GEORGE R. BABBITT.

Improvement in Piston Packing.

No. 123,971. Patented Feb. 27, 1872.

Fig 1

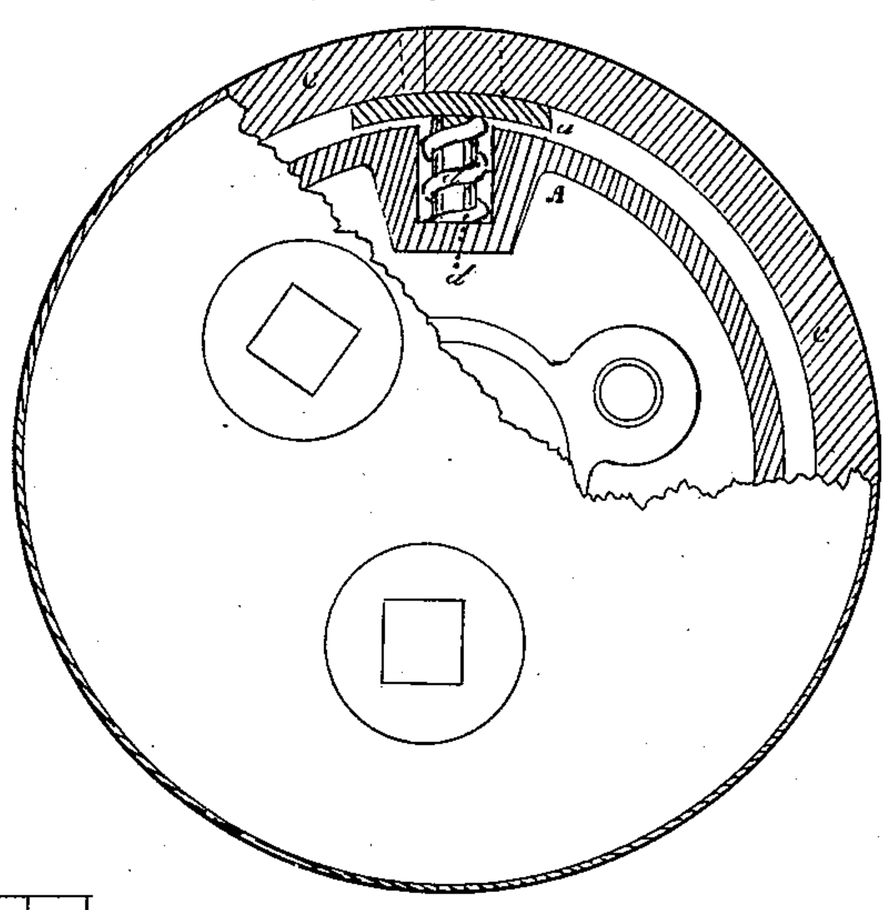
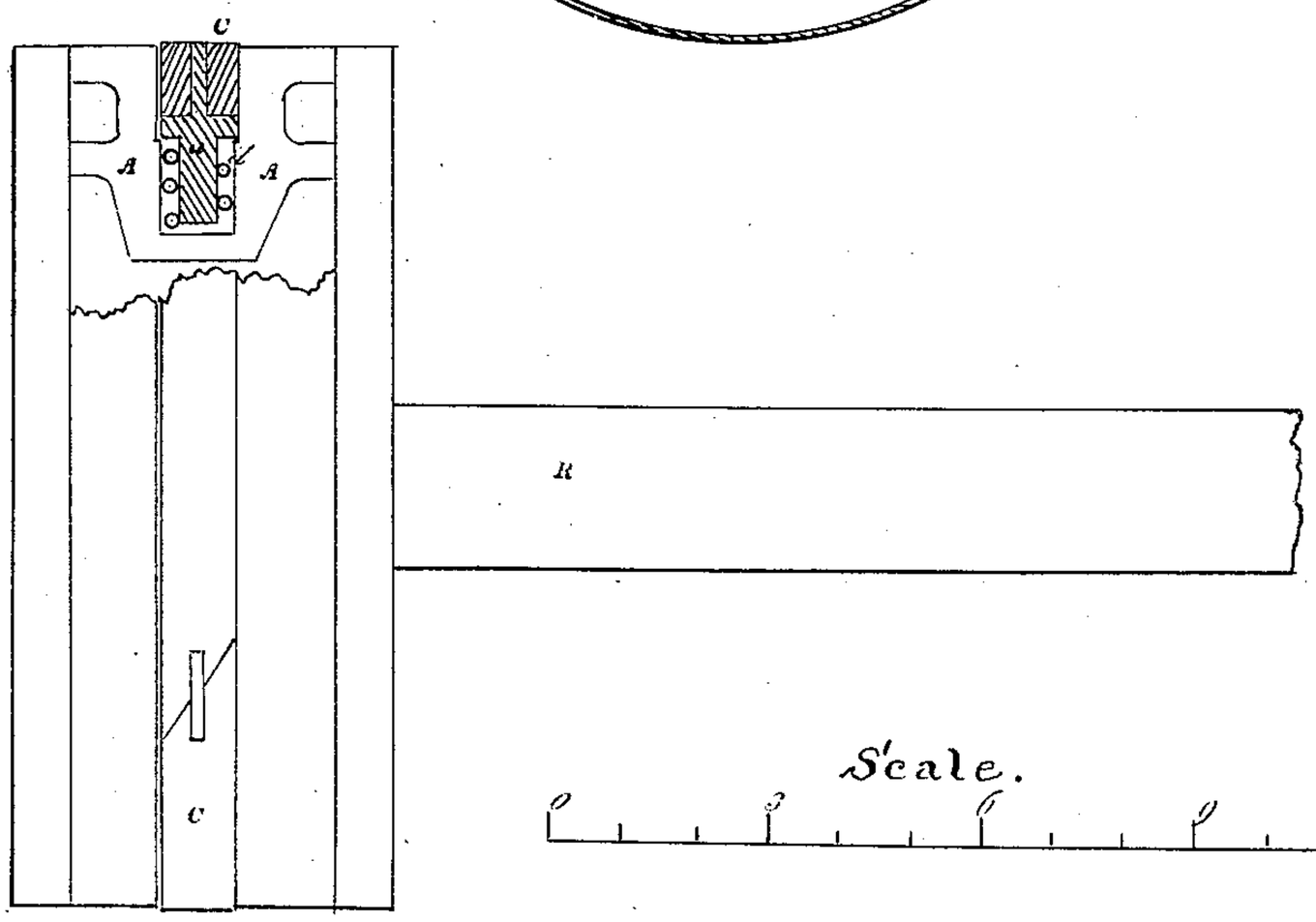


Fig 2



Scale.

0 3 6 9 1ft

Witnesses
James E. Arnold
Benjamin Arnold

Inventor
Geo R Babbitt
By attorney Benjamin Arnold

UNITED STATES PATENT OFFICE.

GEORGE R. BABBITT, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR OF ONE-HALF HIS RIGHT TO WILLIAM A. HARRIS, OF SAME PLACE.

IMPROVEMENT IN PISTON-PACKINGS.

Specification forming part of Letters Patent No. 123,971, dated February 27, 1872.

Specification describing an Improvement in Piston-Packing, invented by GEORGE R. BABBITT, of Providence, in the county of Providence and State of Rhode Island.

This invention consists in making the packing with a single ring instead of two, as is usually done, and in making this ring a little narrower than the groove in the piston-head in which it is placed, so that the steam may have access to the under side of the packing-ring, in combination with metallic springs to push the ring outward, as will be more fully hereinafter explained.

Figure 1 is an end view of the piston-head, a part of which is removed to show the packing-ring. Fig. 2 is a side view of the piston-head, a part of it being removed to show the same ring in section.

A is the inner block of the piston-head, which is fast on the rod R. C is the packing-ring, lying in a groove in the periphery of the block A, the ring C being made from one sixty-fourth to one-sixteenth of an inch narrower than the groove in which it is placed. The packing-ring is made preferably in sections, the ends of which are accurately fitted to each other, and a supporting-plate, *a*, having a tenon on its outer side, fits into a mortise in the ends of the sections, and a stem on its inner surface, on which is placed the spiral spring *d*, presses the ring out against the cylinder.

The operation is as follows: The steam, being admitted to one side of the piston-head, presses the packing-ring against the opposite side of the groove, making a tight joint there, and leaving an opening between the sides of the ring and groove on the pressure side, through which the steam passes in and under the ring, and balances the pressure of the steam on the outer face of the ring, leaving it free to be pressed out against the surface of the cylinder by the springs *d*. When the steam is admitted to the other side of the piston-head, the packing-ring is pressed over against the other side of the groove, making a tight joint there, same as it did on the first side, and leaving an opening for the steam to pass in and under the ring on that side. Thus with one ring acting in the manner of a valve, opening one side and closing against the other alternately, I am able to obtain a better result than was practicable with the two rings heretofore used, because those rings were fitted close in the grooves, and, to balance the pressure of the steam on their outer faces, had ports made up through the piston-head to allow the steam to enter under the rings; and as one set of ports would act only for one direction of the piston motion, it was necessary to have two rings, any two sets of ports or openings making a considerable increase in the cost of construction, and adding materially to the weight of the piston-head, which, in large horizontal engines or pumps, is a great objection.

I do not confine myself to any particular number of sections in which the rings may be made, as that may vary with the size of the cylinder; nor to the manner of making the joints of the sections; nor to any particular number of rings made as described with regard to their grooves, that they may be put in a piston-head; nor for use in steam alone; but for all kinds of pistons to which it can be applied.

I claim—

The improved piston or piston-head, with the vibratory ring and its groove, in combination with metallic springs, substantially as and for the purpose herein set forth.

Witnesses: GEO. R. BABBITT.

AMOS GARDINER,

WM. C. BROWN.