

John J. Greenough.

*Impt. in Apparatus for
Cleaning and Grooming Animals.*

Patented Aug. 29, 1871.

No. 118,449.

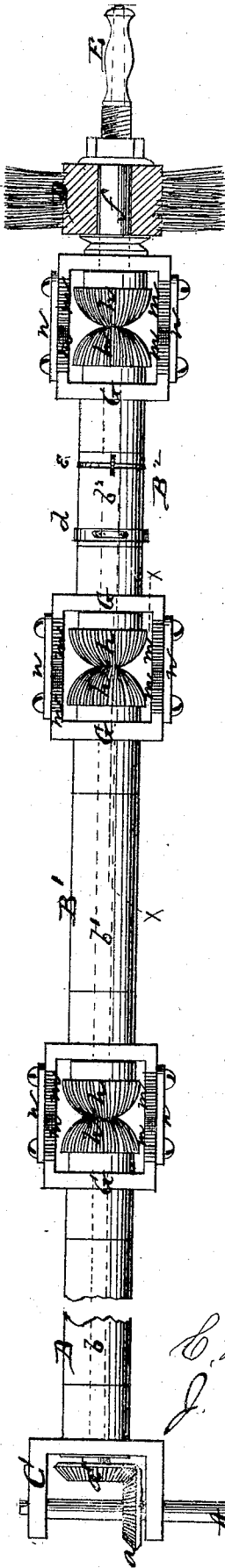


Fig. 1.

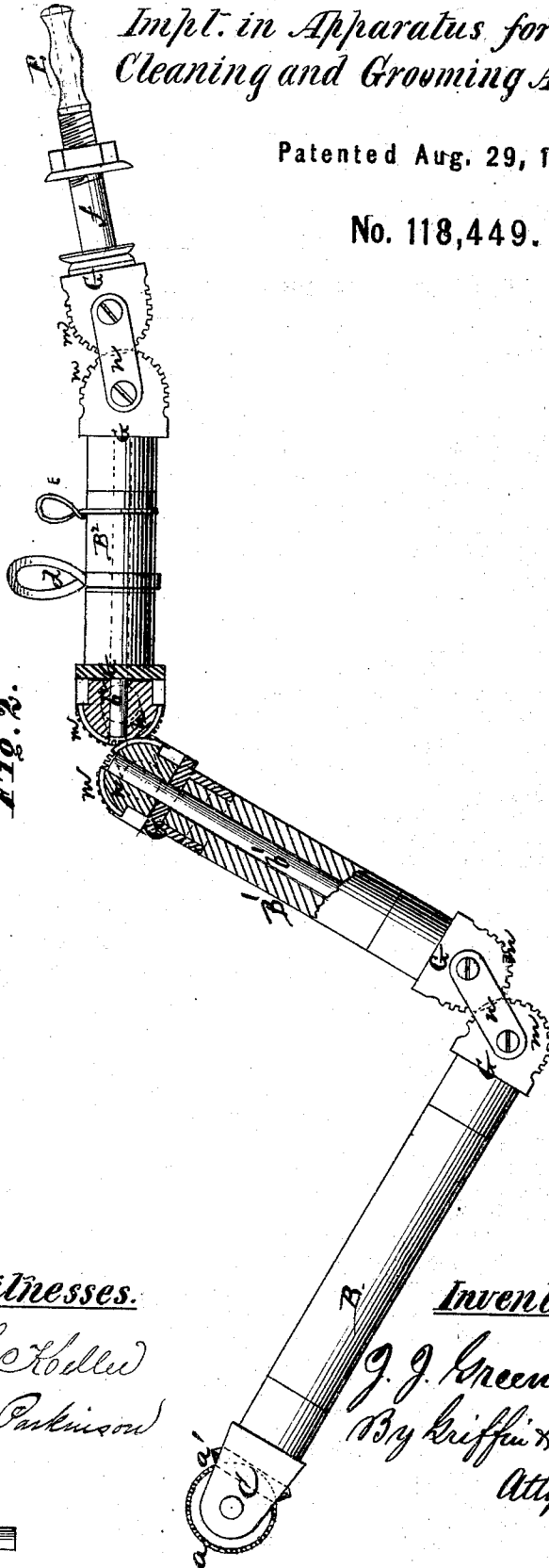


Fig. 2.

Witnesses.

*C. H. Keller
J. E. Parkinson*

Inventor.

*J. J. Greenough,
By Griffin & Manton,
Attys.*

UNITED STATES PATENT OFFICE.

JOHN JAMES GREENOUGH, OF SYRACUSE, NEW YORK.

IMPROVEMENT IN APPARATUS FOR GROOMING HORSES.

Specification forming part of Letters Patent No. 118,449, dated August 29, 1871.

To all whom it may concern:

Be it known that I, JOHN JAMES GREENOUGH, of Syracuse, in the county of Onondaga and State of New York, have invented certain new and useful Improvements in Apparatus for Cleaning and Grooming Animals; and do hereby declare the following to be a full, clear, and exact description thereof, reference being had to the accompanying drawing and to the letters of reference marked thereon.

The object of my invention is to aid and reduce the manual labor required to properly clean or groom animals; and it consists in the construction and arrangement of a jointed flexible driving-arm, of any sufficient length and number of joints, with a cylindrical revolving brush, sponge, or other suitable grooming-tool, driven by any desired or convenient motive power, as will be hereinafter more fully set forth.

In order to enable others skilled in the art to which my invention appertains to make and use the same, I will now proceed to describe its construction and operation, referring to the annexed drawing which forms a part of this specification, and in which—

Figure 1 is a plan view of my apparatus, showing the same in a straight line; and Fig. 2 is a side view of the same, showing it bent and a portion in section, through line *x x*, Fig. 1.

A represents a revolving shaft, having its bearings in any convenient fixture, and connecting with the driving power, which gives to it a rapid revolution. On this shaft A is a miter-wheel, *a*, that gears into another similar wheel, *a'*, located at right angles to the former. The shaft *b*, upon which the miter-wheel *a'* is placed, is supported in journal-boxes in the first joint B of the arm that envelops said shaft. This first joint B of the arm may be of any desired length, according to the reach desired, and the end thereof nearest the miter-wheel *a'* is affixed to a frame, C, by swivel or otherwise, through which frame the shaft A passes and forms the center, upon which said joint turns, while the frame C keeps the miter-wheels *a a'* in gear. The opposite end of the joint B is connected with a second joint, B¹, holding in like manner another shaft, *b*¹, which is connected with the shaft *b*, by means that will be hereinafter described, in such a manner as to be freely revolved by it whether in line or at any angle thereto. Another joint, B², is, in like man-

ner, added to joint B¹ with a like shaft, *b*², coupled and revolving within it. And other joints may be added if found desirable, so as to make the jointed arm of any necessary length. The last joint of the series is provided with a ring or leather strap, *d*, projecting from its side near the junction with the preceding joint, through which the arm of the operator is put; and near the opposite end, at a proper distance from the ring *d*, a handle, *e*, is affixed, that is to be firmly grasped by the hand of the operator, by which he steadily holds and directs the apparatus. In some cases the joint itself may be formed into a handle, omitting or dispensing with the handle *e*. To the end of the last shaft *b*² is connected a short axis, *f*, bearing the working-tool D, which may be either a cylindrical brush, sponge, rubber, or other suitable device, and which can be readily changed by means of a nut and screw, as shown, or any other convenient device. The axis *f*, which revolves with the working-tool, may project far enough to have a handle, E, upon it, in which the said axis revolves while the handle is held in the other hand of the operator, who has thus full power and freedom to guide and direct the tool with both hands into any place or position within the range of the machine, readily passing it over every part of the animal. I may attach a shield to the handle for the purpose of directing the dust from the operator. The couplings used between the shafts of the various joints I denominate globe-gears, the teeth being formed on the surface of a segment, *h*, of a sphere, and the joints are adapted thereto so as to hold the gear in contact while the joints can be made to bend in any direction. This is accomplished by making the journal-boxes G G of the various shafts with two projections, *m m*, that extend out on opposite sides of the gears *h h*. These projections are semicircular in form, and have teeth cut on them, the pitch-line of which is the same as the pitch-line of the globe-gears *h h*. The two segments are held together by a link, *n*, as shown.

The journal-boxes G G may be affixed to the ends of the joints with swivel-joints, or permanently, as found necessary. The couplings between the joints may be covered with short flexible tubes, of any suitable material, which will allow perfect freedom of motion, and at the same time exclude all dirt, &c., and prevent the couplings from being clogged thereby. A coiled wire

may be used for keeping this covering off from the gear.

Having thus fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. The combination of the cleaning-tools with the jointed flexible driving-arm, constructed and arranged substantially as and for the purpose set forth.

2. The joint near the cleaning-tool, constructed with ring *d* and handle *e*, so that it may be attached

to the fore arm of the operator, substantially as described, and for the purpose set forth.

3. The jointed arm which incloses the driving-gear, provided with the globe-gears *h h*, journal-boxes *G G*, with semicircular cogged projections *m m* and links *n n*, constructed and arranged as herein shown and described.

JOHN JAMES GREENOUGH.

Witnesses:

F. JEWETT JOHNSON,
R. SMITH.