

PATENT SPECIFICATION (11)

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(54) IMPROVEMENTS IN OR RELATING TO PROTECTIVE APPARATUS FOR FACILITATING THE SAFE HANDLING OF SUBSTANCES DANGEROUS TO HEALTH

(71) I, WILLIAM FRANCIS ATKINSON, a British Subject, of 16b Theodore Road, Lewisham, London, S.E.13, do hereby declare the invention, for which I pray that

a patent may be granted to me, and the method by which it is to be performed, to be particularly described in and by the following statement:—

This invention relates to protective apparatus for facilitating the safe handling of substances dangerous to health or safety, and has a particularly important but not exclusive application in relation to the removal of asbestos lagging from piping.

In recent years a great deal of attention has been focussed on the long-term dangers involved in handling asbestos, and in many applications after substitute materials are being used. However, asbestos lagging has been used for many years, for example on pipework, and where the lagging starts to disintegrate, whether as a result of physical damage or age, the lagging must be stripped off. This stripping work, which often produces a great deal of asbestos dust in a confined space, is a considered hazard to health.

According to the present invention in one aspect, a method of stripping lagging from a length of pipe comprises the step of placing about the length of pipe the upper end portion of a bag made from plastics sheet material which is transparent in at least the regions adjacent the pipe, the bag enclosing said length and being substantially sealed with respect to the ends of said length and having sleeve portions through which the operator can insert his hands into the space within the bag to enable him to strip the lagging from the pipe and which form a sealing fit about the arms of the operator, the stripped lagging falling into the bottom portion of the bag.

The invention also provides a protective apparatus comprising a bag having one end sealed and having its other end adapted to be detachably secured about a length of lagged pipe, forming a seal with opposite

ends of said length, said bag being made from plastics sheet material which is transparent in at least the regions thereof to be adjacent the pipe, and the bag having sleeve portions through which an operator can insert his hands into the interior of the bag for work on the pipe and which are adapted to form a sealing fit about the arms of the operator.

Preferably, the cuffs of the sleeve portions are elasticated to form substantially a seal with the operator's arms.

According to a preferred feature of the invention the bag has means for securing the front and back walls of the bag together at a location between the sleeve portions and said one end of the bag.

The invention will now be described in more detail with reference by way of example to the accompanying drawings in which:

Figure 1 shows a front view of a protective apparatus according to the invention, and

Figure 2 is a cross-section on the line 2—2 of Figure 1.

Referring to the drawings, the protective apparatus 10 is made from transparent plastics sheet material and all its seams are welded. The apparatus is in the form of a bag with front and back walls 11a, 11b which bag acts as a receptacle for the stripped asbestos lagging and which may be gusseted to increase its capacity as necessary. At its upper end, the bag has front and back flaps 12, 13 which are placed about a section of the length of a pipe 14 with asbestos lagging 15. The edges of these flaps meet when the flaps are so placed about the pipe and have formed integrally with them or welded to them the components of a sliding clasp fastener 16 which forms a seal between the two flaps. This fastener is conveniently disposed so as to be slightly forward of the top of the pipe, as shown, when the flaps are secured. The flap portions have lateral extensions 17 beyond the bag to cover adjoining lengths

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of the lagged pipe, and the fastener 16 extends along these extensions. The welded seams 19 by which the front and back walls 11a, 11b are secured together terminate at 19a, short of the ends of the lateral extensions 17. At each of the corners 21 adjoining the extensions 17, a plastics reinforcing disc is welded to the walls 11a, 11b to reinforce the seam 19.

10 In apertures in the front wall 11a of the bag, adjacent its upper end two sleeves 18 are secured which extend into the interior of the bag. These sleeves are for accommodating the operator's arms to enable him to use his hands within the bag. The internal ends of the sleeves have hems incorporating bands of elastic so that they grip about the operator's wrists to maintain the bag sealed.

15 Below the sleeves the two fastening strips of a Velcro (R.T.M.) fastener 20 are secured to the inner faces of the bag for joining the front and back walls of the bag together to seal the lower part of the bag when the lagging has been removed. The fastening strips are respectively covered by plastics flaps 22 covering the strips from their upper margins, so that asbestos falling into the bag does not strike and become attached to the strips and thus reduce their fastening efficiency. The ends of the fastening strips and the covering flaps 22 terminate just short of the welds 19.

20 In use of the bag, the fastener 20 is initially left unfastened, the flaps 12, 13 are fastened about the section of pipe which is to be stripped of lagging and the ends of the flap extensions 17 are secured about the pipe by string or laces 17a or other convenient means. The operator then inserts his arms into the sleeves and works on the lagging using handtools if necessary. The displaced lagging falls into the bottom of the bag, which may if necessary be supported on a table or in the angle of a V-shaped supporting surface. When the length of pipe has been stripped of lagging, the operator may insert a water spray through one of the sleeves 18 to clean any remaining lagging remnants off the pipe, to damp down the dust within the bag and to clean his hands.

25 When this has been done, the two fastening strips are pressed together to seal the lagging spoil in the bottom part of the bag, their protective flaps having been folded upward, and the shroud may then be unfastened from the pipe and placed bodily within an outer bag for disposal in accordance with existing regulations. The protective flaps then tend to fall into overlapping relationship and assist in sealing the dust in the bottom of the bag. Where a long section of lagging is to be removed and the capacity of the bag permits, and where hangers or other supports for the pipe permit, the bag may alternatively be moved along the pipe

to the next length after the string or laces at the ends of the extension have been loosened. The string or laces are then re-secured, the fastener 20 is released, and work is continued on the next length of pipe.

70 Sections of the lagged pipe not currently being worked on may be covered by plastics sleeves having a lengthwise extending sliding clasp fastener enabling them to be placed in position and removed.

75 It will be clear that these modes of working when carefully carried out substantially reduce the risks associated with the removal of asbestos lagging.

WHAT I CLAIM IS:—

80 1. A method of stripping lagging from a length of pipe comprises the step of placing about the length of pipe the upper end portion of a bag made from plastics sheet material which is transparent in at least the regions adjacent the pipe, the bag enclosing said length and being substantially sealed with respect to the ends of said length and having sleeve portions through which the operator can insert his hands into the space within the bag to enable him to strip the lagging from the pipe and which form a sealing fit about the arms of the operator, the stripped lagging falling into the bottom portion of the bag.

85 2. A protective apparatus comprising a bag having one end sealed and having its other end adapted to be detachably secured about a length of lagged pipe, forming a seal with opposite ends of said length, said bag being made from plastics sheet material which is transparent in at least the regions thereof to be adjacent the pipe, and the bag having sleeve portions through which an operator can insert his hands into the interior of the bag for work on the pipe and which are adapted to form a sealing fit about the arms of the operator.

90 3. An apparatus as claimed in claim 2, wherein said bag terminates at said other end in two flaps which can be placed about the length of pipe from opposite sides thereof, the flaps meeting each other when so placed about the pipe and having respectively attached to their meeting edges the components of a fastener for securing them sealingly together about the pipe.

95 4. An apparatus as claimed in claim 3, wherein the fastener is a sliding clasp fastener.

100 5. An apparatus as claimed in claim 3 or claim 4, wherein the flaps have lateral extensions adapted to be releasably sealingly fastened about the respective ends of said length of pipe.

105 6. An apparatus as claimed in any one of claims 2 to 5, wherein the bag has means for securing the front and back walls of the bag together at a location between the sleeve portions and said one end of the bag.

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of the lagged pipe, and the fastener 16 extends along these extensions. The welded seams 19 by which the front and back walls 11a, 11b are secured together terminate at 19a, short of the ends of the lateral extensions 17. At each of the corners 21 adjoining the extensions 17, a plastics reinforcing disc is welded to the walls 11a, 11b to reinforce the seam 19.

In apertures in the front wall 11a of the bag, adjacent its upper end two sleeves 18 are secured which extend into the interior of the bag. These sleeves are for accommodating the operator's arms to enable him to use his hands within the bag. The internal ends of the sleeves have hems incorporating bands of elastic so that they grip about the operator's wrists to maintain the bag sealed. Below the sleeves the two fastening strips of a Velcro (R.T.M.) fastener 20 are secured to the inner faces of the bag for joining the front and back walls of the bag together to seal the lower part of the bag when the lagging has been removed. The fastening strips are respectively covered by plastics flaps 22 covering the strips from their upper margins, so that asbestos falling into the bag does not strike and become attached to the strips and thus reduce their fastening efficiency. The ends of the fastening strips and the covering flaps 22 terminate just short of the welds 19.

In use of the bag, the fastener 20 is initially left unfastened, the flaps 12, 13 are fastened about the section of pipe which is to be stripped of lagging and the ends of the flap extensions 17 are secured about the pipe by string or laces 17a or other convenient means. The operator then inserts his arms into the sleeves and works on the lagging using handtools if necessary. The displaced lagging falls into the bottom of the bag, which may if necessary be supported on a table or in the angle of a V-shaped supporting surface. When the length of pipe has been stripped of lagging, the operator may insert a water spray through one of the sleeves 18 to clean any remaining lagging remnants off the pipe, to damp down the dust within the bag and to clean his hands. When this has been done, the two fastening strips are pressed together to seal the lagging spoil in the bottom part of the bag, their protective flaps having been folded upward, and the shroud may then be unfastened from the pipe and placed bodily within an outer bag for disposal in accordance with existing regulations. The protective flaps then tend to fall into overlapping relationship and assist in sealing the dust in the bottom of the bag. Where a long section of lagging is to be removed and the capacity of the bag permits, and where hoovers or other supports for the pipe permit, the bag may alternatively be moved along the pipe

to the next length after the string or laces at the ends of the extension have been loosened. The string or laces are then re-secured, the fastener 20 is released, and work is continued on the next length of pipe.

Sections of the lagged pipe not currently being worked on may be covered by plastics sleeves having a lengthwise extending sliding clasp fastener enabling them to be placed in position and removed.

It will be clear that these modes of working when carefully carried out substantially reduce the risks associated with the removal of asbestos lagging.

WHAT I CLAIM IS:—

1. A method of stripping lagging from a length of pipe comprises the step of placing about the length of pipe the upper end portion of a bag made from plastics sheet material which is transparent in at least the regions adjacent the pipe, the bag enclosing said length and being substantially sealed with respect to the ends of said length and having sleeve portions through which the operator can insert his hands into the space within the bag to enable him to strip the lagging from the pipe and which form a sealing fit about the arms of the operator, the stripped lagging falling into the bottom portion of the bag.

2. A protective apparatus comprising a bag having one end sealed and having its other end adapted to be detachably secured about a length of lagged pipe, forming a seal with opposite ends of said length, said bag being made from plastics sheet material which is transparent in at least the regions thereof to be adjacent the pipe, and the bag having sleeve portions through which an operator can insert his hands into the interior of the bag for work on the pipe and which are adapted to form a sealing fit about the arms of the operator.

3. An apparatus as claimed in claim 2, wherein said bag terminates at said other end in two flaps which can be placed about the length of pipe from opposite sides thereof, the flaps meeting each other when so placed about the pipe and having respectively attached to their meeting edges the components of a fastener for securing them sealingly together about the pipe.

4. An apparatus as claimed in claim 3, wherein the fastener is a sliding clasp fastener.

5. An apparatus as claimed in claim 3 or claim 4, wherein the flaps have lateral extensions adapted to be releasably sealingly fastened about the respective ends of said length of pipe.

6. An apparatus as claimed in any one of claims 2 to 5, wherein the bag has means for securing the front and back walls of the bag together at a location between the sleeve portions and said one end of the bag.

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7. An apparatus as claimed in claim 6, wherein the securing means comprises respective fastening strips attached to inner faces of said walls of the bag, which fastening strips interlock with each other when pressed together.

8. An apparatus as claimed in claim 7, wherein said fastening strips are protected by respective flaps covering the strips from their margins nearer said other end of the bag, the flaps being displaceable to allow the strips to be pressed together.

9. A method of stripping lagging from

a length of pipe substantially as hereinbefore described.

10. A protective apparatus substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

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