P. L. Slayton.

Braiding Whip-Lashes.

No. 73131 Patented Jan. 7, 1868.

Fig. 1.

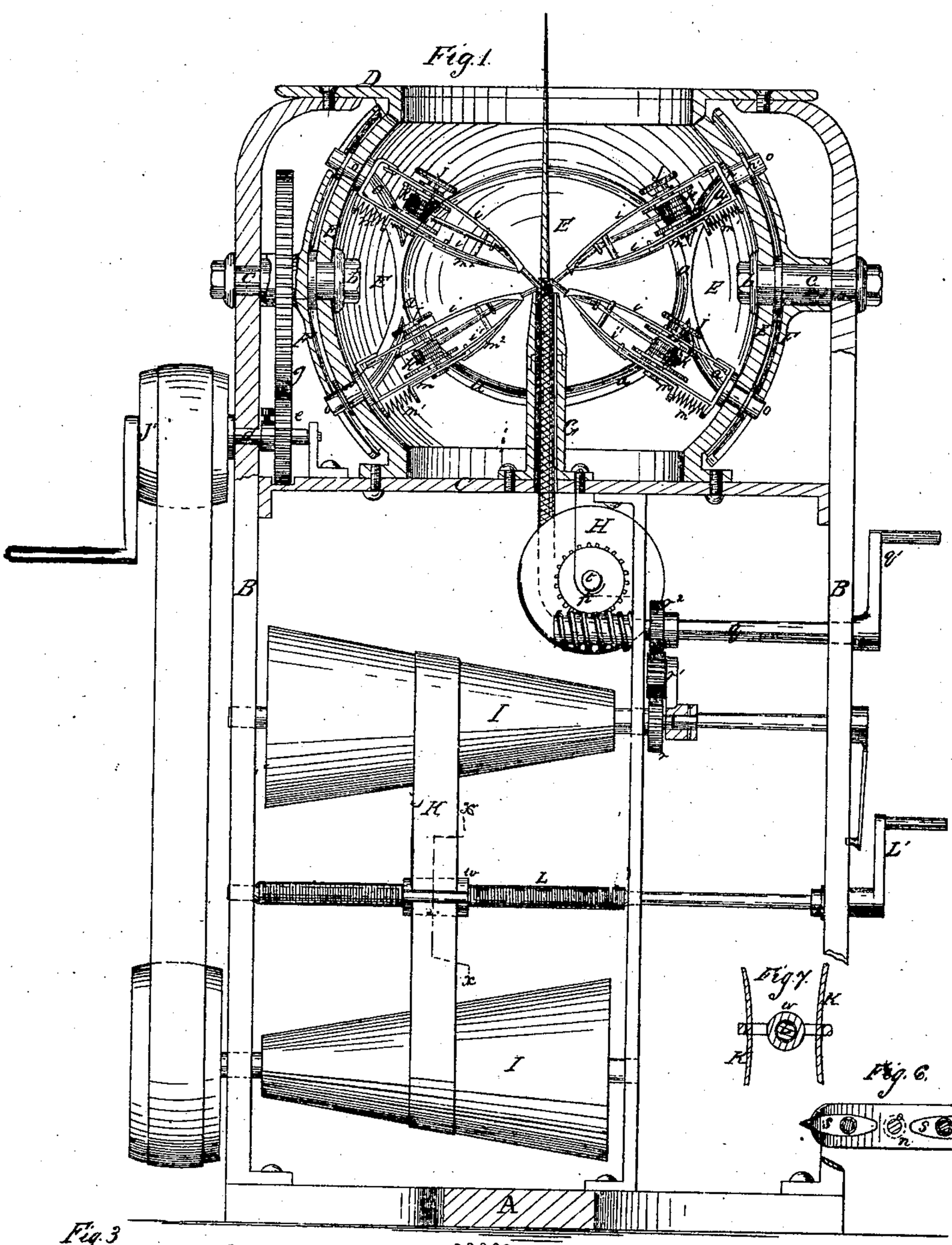


Fig. 7.

Fig. 6.

Fig. 3

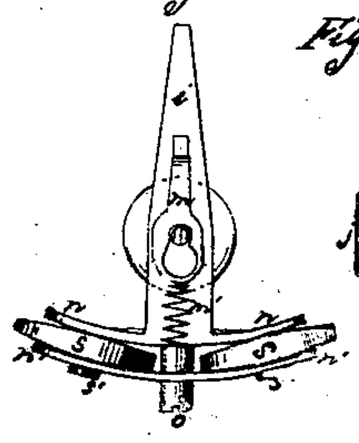


Fig. 4

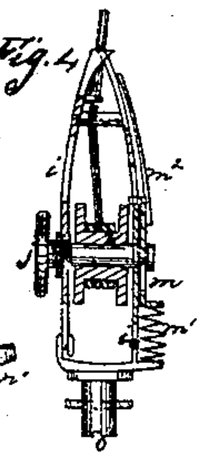


Fig. 2

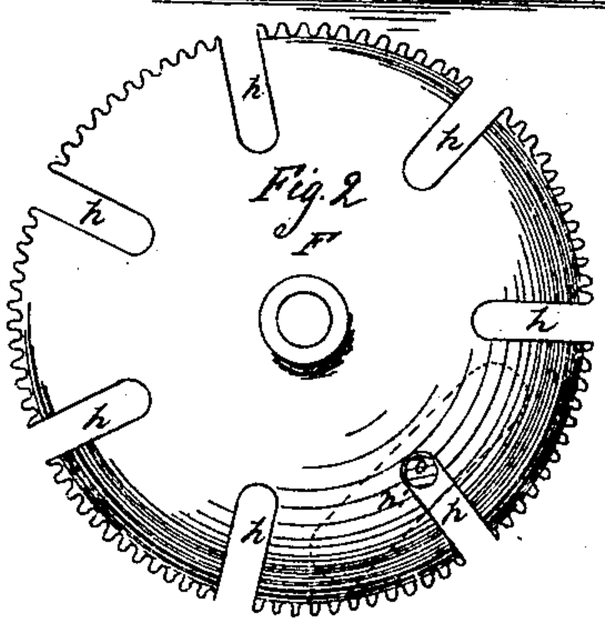
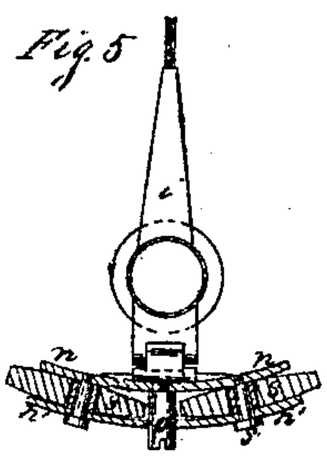


Fig. 5



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PHINEAS L. SLAYTON, OF NEW YORK, N. Y., ASSIGNOR TO HIMSELF AND ALMET REED, OF SAME PLACE.

Letters Patent No. 73,131, *dated January* 7, 1868.

IMPROVEMENT IN MACHINE FOR BRAIDING WHIP-LASHES.

The Schedule referred to in these Letters Patent and making part of the same.

TO ALL WHOM IT MAY CONCERN:

Be it known that I, PHINEAS L. SLAYTON, of the city, county, and State of New York, have invented a new and useful Improvement in Machine for Braiding Whip-Lashes; and I do hereby declare that the following is a full, clear, and exact description thereof, which will enable those skilled in the art to make and use the same, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 represents a vertical sectional view through the centre of the machine.

Figures 2, 3, 4, 5, 6, 7, represent details of different parts.

Similar letters of reference indicate corresponding parts.

This invention relates to an improved machine for braiding whip-lashes of any required number of strands, and it consists in a stationary hollow sphere, open at top and bottom, and supported between top and bottom plates by standards, which hollow sphere is cut up into segmental pieces or sections with channels or open passages between them, to serve as guide-ways for a series of fingers that are moved around to lay the strands by means of segments of an external sphere or shell, which revolve on their own independent axes on opposite sides of the internal sphere in pairs opposite to each other, as hereinafter more particularly described.

The frame of the machine is formed of a bed-plate, A, having four standards, B, at the corners of a square. A middle plate, C, and top plate D, are secured to the standards B, and between these plates C D is fixed a hollow sphere, open at top and bottom, the shell of which is divided into four equal oval-shaped sections E, having horizontal major axes, the ends of which are pointed. Between the oval sections E and the outer portions of the shell of the hollow sphere are narrow passages or guide-ways *a a*, intersecting each other at the points of the ovals, so as to form two continuous undulating channels around the hollow sphere. The sections E are firmly secured by the nuts *b* to short radial studs *c*, that are made fast to the standards B. The studs *c* serve as axes for four circular disks F, fig. 2, or segments of an external spherical shell, lying nearly upon the oval sections E. The circular disks F have toothed peripheries gearing into each other, and they revolve simultaneously by means of a driving-shaft, *d*, on which is the pinion *e*, engaging the spur-wheel *g*, hung on the axis of one of the disks F. A certain number of radial slots, *h*, is made in the segments F, which act as guide-ways, while the segments carry the braiding-fingers, which fingers consist each of two long steel spring-plates *i i'*, the points or ends of which are clamped together by a set-screw, *j*, for the purpose of holding the strands of a whip-lash sufficiently tight to be drawn into the braid. Between the plates *i i'* a spool, *k*, sets loosely upon the set-screw *j*, to carry the strands to be braided to form a whip-lash. The upper end of the set-screw *j* only is threaded just enough to take in the plate *i*, and set the tension of the strand, and the lower or outer end projects through the opposite plate *i'*, and has a groove turned in it which holds a small slide, *m*, attached to a spiral spring, m^1, to keep it in place. The upper end of the silde *m* projects through a slot in the plate *i'*, and is held in it by an outside spring, m^2. This device is provided for introducing and removing the spool *k*, and winding the strand of leather upon it, and to secure a nice adjustment of the parts. The plates *i i'* forming the fingers to guide the strands, are attached at their base to a curved plate, *n*, fitted on the inside of the section E, which plate is connected by a pin, *o*, with a curved plate, *n'*, fitted on the outside of the section E. Between the plates *n n'*, on each side of the pin *o*, pointed guide-blocks, *s s*, are hung loosely on pivots *s' s'*, fig. 5, which oscillating guide-blocks are placed in the passages or guide-ways *a a*, between the sections E and the other portions of the shell of the interior hollow sphere, while the head of the pin *o* is placed in the radial slots *h* in the disks F, passing also through the channels *a a*. The fingers all point inward, and nearly approach with their clamping-ends to the centre of the hollow sphere, at the upper end and mouth of a conical tube, G, fixed vertically on the plate C, through which tube the whip-lash passes when braided, as shown in fig. 1. The lash when braided passes down through the tube G, and winds around a spool, H, set upon a spindle, *t*, that carries a worm-wheel, *p*, working in a screw on a horizontal shaft, *q*, of a crank, *q'*.

When a lash is to be braided, the strands attached to a core or cord that is fastened on the spool H, are passed through the conical tube G, and wound around the spools *k* in the fingers. The pinion *e* being thrown into gear, the disks F revolve and carry the fingers to the right and left as the pins *o* and the guide-blocks *s* traverse the channels *a a* around the sections E, and thus lap and plait the strands one over the other in suc-

cession, without twisting, to form a braid which passes, as fast as it is made, down through the tube G to wind upon the spool H. The feed-motion is governed by two cone-pulleys I I, hung below in the frame, and belted to a pulley, J, on the shaft *d*, and also connected with the winding-spool H by adjustable gear-wheels $r\ r^1\ r^2$. The belt *k* on the cone-pulleys is adjusted by a nut, *w*, working on a screw, L, turned by a crank, L′.

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

1. The circular disks F, with slots *h* gearing into each other to carry the braiding-fingers herein described, constructed, arranged, and operating as set forth.

2. The braiding-fingers herein described, travelling in guide-ways *a a*, with their ends pointing inward, and approaching near to the centre of the hollow sphere herein described, all constructed, arranged, and operating substantially as and for the purpose set forth.

3. The oscillating guide-blocks *s s*, the curved plates *n n′*, and the pin *o*, in combination with the plates *i i″*, constructed, arranged, and operating substantially as described.

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