(No Model.)

W. E. BROCKETT.

STUFFING BOX.

No. 400,543. Patented Apr. 2, 1889.

Fig: 1.

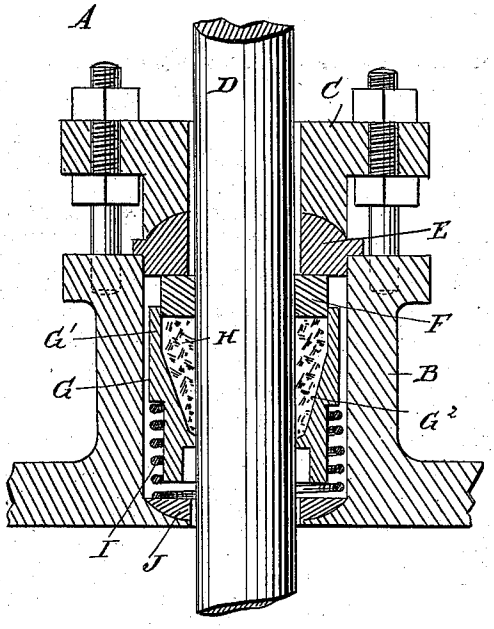


Fig: 4.

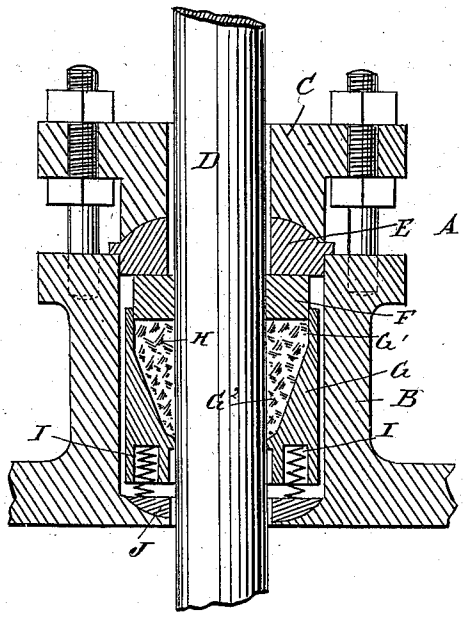


Fig: 2

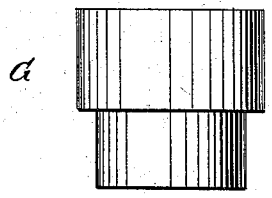


Fig: 7.

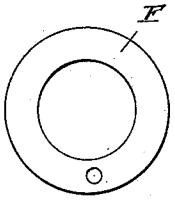


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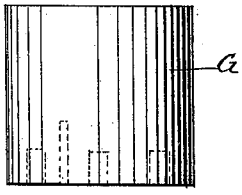


Fig: 3.

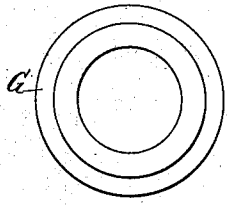


Fig: 8.

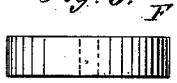


Fig: 9

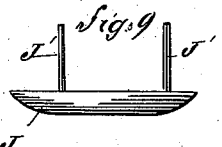


Fig: 6

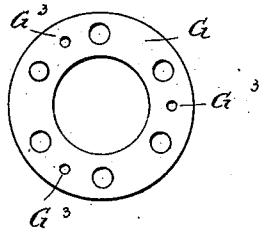
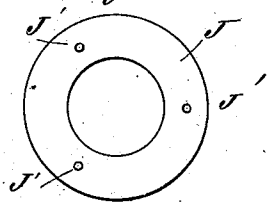


Fig: 10.



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UNITED STATES PATENT OFFICE.

WILLIAM ELLSWORTH BROCKETT, OF BERLIN, WISCONSIN.

STUFFING-BOX.

SPECIFICATION forming part of Letters Patent No. 400,543, dated April 2, 1889.

Application filed June 9, 1888. Serial No. 276,588. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM ELLSWORTH BROCKETT, of Berlin, county of Green Lake, and State of Wisconsin, have invented a new and Improved Stuffing-Box, of which the following is a full, clear, and exact description.

The object of the invention is to provide a new and improved stuffing-box which is simple and durable in construction and permits a vibrating motion of the stem or rod passing through the stuffing-box.

The invention consists of certain parts and details and combinations of the same, as will be fully described hereinafter, and then pointed out in the claims.

Reference is to be had to the accompanying drawings, forming a part of this specification, in which similar letters of reference indicate corresponding parts in all the figures.

Figure 1 is a longitudinal sectional view of the improvement. Fig. 2 is an elevation of the casing. Fig. 3 is a plan of the same. Fig. 4 is a sectional view of a modified form of the improvement. Fig. 5 is an elevation of the casing of the same. Fig. 6 is an elevated plan of the same. Fig. 7 is a face view of the follower; Fig. 8, an elevation of the same. Fig. 9 is an elevation of the washer supporting the springs, and Fig. 10 is a face view of same.

The improved stuffing-box B is formed in the usual manner on the cylinder-head or steam-chest, and supporting on its outer end the gland C, through which passes loosely the piston-rod or valve-stem D. The inner end of the gland C is curved and fits on the correspondingly-shaped block E, resting on the follower F, fitting snugly on the valve-stem D, and held to slide in the cylindrical part G′ of the casing G, fitted loosely in the stuffing-box B. The cylindrical part G′ of the casing G continues into the cone-shaped opening G^2, filled with the packing H, against which presses the follower F. Against the inner end of the casing G presses a spring or springs, I, resting on a washer, J, held in the bottom or inner end of the stuffing-box.

For small engines I prefer the construction shown in Fig. 1, in which a single coil-spring, *l*, is employed; but I may also use for larger engines a number of smaller springs, as shown in Fig. 4, instead of the large spring I. The washer J may be provided with pins J′, fitting into corresponding apertures, G^3, at the inner end of the casing G, so as to guide the latter in order to hold the springs I in place. The central opening in the gland C and block E is larger than the diameter of the stem or rod D, so that the latter passes freely through the said parts. The washer J is similarly bored out; but the follower F and the inner end of the casing G fit snugly on the stem or rod D. The block E also fits into the open outer end of the stuffing-box B.

It will be seen that when the several parts are in place, as shown in Figs. 1 and 4, the packing prevents the escape of steam along the stem or piston-rod D, and as the casing G is mounted yieldingly on the spring or springs I it permits a vibrating motion of the said stem or rod D, thus preventing a breaking or bending of the said stem or parts of the stuffing-box. It will further be seen that all wear on the packing H is taken up by the spring or springs I, forcing the casing outward against the follower F, which is held in place by the block E and gland C. The steam which enters through the washer J into the interior of the offset cannot escape, as the block E fits into the open outer end of the stuffing-box B, and the follower F rests against the block E, thus cutting off the escape of steam through the enlarged opening in the block E and gland C. In case the spring or springs I break, the gland C is screwed up, so that the block E, pressing against the follower F, forces the casing G onto the washer J, thus forming a solid stuffing-box, the flange on the block E having been removed previously to permit the inward sliding motion of the said block in the stuffing-box B.

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

1. The combination, with the stuffing-box having a rounding bottom or inner end, of the washer rounded to fit said rounding bottom and to form a ball-joint therewith, and having an aperture through which rod D loosely passes, the spring-seated casing G, closely fitting said rod at its inner end, and having the conical packing-receiving opening, cylindrical at its outer end, as shown at G′, the follower F, snugly fitting the rod D and said cylindrical

part G′, the block E, through which the rod D loosely passes, and having a reduced portion on its lower or inner face snugly fitting the outer end of the stuffing-box, and a rounding outer or upper face, and the gland C, bolted to the stuffing-box and having a concave inner end fitting the rounding face of the block E, substantially as set forth.

2. The combination, with the stuffing-box having its bottom or inner end rounded, of the washer J, rounded on its lower face, provided with pins J′ on its upper face, and having a central aperture through which the rod D freely passes, the casing G, apertured at its lower end to snugly fit the rod, apertured on its lower face to receive said pins, and formed with the conical packing-receiving opening cylindrical at its upper end, the spiral springs I, the follower F, snugly fitting the rod D and said cylindrical part of the packing-opening, the block E, through which the rod D loosely passes, provided with a reduced portion on its lower face snugly fitting the outer open end of the stuffing-box, and having a rounding outer or upper face, and the gland bolted to the stuffing-box and having a conical inner end receiving the said rounding face, substantially as set forth.

WILLIAM ELLSWORTH BROCKETT.

Witnesses:
J. W. LAUGHLIN,
GEORGE OWENS.