Aug. 2, 1927. 1,637,750

O. W. KILHAM

JOINT FOR CASING SECTIONS AND METHOD FOR MAKING THE JOINT

Filed July 21, 1926

Fig. 1.

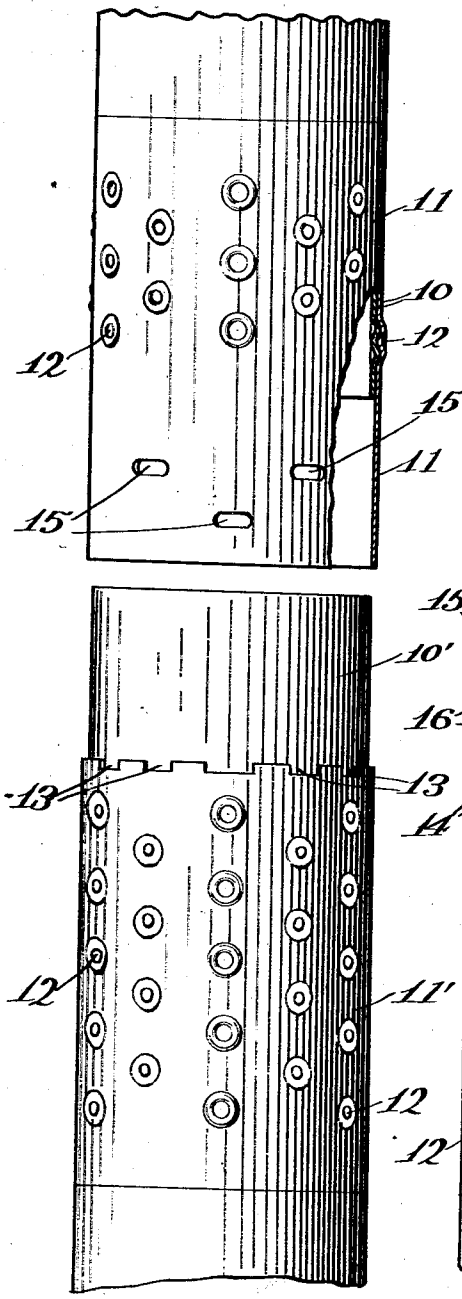


Fig. 2.

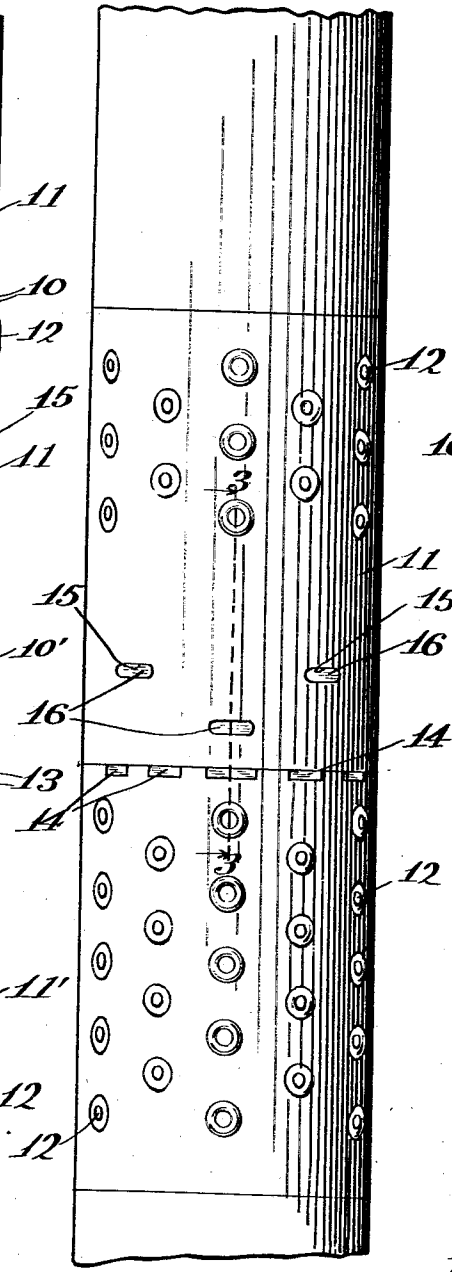
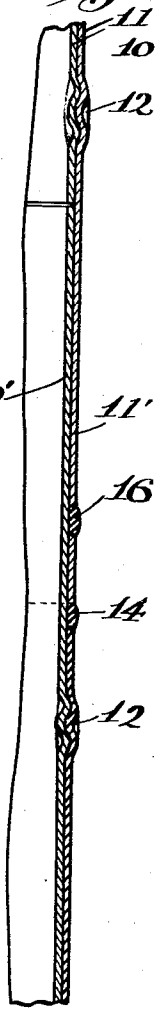


Fig. 3



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UNITED STATES PATENT OFFICE.

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JOINT FOR CASING SECTIONS AND METHOD FOR MAKING THE JOINT.

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This invention relates to an improved joint for joining together sections of well casing and to the method of constructing the same. The invention primarily relates to the assembling together of sections of what is commonly known as stove pipe casing. Heretofore it has been a customary procedure in assembling together the sections to insert the projecting end of the inside joint of casing on one end of a casing section into the projecting end of the outside joint of casing on one end of another casing section. A slight space is frequently left between the edges of the outside joints and in this space there is disposed metal as by welding, forming a bead completely around the casing. Such construction, however, has been disadvantageous in that a continuous bead extending completely around the casing will cause the casing to expand considerably during the heating of the welding. On cooling certain stresses are set up which frequently cause the weld to crack or to pull apart, so that the fastening together of the sections of casing is poor. It sometimes happens that these stresses set up during the cooling cause the weld to be weakened which is not apparent from the outside of the casing, but on lowering the casing into the well the weakened weld will permit the casing sections to part.

The primary object of this invention is to provide an improved joint for connecting adjacent ends of sections of stove pipe casing and a method for fastening together the sections which will substantially eliminate the above mentioned difficulties and disadvantages.

With the foregoing and other objects in view which will be made manifest in the following detailed description and specifically pointed out in the appended claims, reference is had to the accompanying drawings for an illustrative embodiment of the invention, wherein:

Fig. 1 is a partial view in side elevation illustrating the adjacent ends of two sections of stove pipe casing about to be assembled together;

Fig. 2 is a partial view in side elevation illustrating the adjacent end of two sections of casing after having been fastened together; and

Fig. 3 is a vertical section taken substantially on the line 3—3 of Fig. 2.

Referring to the accompanying drawings wherein similar reference characters designate similar parts throughout, the stove pipe casing shown upon the drawing is of substantially the conventional construction consisting of a plurality of inside joints of casing 10 arranged in alignment with their top and bottom edges abutting each other and positioned inside of a plurality of outside joints 11 arranged in alinement and having their edges abutting each other. The round-about or circular seams between the inside joints of casing are staggered or broken with respect to the round-about seams or abutting edges between the outside joints, so that each outside joint is positioned about portions of two inside joints. The inside joints are preferably fastened to the outside joints such as by picks 12, which in the present instance is shown as being tubular picks, although any other suitable manner of fastening the inside joint of casing to the outside joints can be employed.

By this arrangement of the inside and outside joints, each section of casing will have a projecting end of an outside joint 11 on one end such as is indicated at 11′ and the other end of each section of casing will have the projecting end of an inside joint as indicated at 10′. In assembling the sections of casing together to form a complete well casing, the projecting end of the inside joint 10′ on one end of one casing section is inserted into the projecting end 11′ of the outside joint on another casing section. The projecting end on the inside joint 10′ is inserted into the end 11′ far enough to have the end 11′ abut against the edge of the outside joint 11″ which is on the casing section having the projecting end 10′ on the inside joint.

As previously stated, the customary procedure in assembling casing sections of this kind has been to leave a slight space between the edges on the end 11′ and the joint 11″ and filling this space by an annular weld. In order to overcome the disadvantages above mentioned, the edge of the joint 11″ is provided with a plurality of recesses 13 and instead of leaving the space, the end 11′ is caused to abut the outside joint 11″. The recesses 13 will then leave the end of the inside joint 10′ exposed therethrough and these recesses are then filled with metal,

such as by welding, forming welds 14. The welds 14 serve to join the outside joints 11′ and 11″ to each other and also to the inside joint 10′. By reason of the fact that the welds are spots instead of a complete weld extending completely around the casing, the expansion and contraction due to the heating and cooling is such that the stresses set up during the cooling will not affect the welds to any great degree, and in this way there is very little danger of forming a weak joint between the casing sections which might part when the casing is lowered into the well. The two sections of casing are also joined together by forming apertures 15 in the projecting end of the outside joint 11′. When the projecting end 11′ is positioned over the projecting end 10′, the projecting end 10′ is exposed through them. The apertures 15 are then filled with metal such as by welding indicated at 16.

From the above described construction it will be readily appreciated that an improved joint for sections of stovepipe casing is provided and a method for constructing the same is also provided, wherein the difficulties and dangers present in prior constructions using a continuous weld have been greatly eliminated.

It will be understood that various changes in the detail of construction may be made without departing from the spirit or scope of the invention as defined by the appended claims.

I claim:

1. The method of assembling together sections of stovepipe casing or the like, which includes inserting the projecting end of the inner joint of casing on one end of one casing section into the projecting end ot the outer joint of casing on one end of another casing section until the outer joints abut each other, forming recesses in the abutting edge of one of said outer joints, and filling said recesses by welding, thus joining the abutting outer joints to each other and to the inner joint.

2. The method of assembling together sections of stovepipe casing or the like, which includes inserting the projecting end of the inner joint of casing on one end of one casing section into the projecting end of the outer joint of casing on one end of another casing section until the outer joints abut each other, forming recesses in the abutting edge of the outer joint on that casing section which has the mentioned projecting inner joint, and depositing metal in said recesses as by welding, thus fastening the mentioned outer joints to each other and to the mentioned inner joint.

3. The method of assembling together sections of stovepipe casing and the like, which includes inserting the projecting end of the inner joint on one end of the casing section into the projecting end of the outer joint on one end of another casing section until the end outer joints on both sections abut each other, forming apertures in the mentioned projecting outer joint and recesses in the abutting edge of the outer joint of the casing section having the projecting inner joint, and depositing metal in said apertures and recesses as by welding.

4. A section of stovepipe casing or the like comprising a plurality of inside joints arranged in alinement, a plurality of outside joints secured about the inner joints, the seams between the outer joints being staggered or broken with respect to the seams between the inner joints, the end inner joint on one end of the casing projecting beyond the end outer joint on the same end, said end outer joint having recesses formed on its end edge as and for the purpose described.

5. The method of assembling sections of stovepipe casing, which consists of inserting the projecting end of the inner joint on the end of one section into the projecting end of the outer joint on one end of another section, and depositing metal as by welding in spots upon the mentioned inner joint between the edges of the outer joints on the ends of the two sections, thus joining the outer joints together and to the mentioned inner joint.

6. The method of assembling sections of stovepipe casing, which consists of inserting the projecting end of the inner joint on the end of one section into the projecting end of the outer joint on one end of another section, depositing metal as by welding in spots upon the mentioned inner joint between the edges of the outer joints on the ends of the two sections, thus joining the outer joints together and to the mentioned inner joint, and forming apertures in the mentioned projecting outer joint and depositing metal in the apertures upon the mentioned projecting end of the inner joint.

In testimony whereof I have signed my name to this specification.

OLIVER W. KILHAM.