Claims

1. A radiation shield assembly, configured to block radiation emanating from a radiation source, the assembly comprising:

(a) a support arm constructed to support at least the majority of the weight of the shield assembly, the support arm having a longitudinal axis;

(b) a first generally planar radiopaque vertical shield fastened to the support arm via a first radiopaque joint; and

(c) a second generally planar radiopaque vertical shield ~~translatably and rotationally connected to the support arm via a second radiopaque joint to rotate about an axis that is approximately parallel to the longitudinal axis of the support arm and to translate along the axis simultaneously with the first generally planer vertical shield~~;

wherein the first generally planar radiopaque vertical shield is configured to translate along ~~the~~ an approximately vertical axis such that in a first position a top edge of the first radiopaque vertical shield is at least ~~about~~ the height of an adult human above the floor.

2. A radiation shield assembly, configured to block radiation emanating from a radiation source from below a table for supporting a patient, the assembly comprising:

(a) an approximately vertical mast configured to be suspended by an overhead boom, the mast configured to support at least the majority of the weight of the shield assembly, the mast defining a longitudinal axis;

(b) a first generally planar vertical shield; and

(c) a second generally planar vertical shield;

wherein the radiation shield assembly is configured to allow the first generally planar vertical shield and the second generally planar vertical shield to be rotated relative to one another about a second axis approximately parallel to the first longitudinal axis;

wherein the radiation shield assembly is configured to position the first generally planar vertical shield to protect a user's upper body from radiation emanating from the radiation source.

~~The radiation shield assembly of any one of claims 1, wherein the support arm comprises an outer sleeve and an inner sleeve dimensioned to fit at least partially inside one end of said outer~~

~~sleeve, and wherein the inner and outer sleeves slide relative to one another to allow the first and second radiopaque vertical shields to translate simultaneously.~~

3. Cancelled~~The radiation shield assembly of any one of claims 1 and 2, wherein the support arm comprises a first outer sleeve and a first inner sleeve dimensioned to fit at least partially inside one end of first outer sleeve, and wherein the first inner and first outer sleeves slide relative to one another to allow the first and second radiopaque vertical shields to translate simultaneously; and wherein the support arm comprises a second inner sleeve dimensioned to fit at least partially inside the other end of the outer sleeve; and wherein the second inner and first outer sleeves slide relative to one another to allow the first and second radiopaque vertical shields to translate independently.~~

4. Cancelled~~The radiation shield assembly or system of any one of claims 1, 2, and 3, wherein the first and the second radiopaque vertical shields are configured to rotate relative to one another over an arc of up to about 180°.~~

3[[5.]] The radiation shield assembly or system of any one of claims 1~~,~~ and 2~~,~~ ~~3 and 4,~~ wherein the support arm comprises an approximately vertical mast.

4[[6]]. The radiation shield assembly or system of any one of claims 1-3, ~~2, 3, 4, and 5~~, wherein the support arm is capable of supporting ~~about~~ the entire weight of the radiation shield assembly, ± 20%.

7. Cancelled~~The radiation shield assembly or system of any one of claims 1, 2, 3, 4, 5 and 6, comprising a first approximately horizontal radiopaque shield connected to the first radiopaque vertical shield so as to translate and rotate with the first radiopaque vertical shield, wherein the first radiopaque vertical shield and the first radiopaque approximately horizontal shield are configured to translate together along the support arm.~~

5[[8]]. The radiation shield assembly or system of any one of claims 1 -4~~,2, 3, 4, 5,~~ and ~~6, and 7~~, wherein the first radiopaque vertical shield is configured to translate along an approximately

vertical axis such that in a first position a top edge of the first radiopaque vertical shield is at least ~~about 2 m~~175 cm above the floor (± 20%).

6[[9]]. The radiation shield assembly or system of any one of claims 1-5~~, 2, 3, 4, 5, 6, 7, and 8~~, wherein the first radiopaque vertical shield has a height of at least ~~about~~ the distance from the upper surface of ~~an operating~~the table to an average human's ~~full~~ standing height (± 20%).

7[[10]]. The radiation shield assembly or system of any one of claims 1-6~~, 2, 3, 4, 5, 6, 7, 8, and 9~~, wherein at least one of said radiopaque shields has a radiopacity of at least 0.5 mm lead equivalent.

8[[11]]. The radiation shield assembly or system of any one of claims 1-7, ~~2, 3, 4, 5, 6, 7, 8, 9, and 10~~, wherein at least one of said radiopaque shields has a radiopacity of at least 3 mm lead equivalent.

9[[12]]. The radiation shield assembly or system of any one of claims 1~~-, 2, 3, 4, 5, 6, 7,~~ 8, ~~9, 10, and 11~~, wherein at least one of said radiopaque shields reduce radiation exposure by at least 85% when measured by the Modified ASTM F3094/IEC 61331-1 Protocol.

10[[13]]. The radiation shield assembly or system of any one of claims 1-9, ~~2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 12,~~ wherein all of said shields reduce radiation exposure to no more than ~~about~~ 2.5 mR/hr (± 20%) when measured by the Modified ASTM F3094/IEC 61331-1 Protocol.

14. Cancelled~~The radiation shield assembly or system of any one of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, and 13, wherein the second radiopaque vertical shield and the second radiopaque approximately horizontal shield are configured to translate together along the support arm.~~

11[[15]]. The radiation shield assembly or system of any one of claims 1-10~~, 2, 3, 4, 5, 6, 7,~~8, 9, 10, 11, and 1~~3~~,~~, and 14,~~ wherein the support arm comprises a mast supported by a floor stand.

16. Cancelled~~The radiation shield assembly or system of any one of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, and 15, wherein at least one of said shields is transparent to visible light.~~

17. Cancelled~~The radiation shield assembly or system of any one of claims 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 13, 14, 15, and 16, wherein to the assembly is configured to allow the first and second radiopaque vertical shields to translate independently.~~

12. The radiation shield assembly of any one of claims 1-11, wherein the first generally planar radiopaque vertical shield is configured to be positioned such that a top edge of the first radiopaque generally planar vertical shield is at least the height of an adult human above the floor (± 20%).

13. The radiation shield assembly of any one of claims 1-12, wherein the second axis is the same as the first longitudinal axis.

14. The radiation shield assembly of any one of claims 1-13, wherein the first generally planar radiopaque vertical shield has a height of at least the distance from the upper surface of the table to an average human's full height (± 20%).

15. The radiation shield assembly of any one of claims 1-14, wherein the support arm is configured to translate the entire radiation shield assembly relative to the table.

16. The radiation shield assembly of any one of claims 1-15, wherein the support arm comprises an approximately vertical mast configured to be suspended by an overhead boom.

17. The radiation shield assembly of any one of claims 1-16, configured to position the first generally planar vertical shield and the second generally planar vertical shield to protect the user's head from radiation emanating from the radiation source.