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package Flaschenzug
  model Decke
    //Parameter
    parameter Modelica.Units.SI.Height height = 5.0 "Höhe der Decke";
    //Connectoren
    Modelica.Mechanics.Translational.Interfaces.Flange_a flange_a
  annotation(
    Placement(visible = true, transformation(origin = {0, 88}, extent
    = {{-10, -10}, {10, 10}}, rotation = 0), iconTransformation(origin =
    {1, -1}, extent = {{-5, -5}, {5, 5}}, rotation = 0)));
    equation
      flange_a.s = height;
    annotation(
      Diagram(coordinateSystem(extent = {{-100, -20}, {100, 20}})),
      Icon(graphics = {Rectangle(origin = {2, 6}, fillPattern =
      FillPattern.Solid, extent = {{-100, 2}, {100, -2}})},
      coordinateSystem(extent = {{-100, -20}, {100, 20}})));
    end Decke;

    model Seil
      //Connectoren
      Modelica.Mechanics.Translational.Interfaces.Flange_a flange_a
    annotation(
      Placement(visible = true, transformation(origin = {4, 90}, extent
      = {{-10, -10}, {10, 10}}, rotation = 0), iconTransformation(origin =
      {-8.88178e-16, 88}, extent = {{-6, -6}, {6, 6}}, rotation = 0)));
      Modelica.Mechanics.Translational.Interfaces.Flange_b flange_b
    annotation(
      Placement(visible = true, transformation(origin = {4, -92},
      extent = {{-10, -10}, {10, 10}}, rotation = 0),
      iconTransformation(origin = {-4.44089e-16, -88}, extent = {{-6, -6},
      {6, 6}}, rotation = 0)));
      equation
        flange_a.f + flange_b.f = 0;
        flange_a.s = flange_b.s;
      annotation(
        Diagram(coordinateSystem(extent = {{-15, -100}, {15, 100}})),
        Icon(graphics = {Rectangle(rotation = -90, fillColor = {212, 183,
        19}, fillPattern = FillPattern.Forward, lineThickness = 0.5, extent =
        {{-83, 6}, {83, -6}})}, coordinateSystem(extent = {{-15, -100}, {15,
        100}})));
      end Seil;

    model Umlenkrolle
      //Connectoren
      Modelica.Mechanics.Translational.Interfaces.Flange_a flange_l
    annotation(
      Placement(visible = true, transformation(origin = {-60, 0},
      extent = {{-10, -10}, {10, 10}}, rotation = 0),
      iconTransformation(origin = {-59, -1}, extent = {{-5, -5}, {5, 5}},

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rotation = 0)));
  Modelica.Mechanics.Translational.Interfaces.Flange_a flange_r
annotation(
  Placement(visible = true, transformation(origin = {60, 0}, extent
= {{-10, -10}, {10, 10}}, rotation = 0), iconTransformation(origin =
{61, -1}, extent = {{-5, -5}, {5, 5}}, rotation = 0)));
  Modelica.Mechanics.Translational.Interfaces.Flange_b flange_m
annotation(
  Placement(visible = true, transformation(origin = {0, 0}, extent
= {{-10, -10}, {10, 10}}, rotation = 0), iconTransformation(origin =
{1, -1}, extent = {{-5, -5}, {5, 5}}, rotation = 0)));
  equation
    flange_r.f + flange_l.f = -flange_m.f;
    flange_l.f = flange_r.f;
    flange_r.s + flange_l.s = 2* flange_m.s;
  annotation(
    Diagram(coordinateSystem(extent = {{-60, -60}, {60, 60}})),
    Icon(graphics = {Ellipse(fillColor = {91, 91, 91}, fillPattern =
FillPattern.Solid, extent = {{-60, 60}, {60, -60}})},
coordinateSystem(extent = {{-60, -60}, {60, 60}})));
end Umlenkrolle;

model Masse
  //Konstanten
  import Modelica.Constants.g_n "durchschnittliche
Erdbeschleunigung";
  //Parameter
  parameter Modelica.Units.SI.Mass mass = 5 "Masse der Masse";
  //Variablen
  Modelica.Units.SI.Velocity v "Geschwindigkeit vertikal";
  Modelica.Units.SI.Acceleration a "Beschleunigung vertikal";
  Modelica.Mechanics.Translational.Interfaces.Flange_a flange_a
annotation(
  Placement(visible = true, transformation(origin = {0, 18}, extent
= {{-10, -10}, {10, 10}}, rotation = 0), iconTransformation(origin =
{0, 20}, extent = {{-4, -4}, {4, 4}}, rotation = 0)));
  equation
    der(v)=a;
    der(flange_a.s) = v;
    mass * a = flange_a.f + mass * (-g_n);
  annotation(
    Icon(graphics = {Rectangle(fillPattern = FillPattern.Solid,
extent = {{-40, 20}, {40, -20}})}, coordinateSystem(extent = {{-50,
-25}, {50, 25}})),
    Diagram(coordinateSystem(extent = {{-50, -25}, {50, 25}})));
end Masse;

model Hand
  //Konstanten
  import Modelica.Constants.g_n "durchschnittliche

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Erdbeschleunigung";
//Variablen
Modelica.Units.SI.Velocity v "Geschwindigkeit vertikal";
Modelica.Units.SI.Acceleration a "Beschleunigung vertikal";
//Connectoren
Modelica.Mechanics.Translational.Interfaces.Flange_a flange_a
annotation(
  Placement(visible = true, transformation(origin = {-36, 0},
extent = {{-10, -10}, {10, 10}}, rotation = 0),
iconTransformation(origin = {-14, 0}, extent = {{-10, -10}, {10, 10}},
rotation = 0)));
equation
  der(flange_a.s) = v;
  der(v) = a;
  a = g_n;
  annotation(
    Diagram(coordinateSystem(extent = {{-65, -65}, {105, 65}})),
    Icon(graphics = {Rectangle(origin = {55, -1}, fillColor = {238,
209, 176}, fillPattern = FillPattern.Solid, extent = {{47, 41}, {-47,
-41}}), Ellipse(origin = {-13, 0}, fillColor = {238, 209, 176},
fillPattern = FillPattern.Solid, extent = {{-51, 64}, {51, -64}})},
coordinateSystem(extent = {{-65, -65}, {105, 65}})}));
end Hand;

model modell1
  Flaschenzug.Decke decke(height = 0) annotation(
    Placement(visible = true, transformation(origin = {-1, 86.2},
extent = {{-79, -15.8}, {79, 15.8}}, rotation = 0)));
  Flaschenzug.Seil seil1 annotation(
    Placement(visible = true, transformation(origin = {-15, 6.66667},
extent = {{-6.5, -43.3333}, {6.5, 43.3333}}, rotation = 0)));
  Flaschenzug.Masse masse(mass = 5) annotation(
    Placement(visible = true, transformation(origin = {-40, -62},
extent = {{-13, -6.5}, {13, 6.5}}, rotation = 0)));
  Flaschenzug.Seil seil annotation(
    Placement(visible = true, transformation(origin = {23, 1.33333},
extent = {{-6.5, -43.3333}, {6.5, 43.3333}}, rotation = 0)));
  Flaschenzug.Umlenkrolle umlenkrolle annotation(
    Placement(visible = true, transformation(origin = {2, 62}, extent
= {{-12, -12}, {12, 12}}, rotation = 0)));
  Hand hand annotation(
    Placement(visible = true, transformation(origin = {50, -62},
extent = {{-6.5, -6.5}, {10.5, 6.5}}, rotation = 0)));
equation
  connect(masse.flange_a, seil1.flange_b) annotation(
    Line(points = {{-40, -56}, {-14, -56}, {-14, -32}}, color = {0,
127, 0}));
  connect(seil1.flange_a, umlenkrolle.flange_l) annotation(
    Line(points = {{-14, 44}, {-10, 44}, {-10, 62}}, color = {0, 127,
0}));

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connect(umlenkrolle.flange_m, decke.flange_a) annotation(
    Line(points = {{2, 62}, {0, 62}, {0, 86}}, color = {0, 127, 0}));
connect(umlenkrolle.flange_r, seil.flange_a) annotation(
    Line(points = {{14, 62}, {24, 62}, {24, 40}}, color = {0, 127,
0}));
connect(hand.flange_a, seil.flange_b) annotation(
    Line(points = {{48, -62}, {24, -62}, {24, -36}}, color = {0, 127,
0}));
end modell1;
annotation(
    uses(Modelica(version = "4.0.0")));
end Flaschenzug;

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