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W. G. HEGINBOTTOM.
METHOD OF FORMING PISTONS.
FILED JULY 15, 1920.

Fig. 1.

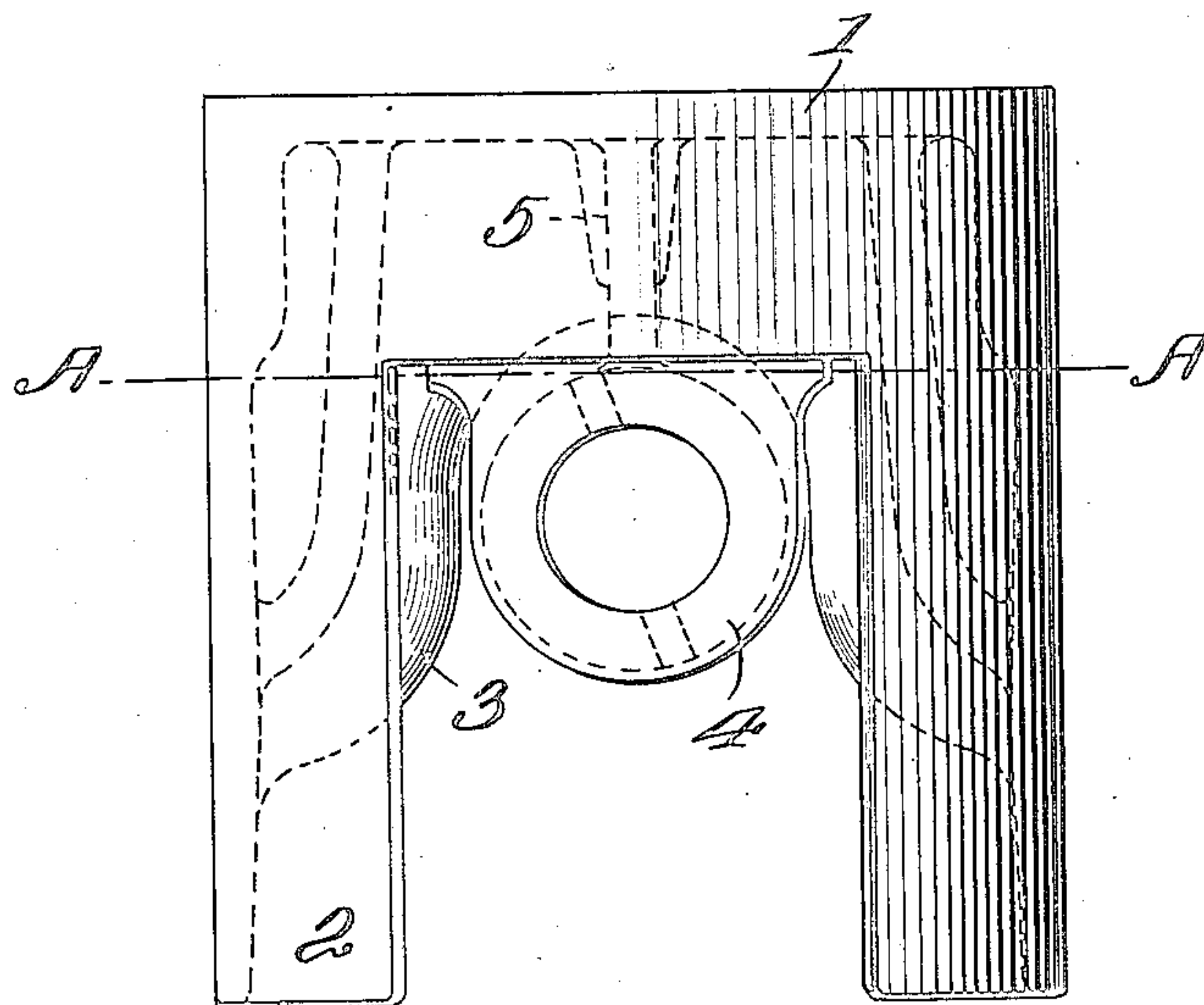
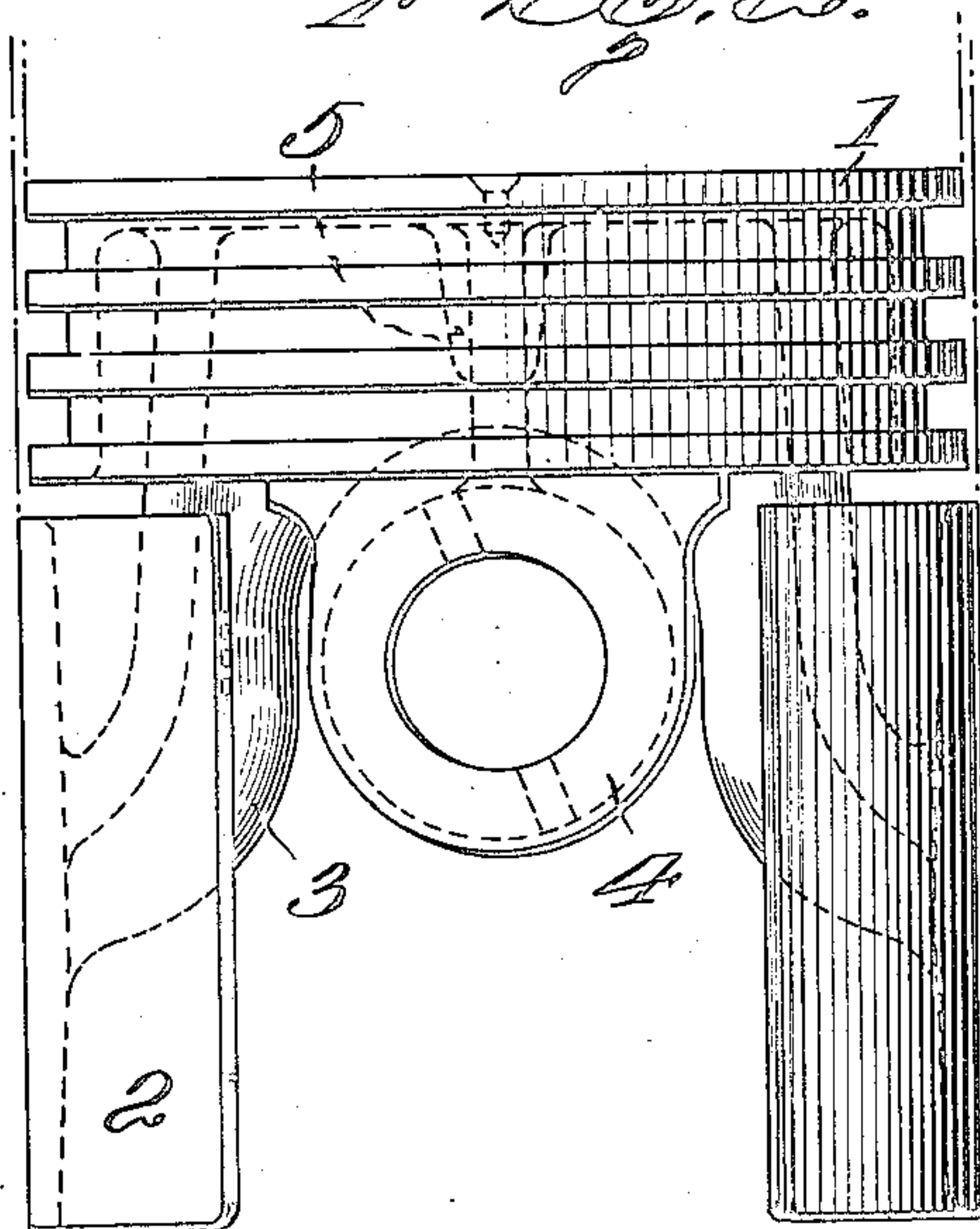


Fig. 2.



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METHOD OF FORMING PISTONS.

Application filed July 15, 1920. Serial No. 396,556.

To all whom it may concern:

Be it known that I, WALTER G. HEGINBOTTOM, a citizen of the United States, residing at Flint, in the county of Genesee and State of Michigan, have invented certain new and useful Improvements in Methods of Forming Pistons, of which the following is a specification, reference being had therein to the accompanying drawing.

This invention relates to a method of forming pistons constructed in accordance with the invention disclosed in my application for spring piston filed June 16, 1920, Serial No. 389,517, the object being to provide a method by means of which a piston can be formed very cheaply.

A further object of the invention is to provide a method of forming a spring piston wherein the piston is provided with guide portions connected to the disk shaped portion of the head in such a manner that the guide portions can expand and contract so as to fit the cylinder of the internal combustion engine in order to prevent piston slap.

Another and further object of the invention is to provide a method of forming the particular construction of piston wherein the piston composed of the head and guide members and wrist pin bosses are cast as a unit and the guide members separated from the head proper to produce the spring guide members in such a manner that the entire piston can be constructed out of aluminum and machined to the proper size without placing the material under excessive strain thereby producing a piston which will fit the cylinder to a nicety at a very small cost.

Other and further objects and advantages of the invention will be hereinafter set forth and the novel features thereof defined by the appended claims.

In the drawings,

Figure 1 is a side elevation of a piston showing the first step in the operation of forming the same; and

Figure 2 is a similar view showing the complete piston.

In carrying out my method of forming the piston as disclosed the same is preferably cast of aluminum and comprises a cup shaped head 1 having skirt portions 2 forming circular guide members which are connected to the disk portion of the head 1 by arms 3, the arms being connected to the

guide portions substantially mid-way their length and extending into the cup shape of the piston and connected at a point adjacent the outer edge thereof. The head of the piston is provided with wrist pin bosses 4 between the guide members 2 having supporting braces 5 and are so constructed as to retard the travel of heat from the head to the wrist pin bosses.

After the piston thus described has been formed by casting the same it is machined up over the entire surface, bringing the head portion with the ring grooves down to the finished size while the guide members are left over-size for the purpose of grinding. The guide members are then severed from the cup shaped head by cutting the same with a saw on the line A—A and the guide members are then ground to the proper size, which allows any strain of the metal to relieve itself and allows the two sections of the piston to finish in perfect alignment.

The detail construction of piston is fully disclosed in my companion application covering the piston construction and this application covers the method and consists in casting a piston with a cup shaped head and circular guide members connected to the disk of the head by arms and then severing the guide members from the cup shaped head in order to produce spring guide members.

From the foregoing description it will be seen that I have produced a method of forming a spring piston which consists in casting a piston with a cup shaped head having circular guide members connected thereto by arms and then machining the entire surface of the piston in order to produce a finished head with grooves for the piston ring and then severing the skirt or guide portions of the head and grinding the guide members which are carried by the arms to the proper size in order to produce spring guide members for allowing the same to expand and contract.

What I claim is:—

1. The method of forming a spring piston consisting in casting a cup shaped piston with guide members having a connection with the disk portion of the cup shaped piston and then severing the guide members from the wall of the cup shaped head.

2. The method of forming a piston which consists in casting a cup shaped piston with circular guide members extending from the

walls thereof having a connection with the disk shaped portion of the piston by arms, then machining the entire surface of the piston in order to produce a head with ring
5 grooves, then severing the guide members from the cup shaped piston and then grinding the guide members to the proper size.

3. The method of forming a spring piston consisting in casting a cup shaped piston out
10 of aluminum with guide members connected mid-way their length to the disk portion of the head by arms and then severing the guide members from the head proper.

4. The method of forming a spring piston which consists in casting a cup shaped
15 piston with circular skirt portions connected

to the disk shaped portion of the head by arms, then machining the entire surface of the piston to produce a head with ring guides of a diameter less than the diameter
20 of the guides, then severing the guides from the cup shaped portion of the piston head, and then grinding the guide members to the proper size.

In testimony whereof I have hereunto af-
25 fixed my signature in the presence of two witnesses.

WALTER G. HEGINBOTTOM.

Witnesses:

WILLIAM L. TYKKA,
GEO. TAFT.