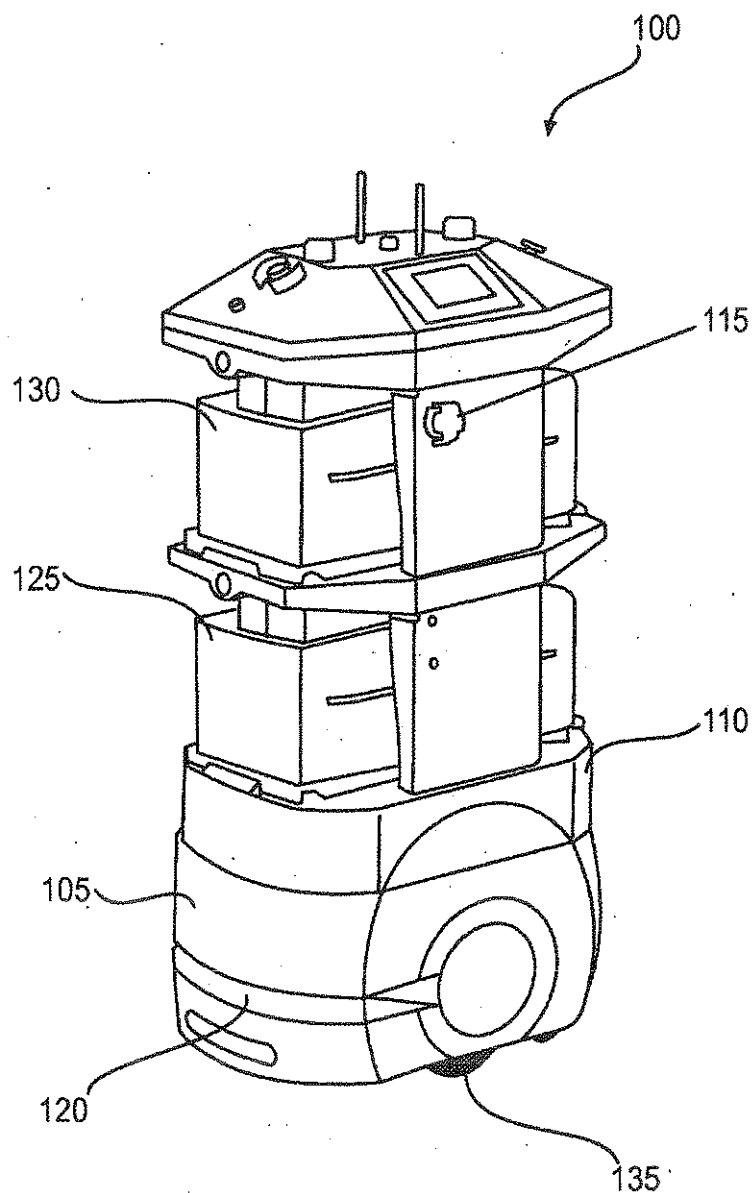


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**FIG. 1**

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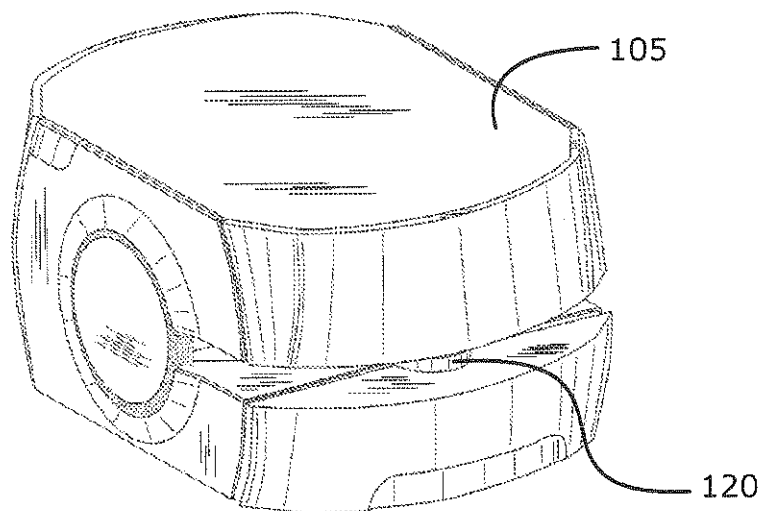


FIG. 2A

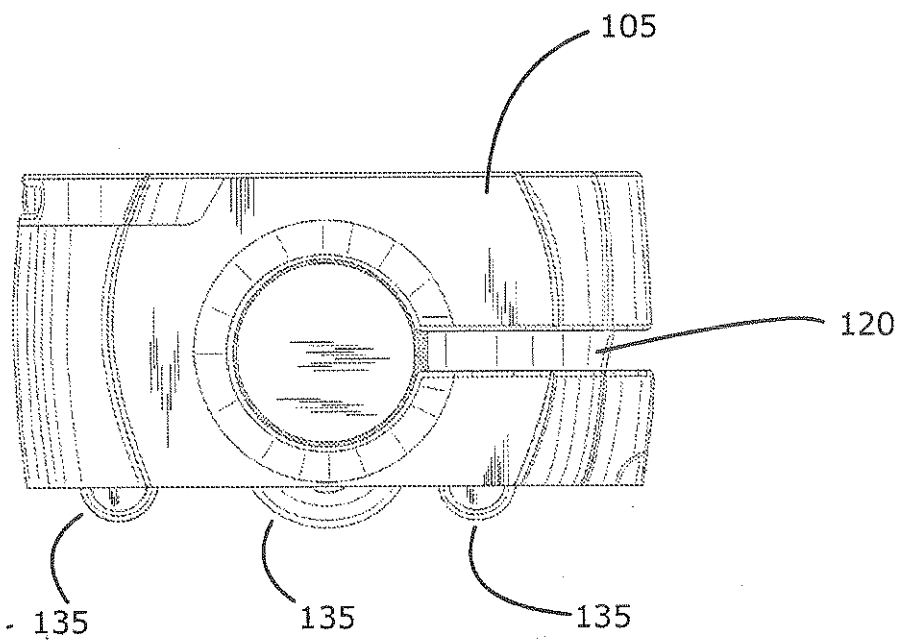
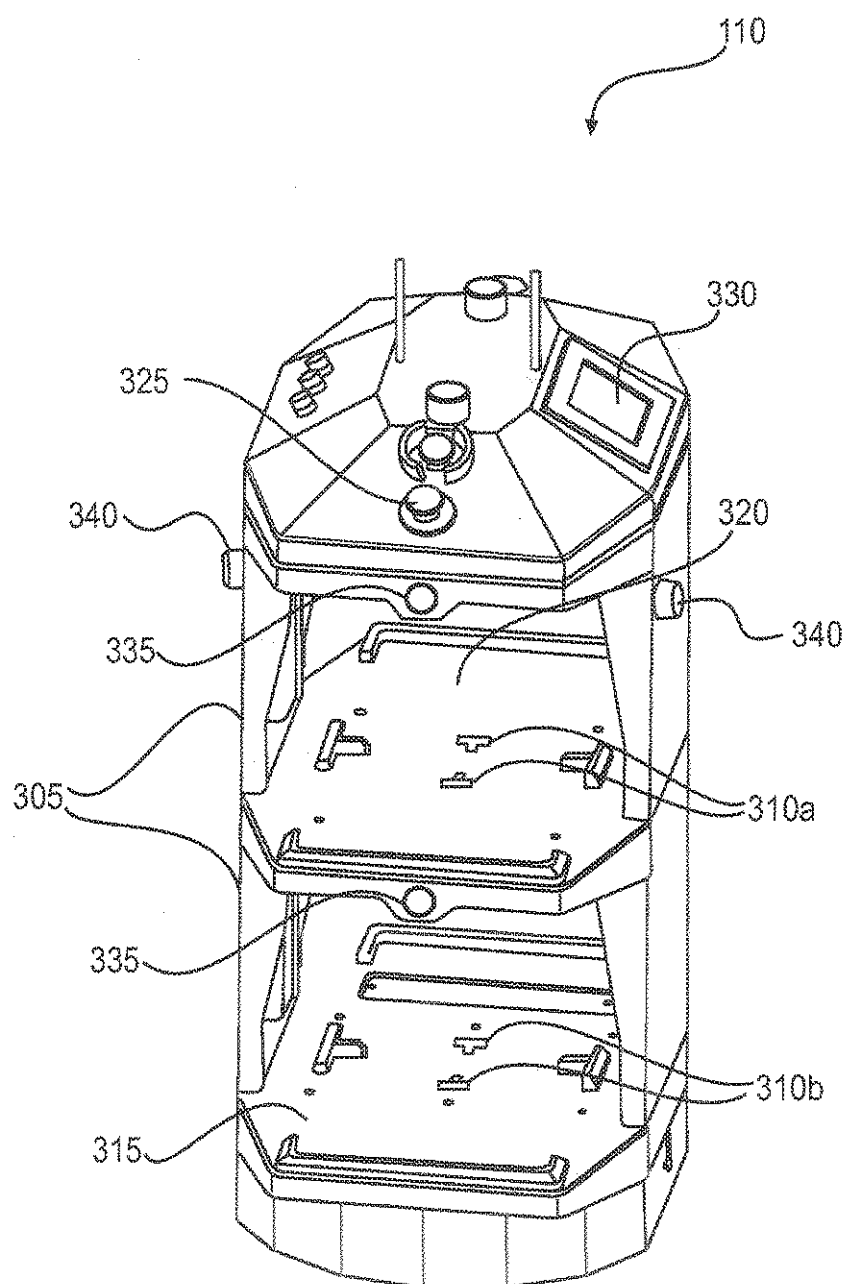


FIG. 2B

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**FIG. 3**

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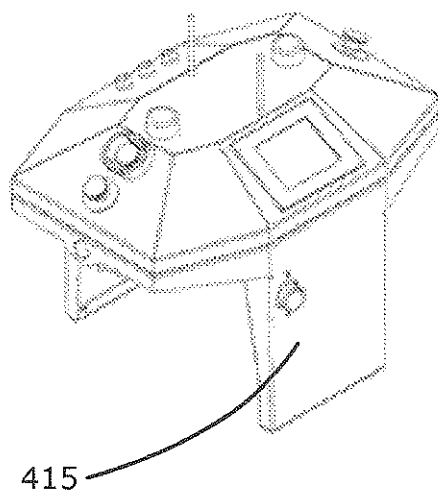


FIG. 4A

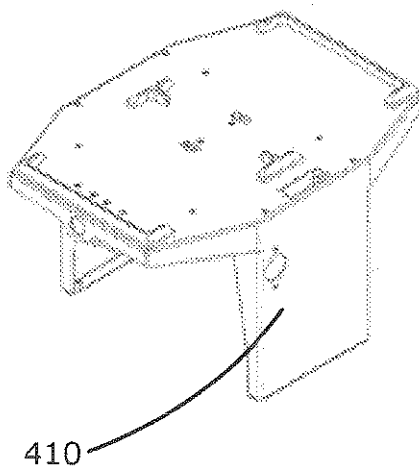


FIG. 4B

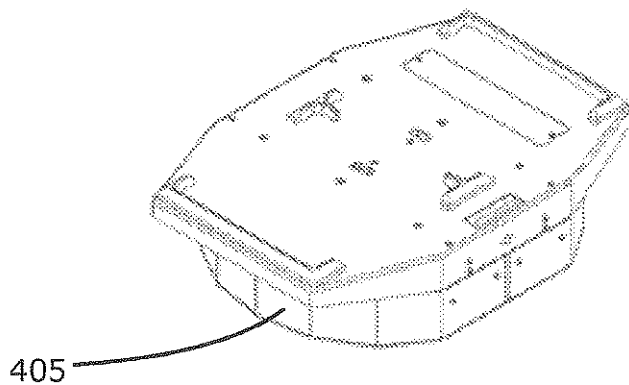


FIG. 4C

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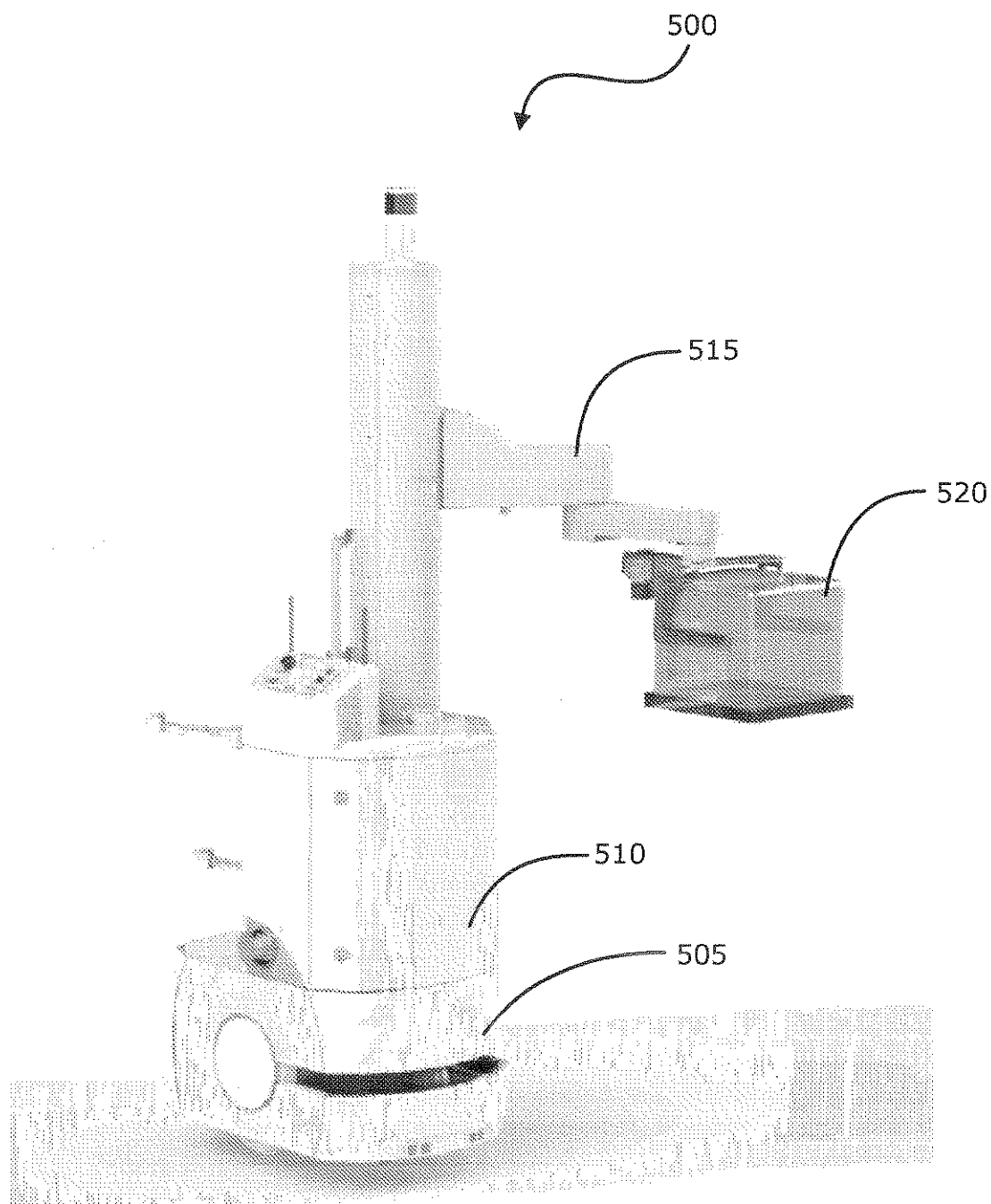
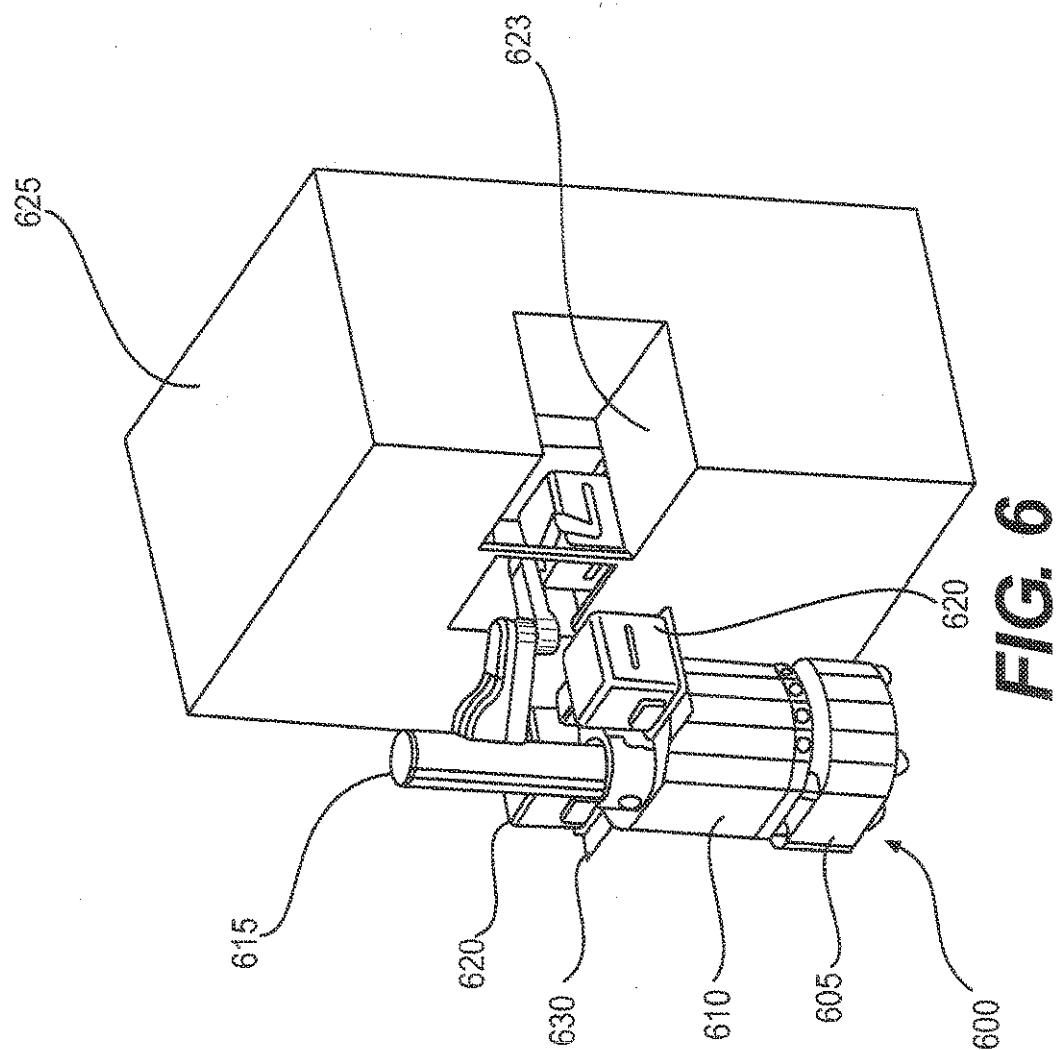
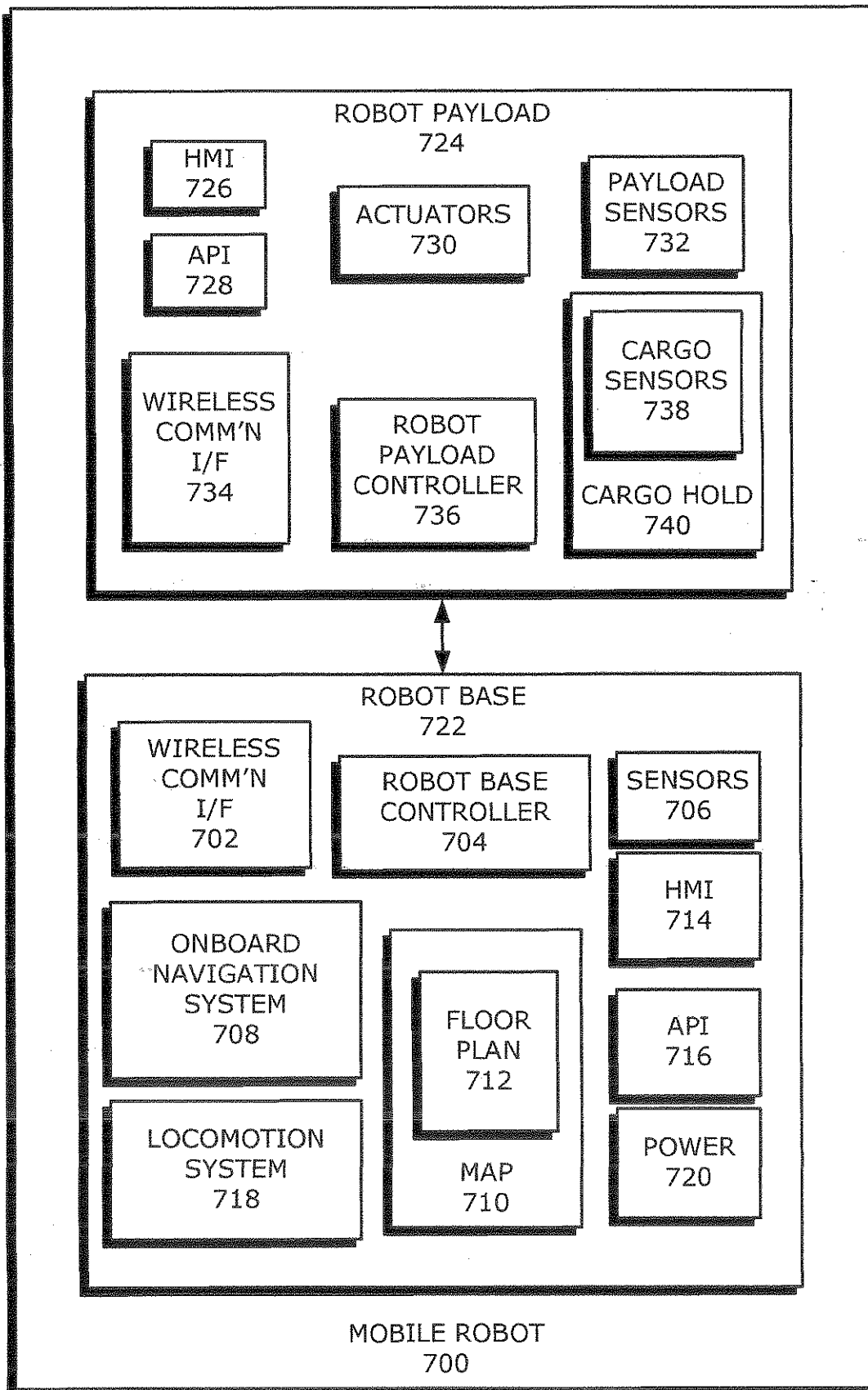


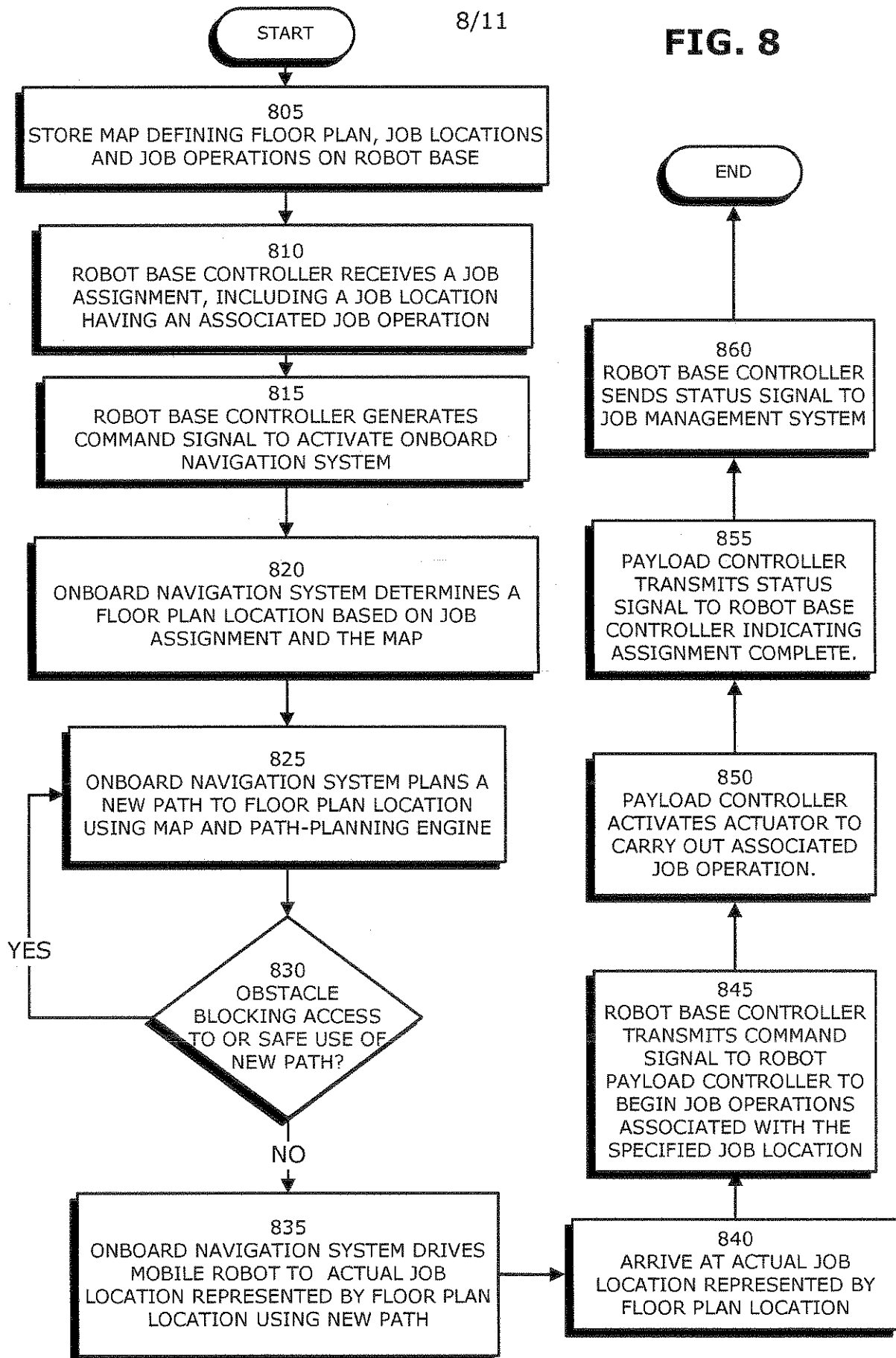
FIG. 5

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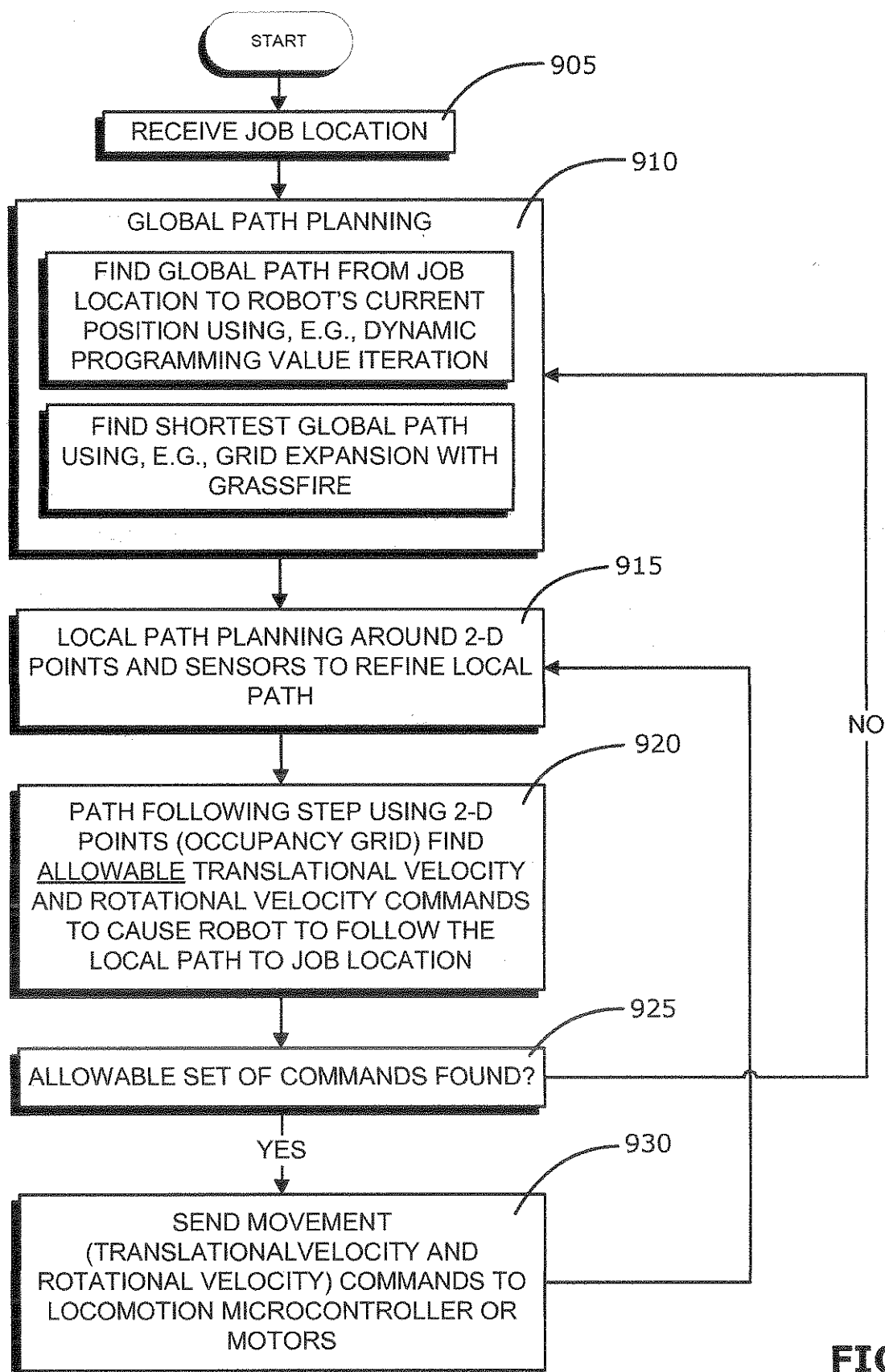


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**FIG. 7**



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**FIG. 9**

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2D-Map
 MapInfo: DockType "Name=Dock" "Label=Dock" "NameRequired=1" "Color0=0xffff00" "HeadingRequired"
 MapInfo: GoalType "Name=Goal" "Label=Goal" "NameRequired=1" "Color0=0x000080" "Color1=0x00ffff" "Color2=0x000080"
 MapInfo: SectorType "Name=ResistedSector" "Label=ResistedSector" "Desc=Area that the robot will try to avoid, but will drive through if necessary." "NameRequired=1" "Color0=0xff00ff" "Color1=0x000080" "NameRequired=1"
 MapInfo: SectorType "Name=TwoWayDriveOnRightSector" "Label=PreferredDirectionRight" "Desc=Two Way Drive on Right" "NameRequired=1" "Color0=0xadd8e6" "Color1=0x000080" "Color2=0x000080"
 MapInfo: ResistedSector 0 0 0.000000 "ICON" "ResistedSector17" -22940 -14446 -14715 -12764
 MapInfo: ResistedSector 0 0 0.000000 "ICON" "ResistedSector14" -22794 -12582 -7732 -10205
 MapInfo: GoalWithHeading -20215 -8465 -87.900000 "ICON" "Mechanical"
 MapInfo: ResistedSector 0 0 0.000000 "ICON" "ResistedSector18" -18240 -10369 -14050 -9911
 MapInfo: Goal -13843 -3056 0.000000 "ICON" "Software"
 MapInfo: ResistedSector 0 0 0.000000 "ICON" "ResistedSector15" -12453 -10401 -9276 -9816
 MapInfo: ResistedSector 0 0 0.000000 "ICON" "ResistedSector13" -7824 15831 -6354 16802
 MapInfo: Goal -7126 -18086 0.000000 "ICON" "Empty Conference"
 MapInfo: Goal -5823 -7570 0.000000 "ICON" "RD Lab West Mid"
 MapInfo: GoalWithHeading -5693 -1653 135.145272 "ICON" "RD Lab West North"
 MapInfo: GoalWithHeading -3908 -28384 -179.800000 "ICON" "Offices"
 MapInfo: ResistedSector 0 0 0.000000 "ICON" "ResistedSector12" -1804 -10937 1082 -7773
 MapInfo: TwoWayDriveOnRightSector 0 0 0.000000 "ID=13346" "PreferredDirectionRight1" 2271 -18108 14449 -13021
 MapInfo: ResistedSector 0 0 0.000000 "ICON" "ResistedSector16" 3896 -27097 6854 -25557
 MapInfo: GoalWithHeading 4195 -28833 -80.258274 "ICON" "Hall Entry"
 MapInfo: GoalWithHeading 5868 -18253 -90.000000 "ICON" "RD Mid"
 MapInfo: GoalWithHeading 17212 -1515 -90.000000 "ID=3145776" "RD Northeast"
 MapInfo: Goal 18401 -17381 0.000000 "ICON" "Closet"
 MapInfo: GoalWithHeading 19228 -25601 -154.771535 "ICON" "Training"
 MapInfo: Goal 21597 -7451 0.000000 "ICON" "RD comm support"
 LINES
 -28162 -6218 -21563 -6227
 -24148 -2057 -24182 -6218
 -24141 168 -24148 -2057
 -24096 -10015 -24097 -13709
 -24096 -1842 -24096 -1843

FIG. 10

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FIG. 11

