A. W. THOMPSON.

INSULATION OF SLASHER CYLINDERS.

APPLICATION FILED JAN. 30, 1913.

1,076,330.

Patented Oct. 21, 1913.

2 SHEETS—SHEET 1.

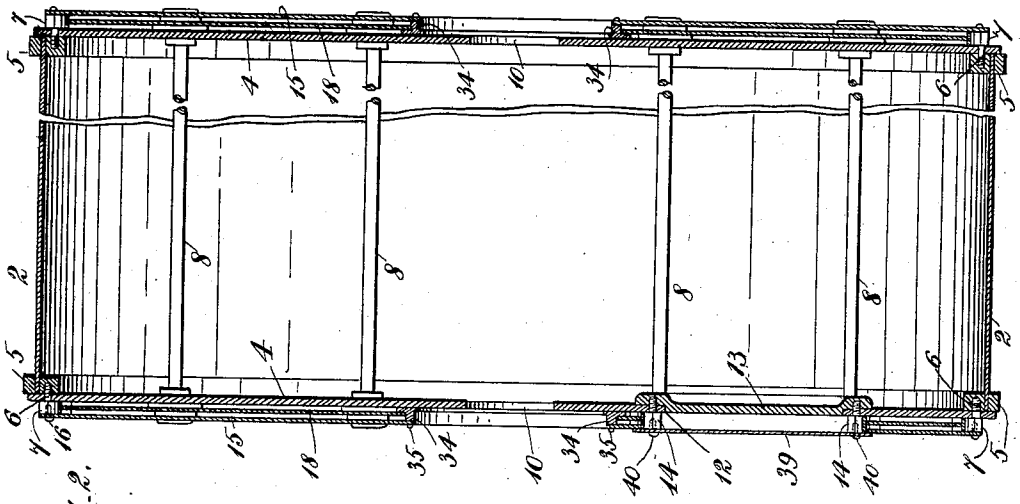


Fig. 2.

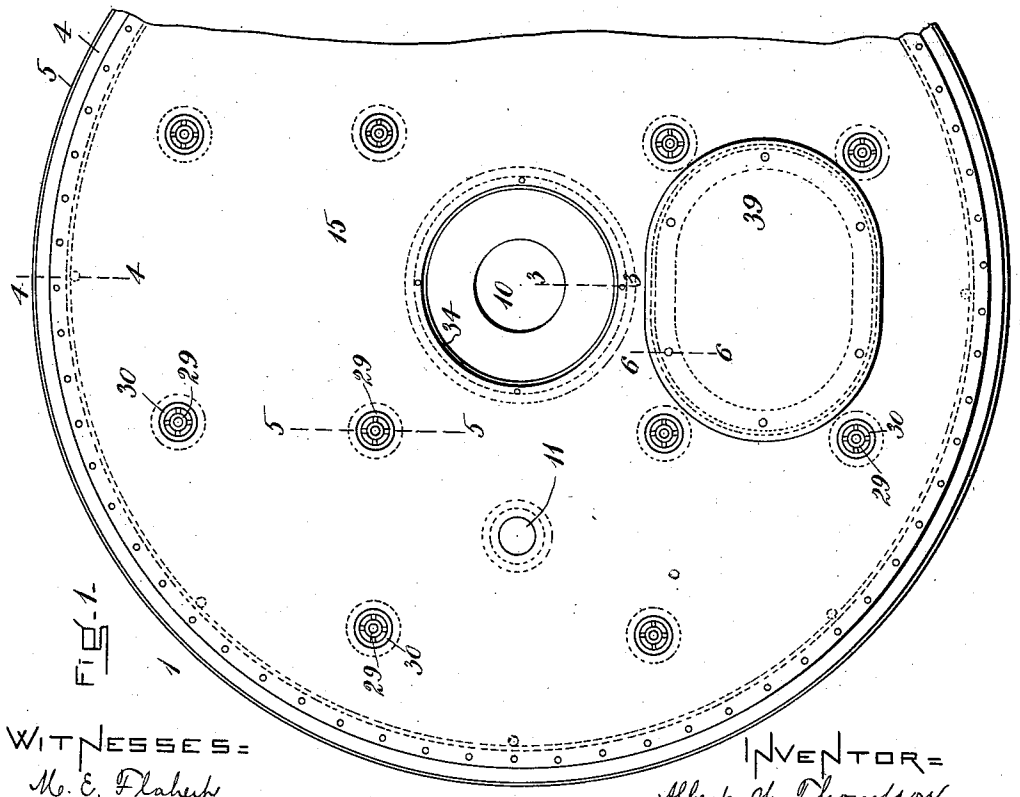


Fig. 1.

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2 SHEETS—SHEET 2.

Fig. 3.

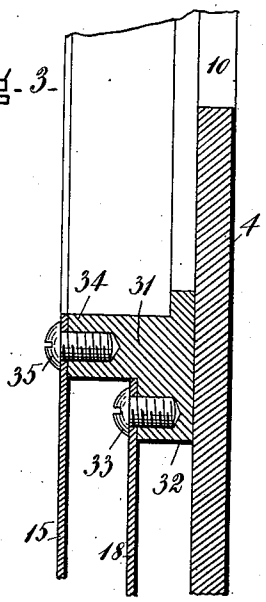


Fig. 4.

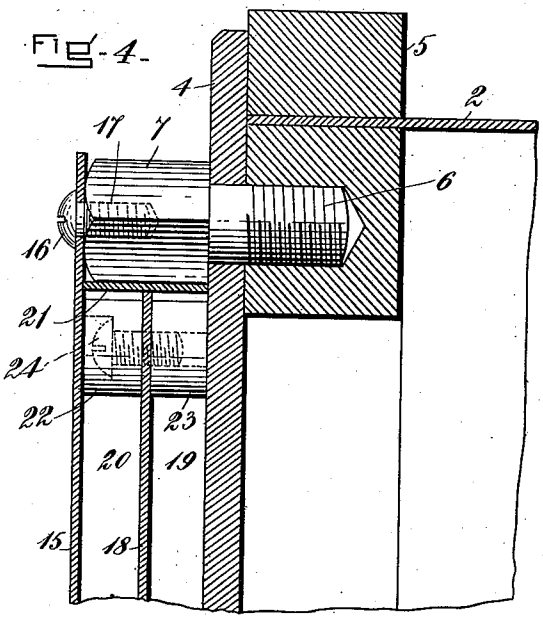


Fig. 5.

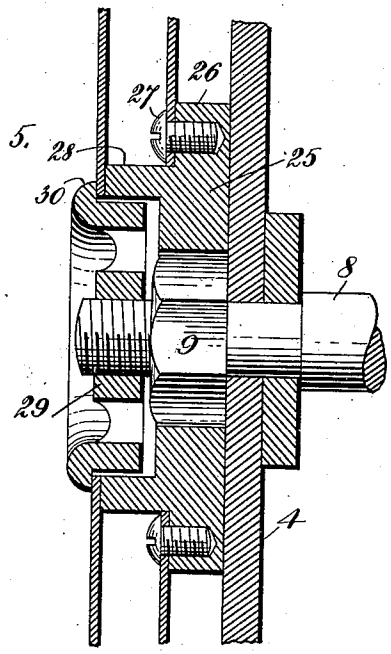
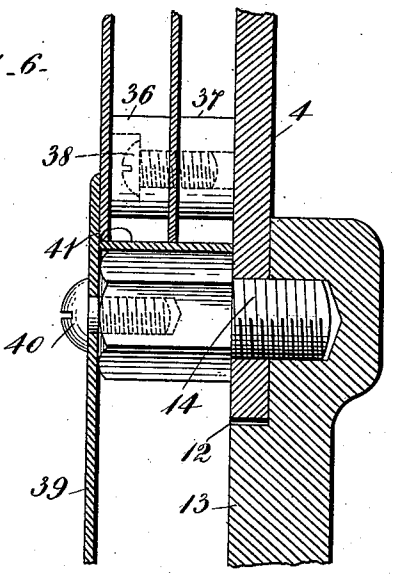


Fig. 6.



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UNITED STATES PATENT OFFICE.

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INSULATION OF SLASHER-CYLINDERS.

1,076,330. Specification of Letters Patent. Patented Oct. 21, 1913.

Application filed January 30, 1913. Serial No. 745,090.

To all whom it may concern:

Be it known that I, ALBERT W. THOMPSON, of Lowell, in the county of Middlesex and State of Massachusetts, a citizen of the United States, have invented a new and useful Improvement in the Insulation of Slasher-Cylinders, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming a part of this specification, in explaining its nature.

The present invention relates to an improved means for insulating the heads of slasher cylinders, and has for its general object to protect the cylinder against radiation of heat in a more efficient manner than has hitherto been obtained.

The customary means of insulation heretofore employed has been to cover the head of the cylinder with a layer of sheet magnesia about one inch in thickness. This has been placed against the head of the cylinder and has been covered with a thin sheet steel casing. I have found, however, that the magnesia may be entirely dispensed with and the heads of cylinders better insulated by compartments or casings containing dead air.

According to the present embodiment of my invention each head of the cylinder is provided with a casing having formed therein separate and independent air compartments, wherefore the head of the cylinder is covered with separate layers of dead air providing a most efficient insulation.

Owing to the fact that the head of a slasher cylinder is provided with a variety of adjuncts including the heads of stay bolts, a manhole, a vacuum valve and journal box, provision is accordingly made so that the casing with which the head is provided and in which the separate and independent compartments are formed, will not interfere with the various parts of the head above referred to and so that these parts or fittings of the head will be utilized in so far as is possible in the retention of the casing and partition forming the respective air-containing compartments as aforesaid, all of which can best be seen and understood by reference to the drawings in which—

Figure 1 represents in elevation a slasher cylinder head provided with an insulation embodying my invention. Fig. 2 shows the cylinder in cross vertical section through the center thereof. Fig. 3 is a section on the line 3—3 of Fig. 1. Fig. 4 is a section on the line 4—4 of Fig. 1. Fig. 5 is a section on the line 5—5 of Fig. 1, and Fig. 6 is a section on the line 6—6 of Fig. 1.

Referring to the drawings:—1 represents a slasher cylinder of which 2 is the rim of the cylinder and 4, 4 the heads thereof, respectively. The rim 2 is secured to the head by rings 5 in which the edges of the rim are bound and which in turn are secured to the heads of the cylinder by cap screws 6 having heads 7. The heads of the cylinder are otherwise connected and the cylinder reinforced by cross-running stay bolts 8 having nuts 9 on the ends thereof outside the cylinder heads and bearing against the same.

In the heads of the cylinder various openings are formed among which are the openings 10 at the journal box, 11 an opening for the vacuum valve, and 12 a manhole opening which is normally closed by a cover 13 held by cap screws 14.

Covering each head of the cylinder is a casing 15. Each casing consists of a sheet steel plate which is spaced preferably about one inch from the cylinder head. The casing is of such size as to cover the heads of the cap screws 6 which secure the heads of the cylinder to the rim as aforesaid. The casing is held in place by means of screws 16 which pass through the casing just adjacent the peripheral edge thereof and enter holes 17 tapped in the head 7 of the respective cap screws.

In the space left between each casing 15 and the head of the cylinder is a partition or auxiliary casing 18 lying parallel with the casing 15 and the head of the cylinder and dividing the space between the same into two compartments 19 and 20, respectively. The outer open edges of these compartments are closed by means of a sheet metal ring 21 extending between the casing 15 and the head of the cylinder and having such diameter that it will lie snugly between the peripheral edge of the partition 18 and the heads 7 of the cap screws. The rings 21 apart from closing the compartments 19 and 20, respectively, operate also with the heads of the cap screws to hold the partitions 18 in place against edgewise displacement. Each partition 18 is held against lateral displacement and in properly spaced position from the casing 15 and head of

the cylinder by means of space blocks 22, 23, respectively, which are secured by screws 24 countersunk into the space blocks 22 and passing through the same and holes in the partition to enter threaded holes in the other space block 23.

It is necessary to have a number of holes cut in the casings and partitions for the stay bolts, the manhole, the vacuum valve and the journal box. Means have accordingly been provided not only for properly positioning and holding the casings and partitions but also for closing the respective air compartments around the various holes formed in the casings and partitions.

At the opening adjacent the end of each stay bolt (as may be seen by reference to Fig. 5) there is provided a casting 25 which slips over the nut 9 on the bolt and rests against the cylinder head. This casting is provided with an annular flange 26 equal in thickness to the width of the air space or compartment 19. Upon the shelf provided by this flange the edge portion of the partition 18 around the opening in it rests and is secured by screws 27 passing through the partition and threaded into the flange. Above the flange the casting 25 is provided with an annular rim 28. This rim projects a distance equal to the depth of the second air space or compartment 20 and upon the outer edge of this rim rests that portion of the casing 15 around the opening in it. A circular nut 29 is threaded upon the end of the stay bolt 8 extending through the nut 9. The circular nut 29 is provided with an annular flange 30 which contacts with that portion of the edge of the outer casing bearing against the rim 28 as aforesaid, binding and holding the casing securely in place when the nut is screwed down.

Around the openings formed in the casings and partitions for the journal box and vacuum valve the casing and partition are held and the air spaces or compartments closed as may be seen by reference to Fig. 3. Here there is provided an annular casting 31 having an annular flange 32 equal in thickness to the depth of the air space or compartment 19 between the cylinder head and the partition. The edge of the partition around the opening in it rests upon this flange and is secured thereto by screws 33 passing through the partition and extending into the flange. The casting 31 is also provided with an annular rim 34 projecting above the flange 32 and partition resting thereon a distance equal to the depth of the air space or compartment 20. The edge of the casing 15 around the opening in it rests upon the top surface of this rim and is secured thereto by screws 35 passing through the casing and extending into the rim.

At the manhole where a further opening in the casing and partition is made the partition is held in a properly spaced position between the cylinder head and the casing by means of space blocks 36 and 37 interposed respectively between the partition and the casing on one side and the partition and the head of the cylinder on the other side (see Fig. 6). These space blocks are held in place and secured to the partition by screws 38 the heads of which are socketed within the space blocks 36 and the shanks of which extend through these space blocks and through the partition into the other space blocks 37. The outer casing is held by a sheet metal piece 39 placed over the manhole opening in it. This piece is larger than the opening in the casing so as to lap onto the same and is secured by screws 40 which are threaded into holes formed in the heads of the cap screws 14 which hold the cover 13 of the manhole as aforesaid. The compartments or air spaces 19 and 20 are closed around the openings in the casing and partition for the manhole by means of a sheet metal ring 41 extending between the piece 39 and the outer face of the cylinder head 4. This ring is about the diameter of the openings in the partition and casing, respectively, or so that it will lie outside the heads of the cap screws 14 and snugly against the adjacent edges of the partition and casing.

The above construction makes not only a very efficient insulating structure, better than the magnesia covering, but also considerably cheaper. It is one also impervious to water leakage and accordingly possesses a further advantage over the magnesia covering which would absorb water leakage and this tended to unbalance the cylinder.

Having thus fully described my invention, I claim and desire to secure by Letters Patent of the United States:—

1. The combination in a slasher cylinder, of a rim, a head, cap screws securing said rim to said head adjacent the peripheral edge of said head, a sheet metal casing covering said head and spaced therefrom to form an air space between said casing and said head, means for securing said casing to the heads of said cap screws, and a ring interposed between said casing and said head closing said air space around the edge thereof.

2. A slasher cylinder having a head, a fixed casing covering said head and spaced therefrom to provide an air space between said casing and said head, means for closing said air space adjacent the outer edge of said casing, said casing having also an opening therein, an annular member interposed between said casing and said head closing said opening, said member presenting also an edge against

which said casing bears, and means for securing said casing to said member.

3. A slasher cylinder having a head, a cross bolt extending through said head with a nut thereon bearing against said head, a casing covering said head and spaced therefrom to provide an air space between said casing and said head, said casing having an opening therein for receiving the end of said cross bolt and nut thereon, an annular member fitted over the nut on said cross bolt and against which said casing bears, and a flanged nut secured to the projecting end of said cross bolt and engaging said casing by which the bearing thereof is maintained against said member.

4. A slasher cylinder having a head with a manhole therein, a cover for said manhole, cap screws for holding said manhole cover in place, a casing covering said head and spaced therefrom to provide an air space between said casing and said head, said casing having an opening therein in line with said manhole, a plate covering the opening in said casing, means for securing said plate to the heads of said cap screws, and a ring interposed between said plate and said cylinder head for closing the air space between said casing and head from said manhole opening.

5. The combination in a slasher cylinder, of a rim, a head, cap screws securing said rim to said head adjacent the peripheral edge of said head, a sheet metal casing covering said head and spaced therefrom to form an air space between said casing and said head, means for closing said air space, a partition contained within said air space and dividing the same into separate closed compartments, and means for supporting said partition.

6. The combination in a slasher cylinder, of a rim, a head, cap screws securing said rim to said head adjacent the peripheral edge of said head, a sheet metal casing covering said head and spaced therefrom to form an air space between said casing and said head, means for closing said air space, a partition contained within said air space and dividing the same into separate closed compartments, openings in said partition adjacent the peripheral edge thereof, a pair of space blocks for each opening, one on each side of said partition, and a screw passing through one space block and the opening in the partition and secured to the other space block whereby the partition is supported intermediate the casing and head.

7. A slasher cylinder having a head provided with a casing covering said head and spaced therefrom to provide an air space between said casing and said head, a partition interposed between said head and said casing dividing said air space into separate compartments, said casing and partition having openings therein, means for closing said compartments adjacent the outer edge of said casing, and means for closing said compartments from said openings.

8. A slasher cylinder having a head provided with a casing covering said head and spaced therefrom to provide an air space between said casing and said head, a partition interposed between said head and said casing dividing said air space into separate compartments, the said casing and partition having openings therein, means for retaining said casing and partition around and adjacent the peripheral edges thereof, annular members around the openings in said casing and partition closing said compartments from said openings, said annular members presenting also edges against which said casing and partition bear, respectively, and means for securing said casing and partition to said members.

9. A slasher cylinder having a head, a cross bolt extending through said head with a nut thereon bearing against said head, a casing covering said head and spaced therefrom to provide an air space between said casing and said head, a partition dividing said air space into separate compartments, said casing and partition each having an opening therein for receiving the end of said cross bolt and nut thereon, an annular member within said openings fitting over the nut on said cross bolt and providing edges against which said casing and partition bear, means for securing said partition to said member, and a flanged nut arranged upon the projecting end of said cross bolt and engaging said casing by which the bearing thereof is maintained against said member.

10. A slasher cylinder having a head with a manhole therein, a cover for said manhole, cap screws for holding said manhole in place, a casing covering said head and spaced therefrom to provide an air space between said casing and said head, a partition dividing said air space into separate compartments, said casing and partition each having an opening therein in line with said manhole, a plate covering the opening in said casing, means for securing said plate to the heads of said cap screws, space blocks for maintaining said partition around the opening therein, and a ring interposed between said plate and said cylinder head for closing said compartments from said manhole opening.

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Witnesses:
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Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."