visible surface of the button assembly **16** extends away from the fulcrum (i.e. away from the user's hand) and a spring beam **18**. The spring beam can be made of molded plastic or other suitable material with a molded plastic hinge joint serving as the fulcrum and connecting the button assembly to the housing **19** of the device. The electronic switch **12** beneath the button is configured to be electrically coupled to a computer or other device. Depressing the external surface of the button assembly **16** actuates the switch **12** by pushing the plunger **20** against a spring-loaded movable switch element **22**, which returns to a default position and switch state after the actuating force has been removed from the button assembly **16**.

[**0020**] The force required to actuate the button assembly **16** decreases with increasing distance from the fulcrum **14** because of the leverage obtained. Thus, the larger the user's hand, the further the point of force application on the button assembly **16** relative to the fulcrum **14**, and the easier it is for the user to actuate the button. In contrast, individuals with smaller, weaker hands will have a point of force application on the button assembly **16** closer to the fulcrum **14** and will be required to apply more force relative to larger-handed individuals. The mechanics of this arrangement opposes the strength-related mechanics related to human stature and hand size. The difference in this force is significant and there is often an order of magnitude difference between the forces applied to the external surface the button assembly **16** nearest the fulcrum **14** and the external surface of the button assembly furthest away from the fulcrum to actuate the underlying electronic switch.

[**0021**] For example, the actuation force required to actuate a conventional mouse button was measured as a function of distance along the button. The button is 3.1 cm wide and 3.5 cm long (palm-finger direction). The measured forces (Newtons) versus distance (cm from the finger end) are provided in Table 1.

TABLE 1

Distance (cm)	Force (N)
0.5	1.0
1.0	0.8
1.5	0.65
2.0	0.55
2.5	0.5
3.0	0.45

[**0022**] **FIG. 2** is a simplified representation of a reverse cantilever button assembly **26** and electronic switch **12** assembled into a housing **19'** of a pointing device according to an embodiment of the present invention. Alternatively, the button assembly could be molded with the housing, rather than being attached to it by gluing, heat welding, mechanical fastening, or similar techniques. The reverse cantilever button assembly has a first fulcrum **28** at the point where the button assembly is attached to the device housing **19'** or body and a second fulcrum **32** at the end of spring beam **30**. The spring beam is a cantilevered beam, as is the button portion **36**, which is attached to the spring beam through the second fulcrum. The button portion includes the external surface **37** of the button assembly, which is configured to be contacted by the finger, thumb, foot, or other portion of the user and will be referred to as the "switch button" for purposes of illustration. In this embodiment essentially the entire portion of the second cantilevered beam has an exposed external surface, but in other embodiments a portion or portions of the second cantilevered beam might not be exposed.

[**0023**] The second fulcrum can be implemented as a molded plastic flexible hinge or have a plurality of implementations using other materials. The button plunger **20'** extends through a hole **40** in the spring beam **30** to actuate the electronic switch **12** when the switch button **22** is depressed. Extending the plunger through the spring beam provides a simple and compact configuration. Alternatively, the button plunger can be offset to either side of the spring beam, rather than extending through a hole in the beam. In either configuration, the movable switch element **22** is actuated with force from the finger to the external surface (finger portion) of the button assembly **38**, and not the underlying spring beam **30**.

[**0024**] The force applied by the finger to the external surface of the button assembly **38** to actuate the electronic switch button **22** can be the same or increase moving from the first fulcrum **28** to the second fulcrum **32**, depending on the ratio of the spring constants between the two fulcrums. In one embodiment, the spring constant of the first fulcrum **28** can be higher than the spring constant of the second fulcrum **32** to achieve an increasing force profile when the force is applied to the external surface of the button assembly **26** moving from the first fulcrum **28** to the second fulcrum **32**. In another embodiment, the spring constant of the first fulcrum **28** can be lower than the spring constant of the second fulcrum **32** to achieve an decreasing force profile when the force is applied to the external surface of the button assembly **38** moving from the first fulcrum **28** to the second fulcrum **32**. In yet another embodiment, the spring constant of the first fulcrum **28** can designed to be a proportion of the second fulcrum **32** to achieve an essentially constant force profile across the external surface of the button assembly **38** when moving from the first fulcrum **28** to the second fulcrum **32**. These embodiments can be achieved by molding the button assemblies from a plastic material, such as acrylonitrile butadiene styrene ("ABS") or other plastic, with the button assembly typically snapped or glued into place within the housing of the device. ABS plastic is particularly desirable because of its strength, resiliency, ease of fastening to the housing, and molding properties. The spring constants can be selected according to the thickness and length of the hinge/fulcrum section for a particular material, with a thinner section producing a lower spring constant.

[**0025**] Thus, the present invention enables a selective force profile for a button assembly from an increasing force profile, an essentially constant force profile, or a decreasing force profile moving along the external surface of the button assembly **38** from first fulcrum **28** to the second fulcrum **32**. In a constant force profile implementation, a 3.1 cm wide by 3.5 cm long (palm to finger direction) button assembly has an electronic switch with an actuation force of 0.60 N. The finger force needed to activate ("click") the button is 0.6 N along the centerline of the button from the first fulcrum to the second fulcrum with a force variation of about ±0.15 N or less, and a force variation along the transverse direction of about ±0.15 N.