

(Model.)

E. D. & J. D. BENSON.

ANIMAL SHEARS.

No. 287,794.

Patented Nov. 6, 1883.

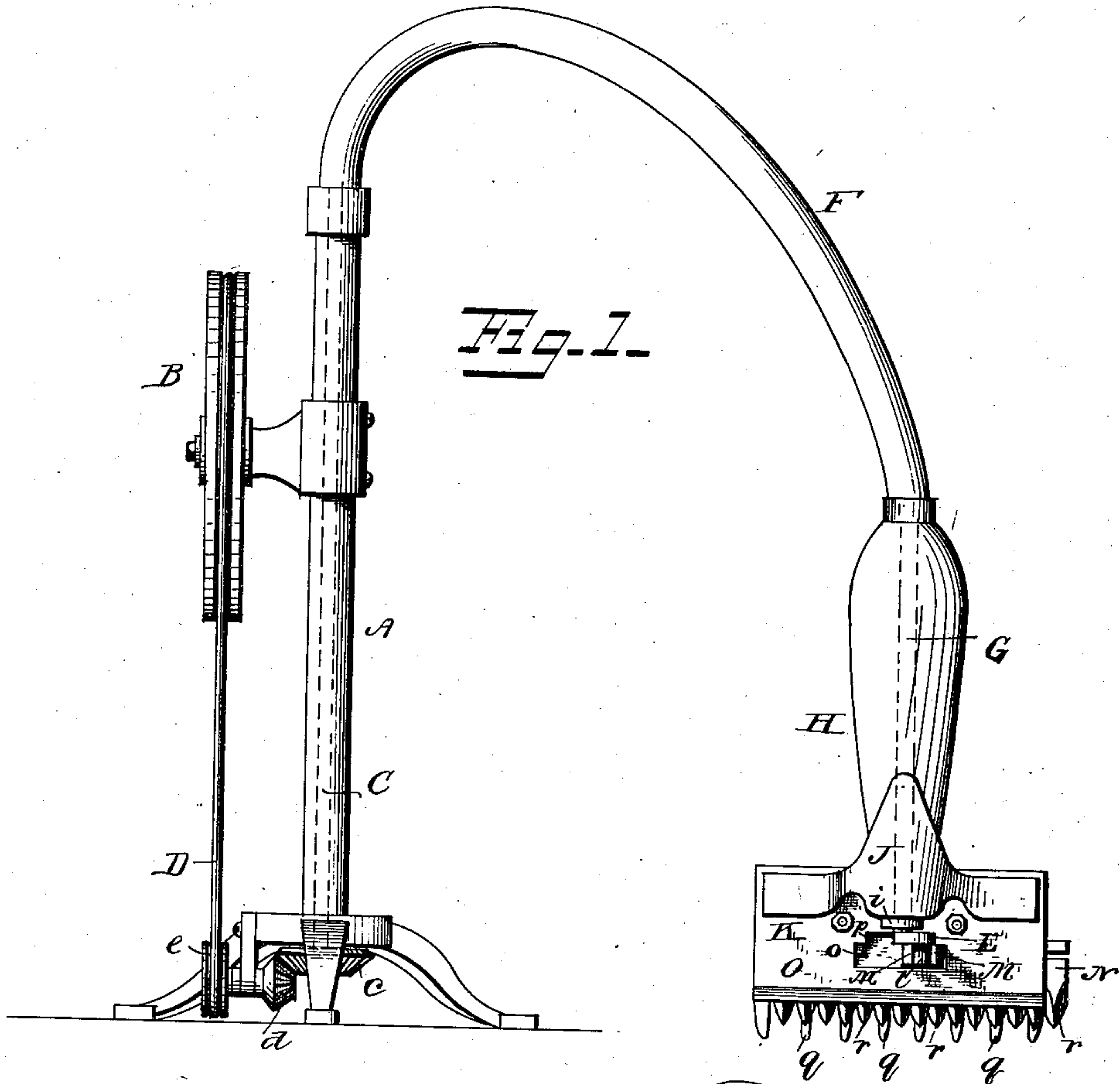


Fig. 2.

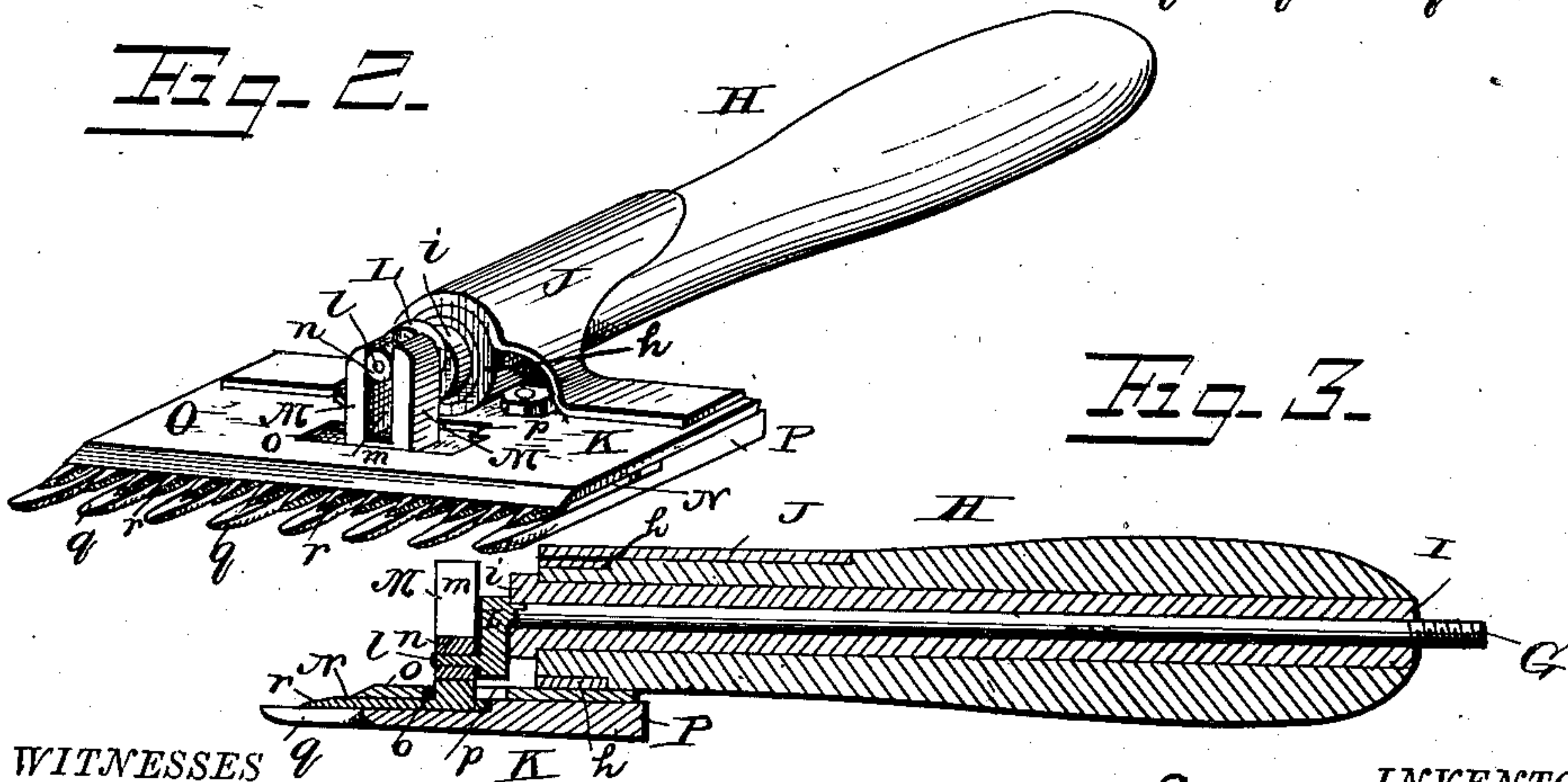


Fig. 3.

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EZRA D. BENSON AND JAMES D. BENSON, OF CRANBERRY, WEST VIRGINIA.

ANIMAL-SHEARS.

SPECIFICATION forming part of Letters Patent No. 287,794, dated November 6, 1883.

Application filed June 28, 1883. (Model.)

To all whom it may concern:

Be it known that we, EZRA D. BENSON and JAMES D. BENSON, citizens of the United States, residing at Cranberry, in the county of Preston and State of West Virginia, have invented a new and useful Animal-Shears, of which the following is a specification, reference being had to the accompanying drawings.

This invention relates to animal shears; and it has for its object to provide means whereby the shearing of sheep, especially, may be accomplished with ease and rapidity without injuring the animal in any way.

To attain the aforesaid object, our invention consists in certain details of construction and combination of parts, as hereinafter fully set forth, and particularly pointed out in the claim.

In the accompanying drawings, Figure 1 is a side view of our improved shearing-machine. Fig. 2 is a detail perspective view of the cutting-instrument. Fig. 3 is a longitudinal section of the same.

Like letters refer to corresponding parts in all the figures.

Referring to the drawings, A designates a suitably-supported standard carrying a driving-wheel, B, which is driven by any suitable power. The standard incloses a shaft, C, having at its lower end a bevel-wheel, *c*, which meshes with a similar bevel-wheel, *d*, supported at the lower end of the standard. A belt, D, connects the driving-wheel with a pulley, *e*, on the end of wheel *d*, thereby imparting motion to the same, which transmits motion to the shaft C. It will be obvious that a pitman may connect the wheels B and *d* and serve the necessary functions.

To the shaft C a flexible shaft, F, is attached. Said flexible shaft may be constructed in any suitable manner, and for this reason we do not show any special construction. The other end of the flexible shaft is attached to a rod, G, passing through the handle or hand-piece H of our improved shearing device. Said handle is provided with a tube, I, secured centrally in the same, and in which the rod G freely works, the outer end of said tube being extended, as at *i*. The outer end of the handle has a ferrule, *h*, secured thereon, and over said ferrule a curved metallic bracket, J, is

placed, and is secured to the top of the cutting-frame K, thereby connecting the handle and cutting-frame together.

L designates a cam secured on the end of rod G, and provided with a cylindrical pin or stud, *l*, working in a space, *m*, between two uprights, M, erected upon the upper cutting-plate, N, of the shearing device. A circular band or roller, *n*, fits over the same *l*, and revolves with the stud, serving not only to take what little friction caused by the operation of the roller G, but it also enables a rapid movement of the roller without getting out of order. The cam works, or rather revolves, in a circular path between the uprights M and the extended end *i* of tube I.

A slot, *o*, is cut out of the top plate, O, of the cutting-frame to permit the passage, laterally, of the uprights M, and another, but smaller slot, *p*, is cut out back of the slot *o*, to allow the free movement of the cam as it reaches the lower portion of its revolution.

The cutting-frame consists of a lower plate, P, formed with projecting guards or fingers *q*, triangular in cross-section, the lower surface of the fingers being rounded in an upward direction near the points, while the points are also rounded.

Between the upper plate O and the bottom plate P is placed the upper cutting-plate, N. The plates O and P are connected together at their rear ends, and leave a space at their front ends, in which space the upper cutting-plate N works laterally, said plate N not being fastened between the plates O and P, but simply held in place by the uprights M. As shown, the plate N is formed with teeth or cutters *r*, having a flat under surface fitting upon the upper surface of fingers *q*. As seen, the two flat faces fit together, so that a great rapidity of movement will not interfere with the proper working of the cutters, while the edges of the two flat surfaces, both the cutters and fingers, are sharpened for the purpose of acting in conjunction when the machine is in use.

The operation of our invention can be readily understood from the foregoing description, taken in connection with the annexed drawings. The flexibility of shaft F permits the free movement of the cutting-instrument over

the body of the animal. As the drive-wheel is operated a rotary movement is imparted to the shaft C, which transmits the rotary motion to the flexible shaft F, then to the rod G. As the latter rotates, the cam on the end of said rod revolves in a circular path, causing the stud *l* to descend on one side in the space between the uprights and ascend on the other side. This alternate rising and falling of the stud slides the uprights from one side to the other. It will be seen that the stud *l* projects from the cam opposite from its connection with the rod G. The sliding of the uprights carries with it the cutting-plate N, and this operation can be repeated at a very rapid rate of speed, causing the cutting-plate to move correspondingly. When the cam is going at a very rapid rate, the roller on the stud will be found to assist the rapid movement, since it revolves with the stud.

In place of imparting motion to the flexible shaft by means of the shaft C, connection E, bevel-wheels *c d*, and belt D, we may do away with the wheels *c d*, and simply connect the end of rod G by a belt with the driving-wheel. By means of this connection the rod will be operated and the machine set in motion; but for all practical purposes we prefer the construction shown, although we do not wish to be limited to the exact means shown for operating the cutting-instrument.

The upper surface and the fingers *q* of the plate P may be concaved, and the cutting-plate N and top plate O may be formed to fit in this concaved surface. By this construction the middle portion of the cutting-frame will be depressed, while the ends will be slightly elevated, and this construction may prove very desirable for shearing sheep especially. The ends of the cutting-frame may also be slightly rounded, since it is obvious that this form will not prove so injurious to the sides of the sheep as square ends.

It will be apparent that our device, although specially applicable for shearing sheep, is also adapted for shearing horses and other animals, and it is obvious that various modifications may be made without departing from the spirit or scope of our invention.

The device is simple and efficient, while it is not expensive, considering the vast amount of wool saved, and all danger of injuring the animals being obviated.

Having thus described our invention, we claim—

In a shearing apparatus, the cutting-frame consisting of the lower plate, N, formed with projecting guards or fingers, the top plate, O, connected to the bottom plate at the rear, and the cutting-plate formed with uprights M, projecting upwardly from the same through a slot in the top plate, said cutting-plate working between the two plates N O, in a recess cut from the bottom plate, in combination with the handle H, secured to the cutting-frame by a bracket-plate, J, a tube, I, secured centrally in the handle, and being extended, as at *i*, a rod, G, working in the tube, and formed with a cam at the outer end, a cylindrical stud on said cam carrying a band or roller, *n*, and means for operating the rod G, whereby the band works between the uprights M, and the cam revolves in a circular path between the uprights and the extended end *i* of tube I, all arranged and operating for the purposes set forth.

In testimony that we claim the foregoing as our own we have hereto affixed our signatures in presence of two witnesses.

EZRA D. BENSON.
JAMES D. BENSON.

Witnesses:

SCOTT T. JONES,
S. B. LEE.