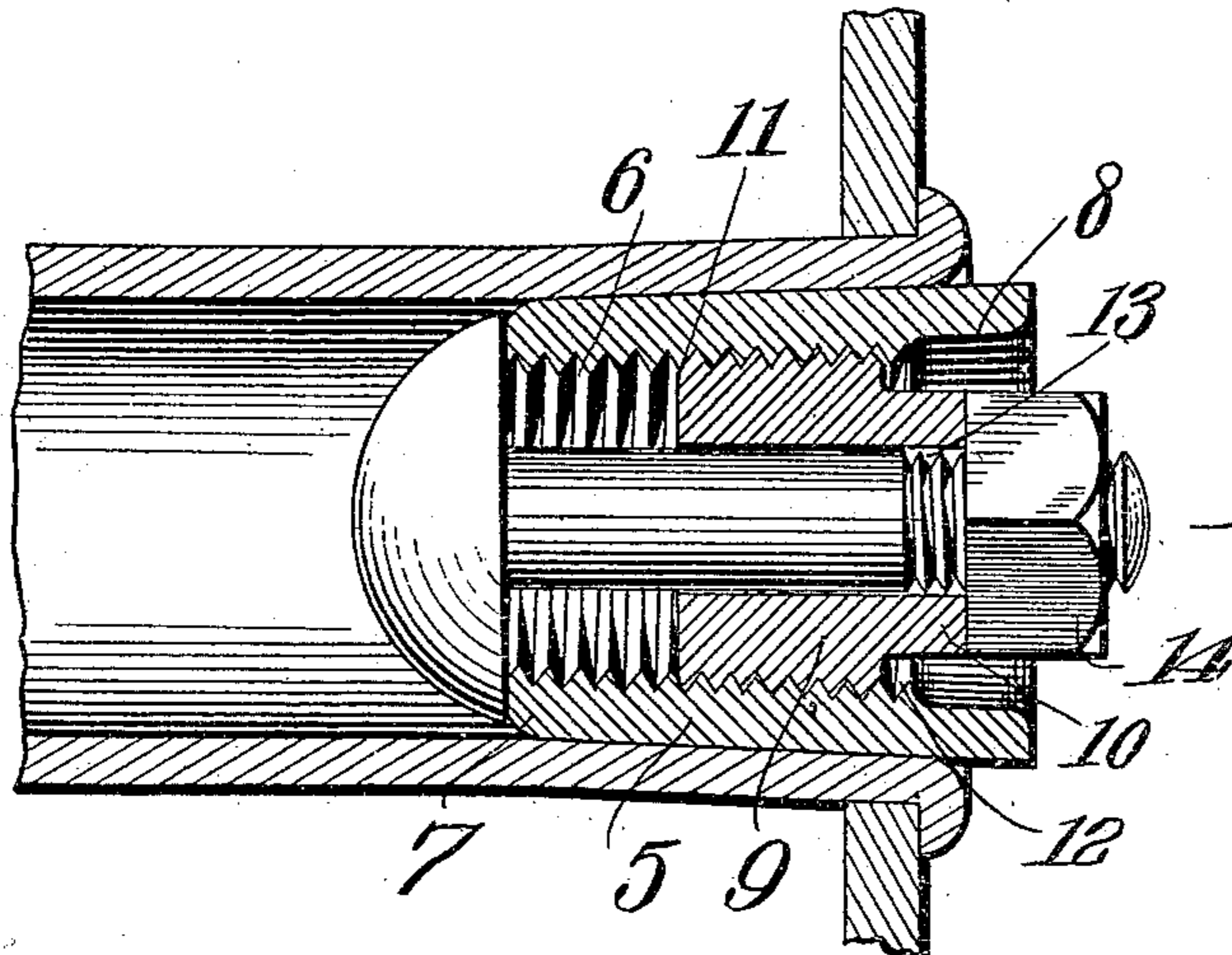
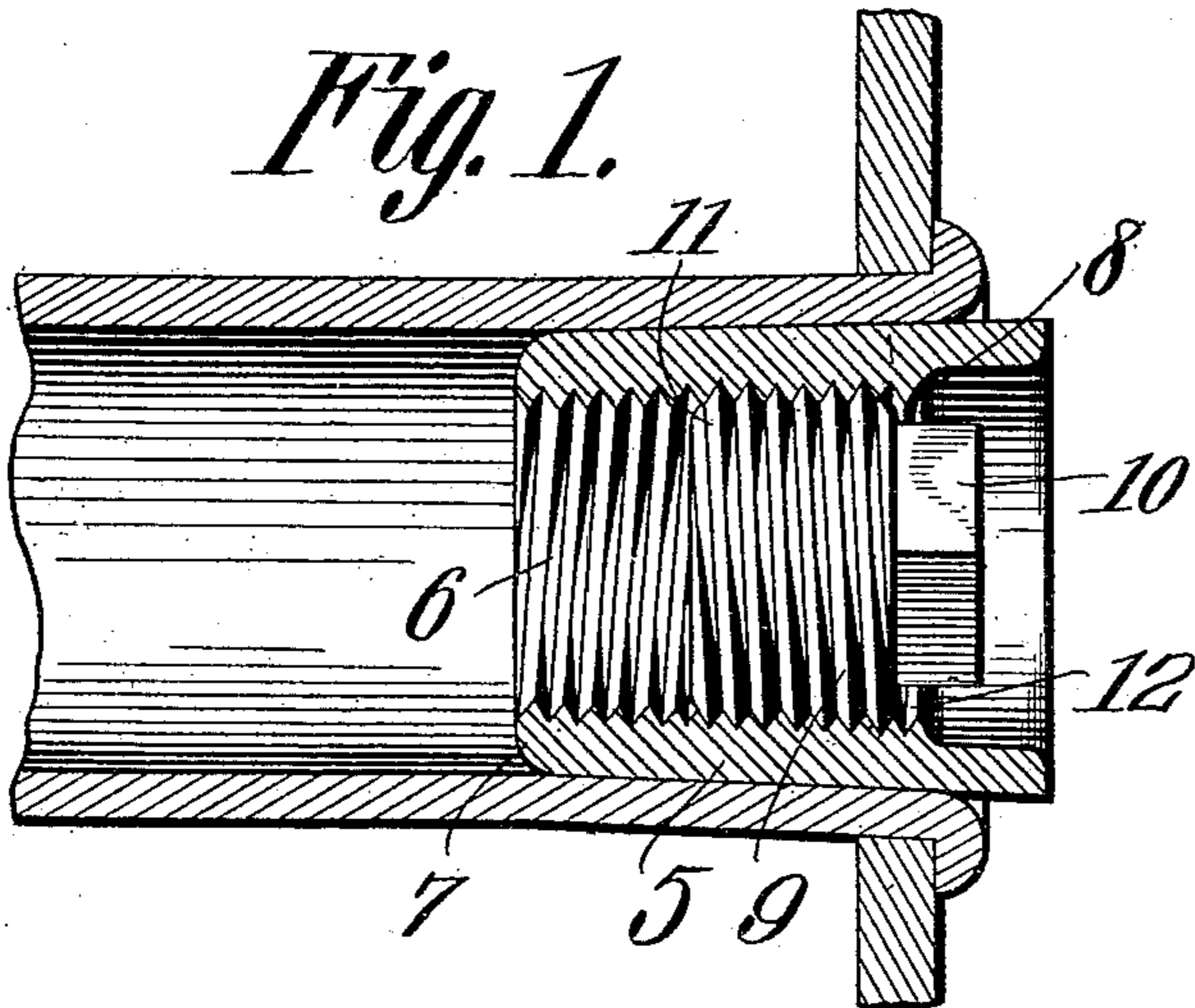


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COMBINATION FLUE PLUG AND FERRULE.  
APPLICATION FILED NOV. 6, 1908.

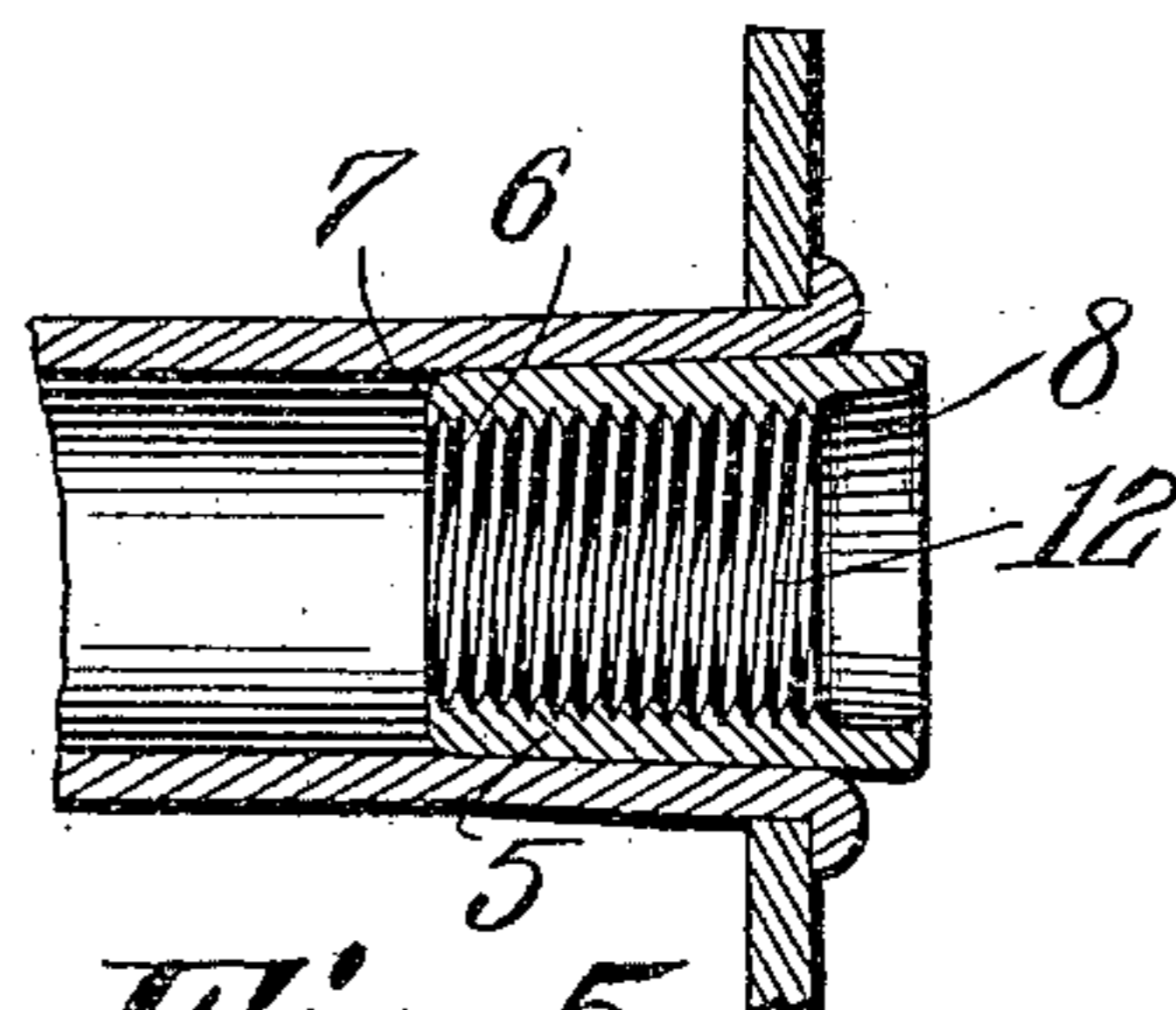
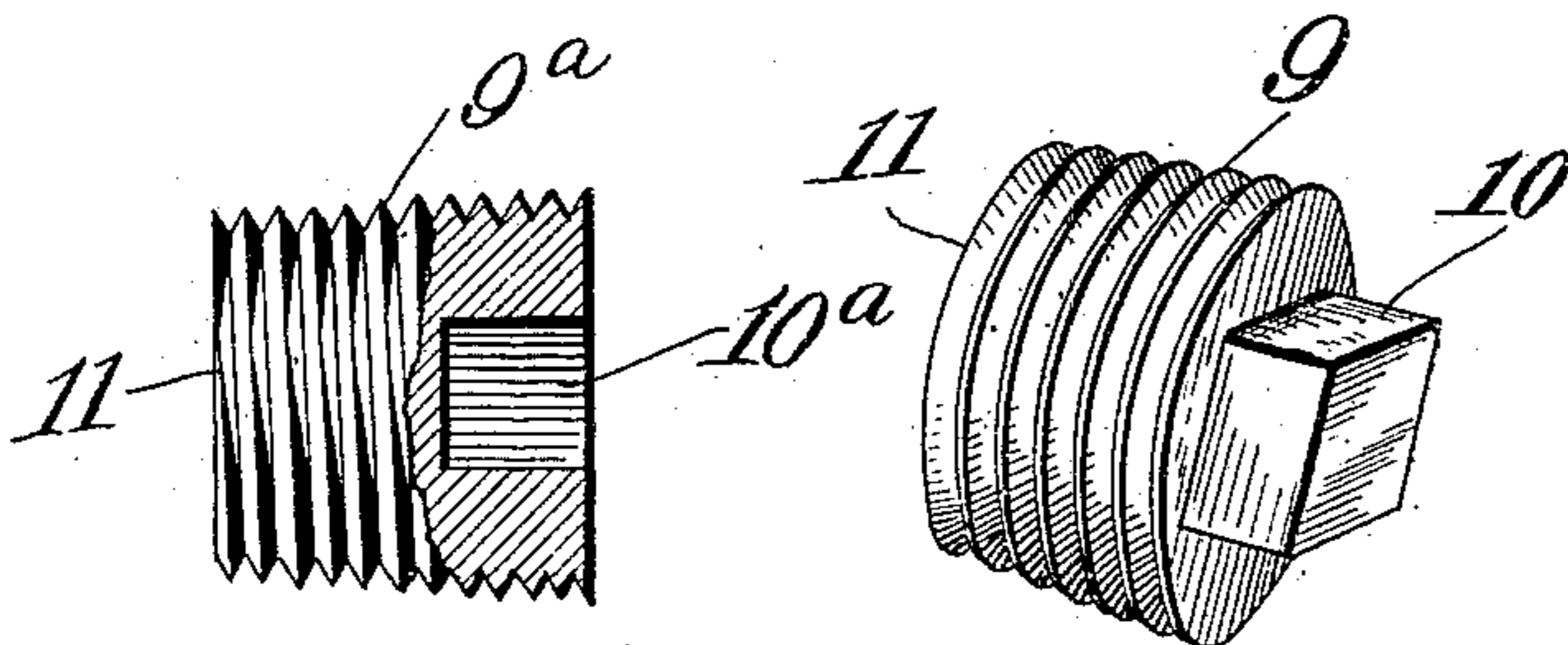
936,444.

Patented Oct. 12, 1909.

*Fig. 1.*



*Fig. 2.*



*Fig. 5.*

*Fig. 4.*

*Fig. 3.*

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Witnesses

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# UNITED STATES PATENT OFFICE.

JAMES H. GILLON, OF WAYCROSS, GEORGIA.

## COMBINATION FLUE-PLUG AND FERRULE.

936,444.

Specification of Letters Patent.

Patented Oct. 12, 1909.

Application filed November 6, 1908. Serial No. 461,378.

*To all whom it may concern:*

Be it known that I, JAMES H. GILLON, a citizen of the United States, residing at Waycross, in the county of Ware and State of Georgia, have invented a new and useful Combination Flue-Plug and Ferrule, of which the following is a specification.

The primary object of the present invention is to provide a flue plug which may be readily driven into the end of the flue and which may be arranged to either permit the flue to continue performing its function or to place the flue out of operation.

Broadly speaking, the device embodied in the present invention is comprised of a bushing and a plug which is fitted into the bushing, and in constructing these two elements of the device, I have aimed to provide against mutilation of the thread by means of which the plug is fitted into the bushing and to provide a plug and means for securing it within the bushing of such character as to positively provide against accidental disengagement of the plug from the bushing.

In the accompanying drawings, Figure 1 is a vertical longitudinal sectional view through the device embodying my invention showing the same applied to a flue, Fig. 2 is a similar view but showing another method of using the device, Fig. 3 is a perspective view in detail of the plug of the device. Fig. 4 is a view in elevation showing a slightly modified form of plug, and Fig. 5 is a view similar to Fig. 1 but showing the device as applied when it is not desired to render the flue inoperative.

As heretofore stated, and as shown in the drawings, the flue repair device embodying my invention is comprised of a bushing and a plug which is to be fitted in the bushing.

The bushing is indicated by the numeral 5 and as will be observed from the drawings, is frusto-conical in form, or in other words is tapered from end to end both exteriorly and interiorly, its bore being formed with screw-threads 6. At its forward end, the exterior surface of the bushing at the edge of the said end is convexed or rounded as at 7 so that when the bushing is driven into the end of a flue to be repaired, the wall of the flue will not be injured as would be likely to occur if the said end of the bushing was of acute formation. The threads 6 of the bushing do not extend the entire length of the bore thereof but terminate short of the outer

or rear end of the said bore as indicated by the numeral 8. By this construction, the bushing may be driven into the end of a flue to be repaired without likelihood or danger of the threads 6 becoming mutilated and consequently insertion and removal of the plug of the device into or from the bore of the bushing will not be interfered with.

The plug of the device embodied in the invention is indicated by the numeral 9 and as shown in the drawings, is of frusto-conical form and is provided at its major end with a squared head 10 with which may be engaged a suitable wrench for the purpose of screwing the plug into the bushing. It will be understood that the minor end of the plug, indicated by the numeral 11, is of such diameter as to loosely enter the major end of the bore of the bushing 5 but that as the plug is screwed into the bushing and tightened, it will fit more snugly into the bushing and will effectually seal the flue to which the device is applied.

In the use of the device, the bushing 5 is first driven into the end of the flue to be repaired by inserting its rounded minor end 7 into the end of the flue and striking repeated blows upon the major end of the bushing. The necessity of terminating the screw threads 6 short of the major end of the bushing will now be apparent, for, if these threads were not terminated as described and shown, the blows given the major end of the bushing would batter down the threads at that end of the bushing and render the subsequent insertion of the plug of the device difficult. It will be found that the insertion of the bushing into the end of the flue will act efficiently to repair a flue which is damaged but to an ordinary degree, but where after the insertion of the bushing, it is found that the flue is still defective, the plug of the device is inserted in the bushing and screwed tightly thereinto, thereby "blanking" the flue, or in other words, rendering it inoperative.

It will be necessary, in some instances, to provide means for more securely holding the plug 9 within the bushing than by merely threading it thereinto, and such means is illustrated in Fig. 2 of the drawing, the means being in the nature of a bolt the head of which engages the minor end of the bushing with the stem of the bolt passing through an opening 13 formed longitudinally through the plug. A nut 14 is engaged upon

the threaded stem of the bolt and bears against the squared end portion 10 of the bushing and this nut is tightened after the plug has been screwed tightly into the bushing, it being understood that the bolt and nut act effectually as a lock to prevent accidental disengagement of the plug from the bushing.

In Fig. 4 of the drawings, there is illustrated a plug 9<sup>a</sup> which is identical with the plug 9 except that it is formed with a squared socket 10<sup>a</sup> for the insertion of a socket wrench.

What is claimed is:—

1. A device of the class described comprising a bushing tapered interiorly and exteriorly, and a plug threaded into the bushing.
2. A device of the class described comprising a bushing tapered interiorly and exteriorly, the said bushing being threaded interiorly from one end to a point adjacent the other end, and a plug threaded into the bushing.
3. A device of the class described comprising an exteriorly tapered bushing having a threaded tapered bore, and a threaded plug fitted into the bushing, said plug being frusto-conical.

4. A device of the class described comprising a bushing tapered interiorly and exteriorly, the said bushing being threaded interiorly throughout its length except adjacent one end, the opposite end of the bushing being rounded at its edge, and a frusto-conical plug threaded into the bushing.

5. A device of the class described comprising a tapered bushing, a plug fitted into the bushing, a securing bolt passed through the plug and engaging one end of the bushing, and a nut threaded upon the bolt and bearing against the plug.

6. A device of the class described comprising a bushing threaded interiorly throughout its length except at and adjacent that end which is outermost when the bushing is inserted in a flue, whereby the end of the bushing may receive blows without injury to the threads, and a plug threaded into the bushing.

In testimony that I claim the foregoing as my own, I have hereto affixed my signature in the presence of two witnesses.

JAMES H. GILLON.

Witnesses:

R. M. LEWIS,  
W. H. BULLARD.