To all whom it may concern:  

Be it known that I, Arnt Hendrickson, a citizen of the United States, residing at Minneapolis, in the county of Hennepin and State of Minnesota, have invented certain new and useful Improvements in Adjustable Deflectors for Hot-Air Furnaces; and I do hereby declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same.  

My invention relates particularly to a hot air register of the type that is placed in the floor and is used in connection with so-called pipeless furnaces; and the invention is directed to the provision of an improved deflector for varying the distribution of the hot air from the furnace.

Especially, this improved deflector, is adapted for application where the hot air register is placed in the floor, partly on one side and partly at the other side of a partition wall; and in such application the deflector is hung from the partition wall and works in an opening formed in the wall just above the floor register.

As preferably designated, the deflector is made up of extensible, deflecting wings hinged at their upper edges to the partition wall and have a detachable, interlocking engagement in their free lower edges, so that the two deflecting wings may be adjusted either simultaneously or independently, as will.

As a still further feature of novelty, this deflection may be applied in connection with a wall pipe set into the partition wall, all that will here and aftermore appear.

The invention is illustrated in the accompanying drawings, wherein like characters indicate like parts throughout the several views. Referring to the drawings:

Figure 1 is an elevation, showing portions of the floor register, the deflector and air pipes and some parts being broken away;

Figure 2 is a fragmentary view chiefly in elevation but with the floor register sectioned, showing particularly the deflector and its supporting frame;

Figure 3 is a section taken approximately on line 3-3 of Fig. 2;

Figure 4 is a detail in section on the line 4-4 of Fig. 3, some parts being broken away;

Figure 5 is a view, chiefly in plan but with some parts in horizontal section on line 5-5 of Fig. 1; and

Figure 6 is a vertical section taken on the line 6-6 of Fig. 5.

The numeral 7 indicates a flat perforated plate that affords a floor register and has a depending flange 1 terminating in the floor 8.

The numeral 9 indicates the hot air stack and the numeral 10 the cold air returning stack of the so-called pipeless furnace. The air stack 9 is within the stack 10 and the former is cylindrical, while the latter is square in cross section and at its upper edge fits into the flange 7 of the floor register 7.

The numeral 11 indicates a partition wall that extends across the register 7, but is cut away, above the same and is provided at its cut away portion on both sides of the wall, with a rigidly attached rectangular frame 12.

Connected at their upper edges, by hinges 13, to the horizontal upper portion of the frames 12, are vertically, extensible deflector wings, each wing being made up of two sections 14 and 15. The upper sections 14 of these deflecting wings are directly attached at their upper edges to the hinges 13. At their side edges, the wing sections 14 have inturned flanges 14 that are overlapped by 15 and slide within inturned U-shaped flanges 15 of the respective lower wing sections 15. One of the lower wing sections 15 is provided with a U-shaped flange 15 at its lower edge, that is adapted to receive the lower 90 edge of the other wing section 15, (see Figs. 3 and 6) to thereby lock together the lower edges of the two deflecting wings, so that they will have common lateral sliding movement over the register 7. Preferably the lower wing sections 15 are provided with finger pieces 15 by means of which they may be raised or lowered and by means of which the two wings may be either simultaneously or independently adjusted.

When the two wings are made very long, it may be sometimes desirable to slidably connect the sections 14 and 15 thereof at their intermediate portion and this may be done by providing each section 15, with a slot 16 (see Fig. 1) and providing each section 14 with a headed projection 17, that works in said slot and prevents lateral bulging of one wing section with respect to the other.

The numeral 18 indicates a hot air pipe 110.
located in the wall and provided with cold air return channels 19. This wall pipe is adapted to convey hot air to an upper room and return the cold air therefrom.

5 The hot air register may be located in any desired position under the partition wall, but will usually be located more at one side thereof than at the other. When the two deflecting wings are located together for some adjustments, the supply of hot air will be cut off from the wall pipe and may be deflected more or less from the one side to the other side of the partition wall. Under the lateral adjustments of the deflecting wings, the said wings are automatically extended and contracted so that they will always maintain contact with the register 7.

When the two wings of the deflector are disconnected at the lower edges, the said wings may be independently adjusted, so as to vary the amount of air delivered on the opposite sides of the partition wall and so as to vary also the amount of air that will be delivered to the wall pipe. Thus, it will be seen that the various adjustments serve to regulate the distribution of heat as between the rooms on the opposite sides of the partition wall and as between the lower rooms and an upper room. It will be, of course, understood that in the arrangement illustrated, the left hand lower wing of section 15, may be interlocked to or disconnected from the lower section 15 of the right hand wing, simply by giving the said lower section of the left hand wing a slight vertical movement.

What I claim is:

1. The combination with a hot air floor register and a partition wall having an opening overlying said register, of a deflector made up of two wings working in the wall opening and hinged to the wall on opposite sides thereof, said wings being slidably extensible in a vertical direction.

2. The combination with a hot air floor register and a partition wall having an opening overlying said register, of a deflector made up of two wings working in the wall opening and hinged to the wall on opposite sides thereof, said wings being slidably extensible in a vertical direction and having detachably engageable portions which, when engaged, connect the two wing sections for simultaneous adjustments.

3. The combination with a hot air floor register and a partition wall having an opening overlying said register, of a deflector made up of two wings working in the wall opening and hinged to the wall on opposite sides thereof, said wings being slidably extensible in a vertical direction, and a hot air pipe located in said partition wall and opening into the space between the upper portions of said wings.

4. The combination with a hot air floor register and a partition wall having an opening overlying said register, of a deflector made up of two wings working in the wall opening and hinged to the wall on opposite sides thereof, said wings being slidably extensible in a vertical direction and having detachably engageable portions which, when engaged, connect the two wing sections for simultaneous adjustments, and a hot air pipe located in said partition wall and opening into the space between the upper portions of said wings.

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

ARNT HENDRICKSON.

Witnesses:

BERNICE G. BAUMANN,
HARRY D. KILGORE.