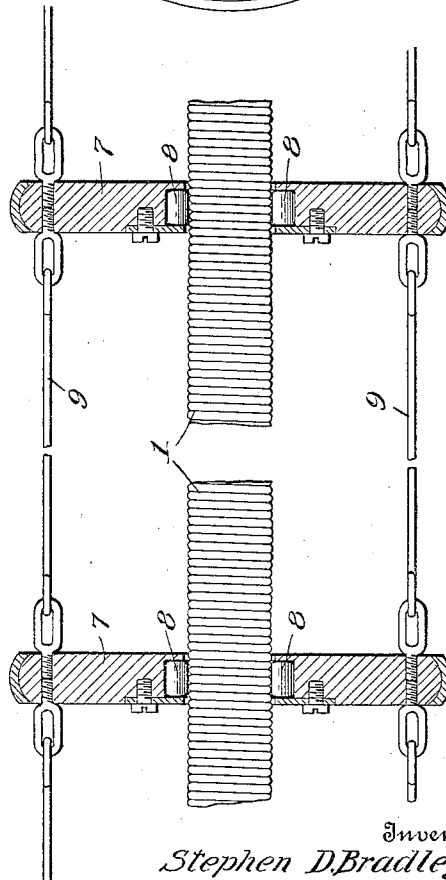
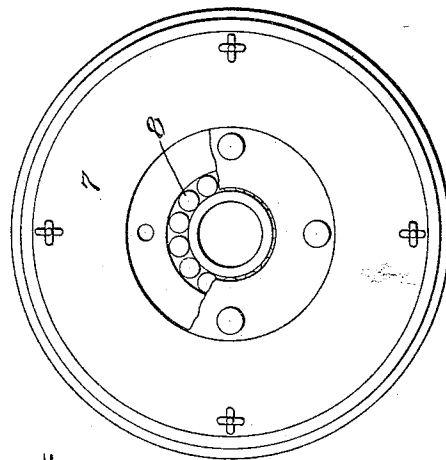
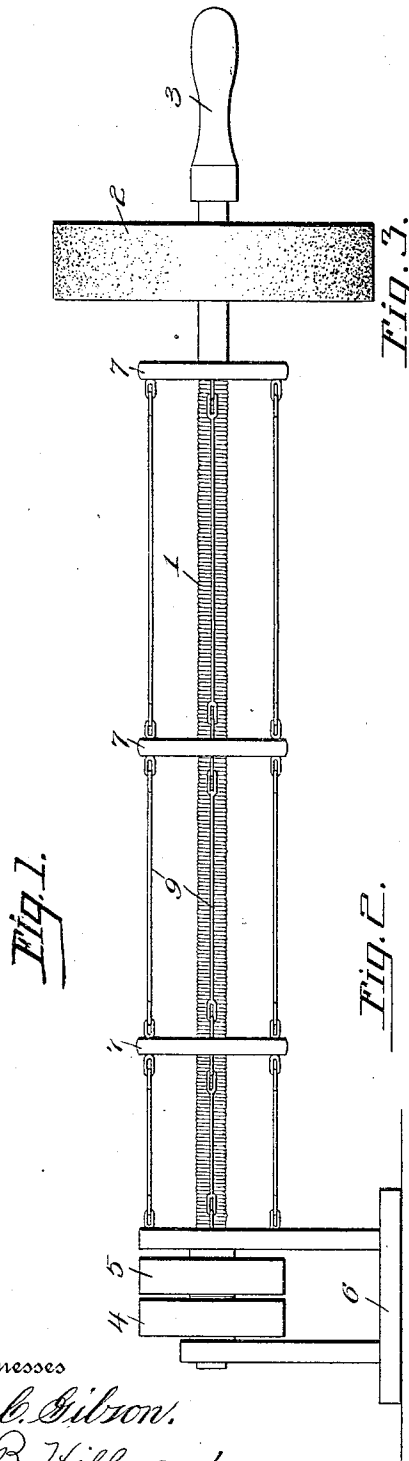


S. D. BRADLEY.
FLEXIBLE SHAFTING.

APPLICATION FILED AUG. 20, 1910.

1,042,760.

Patented Oct. 29, 1912.



Witnesses
F. L. Gilson.
U. B. Hillyard.

Inventor
Stephen D. Bradley.

By Victor J. Evans
Attorney

UNITED STATES PATENT OFFICE.

STEPHEN D. BRADLEY, OF SYRACUSE, NEW YORK.

FLEXIBLE SHAFTING.

1,042,760.

Specification of Letters Patent.

Patented Oct. 29, 1912.

Application filed August 20, 1910. Serial No. 578,101.

To all whom it may concern:

Be it known that I, STEPHEN D. BRADLEY, a citizen of the United States, residing at Syracuse, in the county of Onondaga and State of New York, have invented new and useful Improvements in Flexible Shafting, of which the following is a specification.

The present invention relates to flexible shafting and more particularly to a guard therefor to prevent the shaft, when used to transmit power to surface finishing devices, from coming in contact with and marring the surface.

The invention provides a guard of novel construction mounted upon the flexible shaft and which is light, flexible to a limited extent, durable and effective for the purpose designed.

Referring to the drawing, forming a part of the specification,—Figure 1 is a side view of the device. Fig. 2 is a longitudinal section of a portion of the device, showing the parts on a larger scale. Fig. 3 is a side view of a bearing block or disk, parts being broken away.

Corresponding and like parts are referred to in the following description, and indicated in all the views of the drawing, by the same reference characters.

The device embodies a flexible shaft 1, which is adapted to have power applied thereto at one end, the opposite end portion being provided with an abrasive wheel 2 of suitable construction. A handle 3 is fitted to the end of the flexible shaft 1 provided with the abrasive wheel 2. Pulleys 4 and 5 are mounted upon the driving end of the shaft, one of the pulleys being secured to the shaft and the other pulley being loose thereon. A drive belt, not shown, is adapted to cooperate with the pulleys 4 and 5 for imparting rotary movement to the shaft 1. A stand 6 is adapted to be secured to a suitable support and in turn forms a mount for the inner end of the flexible shaft and the protecting means arranged thereon.

A protector incloses the flexible shaft to prevent contact of the same with the surface being finished, said protector possessing a degree of flexibility and at the same time serving to strengthen the flexible shaft and prevent the same coming in contact with the work or any part of the operator. The protector comprises a series of disks or bearing blocks 7, which are centrally apertured for the passage of the flexible shaft and which

have inner grooves or channels forming raceways for receiving anti-friction devices 8, such as rollers or balls, whereby a minimum amount of resistance is offered to the rotation of the shaft 1. A plurality of links 9 connect the disks or bearing blocks 7, and the ends of the links 9 are formed with eyes which are looped into corresponding eyes provided upon the part 7, said eyes resulting in a degree of play between the connections to admit of ample flexibility to the shaft and its protector so that the abrasive wheel 2 may be manipulated to effect the desired results. The links 9 consist of lengths of wire of proper gage and serve to properly space the disks or bearing blocks 7, and the links themselves may possess a degree of resiliency to admit of the flexing of the device as a whole. Any number of links may be provided between adjacent disks or bearing blocks 7, said links extending around the flexible shaft at points so as to properly connect the part 7.

The abrasive disk 2 may be of any construction, its outer portion being yieldable and provided with abrasive material, such as emery, sand, etc. When the device is in operation the shaft 1 is rotated by power applied to the tight pulley 5 or 4. The operator grasps the handle 3 and manipulates the same to move the abrasive wheel 2 over the surface to be finished. Injury to the surface thus finished is prevented by the casing surrounding the flexible shaft, which casing holds said flexible shaft away from the finished surface.

From the foregoing description, taken in connection with the accompanying drawing, the advantages of the construction and of the method of operation will be readily apparent to those skilled in the art to which the invention appertains, and while I have described the principle of operation of the invention, together with the device which I now consider to be the embodiment thereof, I desire to have it understood that the device shown is merely illustrative, and that such changes may be made when desired as are within the scope of the claim appended hereto.

Having thus described the invention what is claimed as new, is:—

In combination, a stand, a solid shaft journaled on the stand, a flexible shaft connected with said solid shaft, a plurality of bearing blocks having openings to receive the flexi-

ble shaft, said bearing blocks being formed with recesses near said openings, friction rollers disposed in said recesses and adapted to engage said flexible shaft, plates holding
5 said friction rollers in said recesses, said bearing blocks being spaced from each other, and links holding said bearing blocks in spaced relation and constituting with said bearing blocks a protecting frame for said
10 flexible shaft, said shaft carrying a pulley on its free end and said frame constituted by said links and said bearing blocks being held to the stand against rotation on said flexible shaft.

In testimony whereof I affix my signature 15 in presence of two witnesses.

STEPHEN D. BRADLEY.

Witnesses:

HATTIE JOSEPH,
BESSIE JOSEPH.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents, Washington, D. C."
