

No. 646,632.

F. L. WHITE & J. SEMPLE.

Patented Apr. 3, 1900.

M. G. SEMPLE, Administratrix of J. SEMPLE, Dec'd.

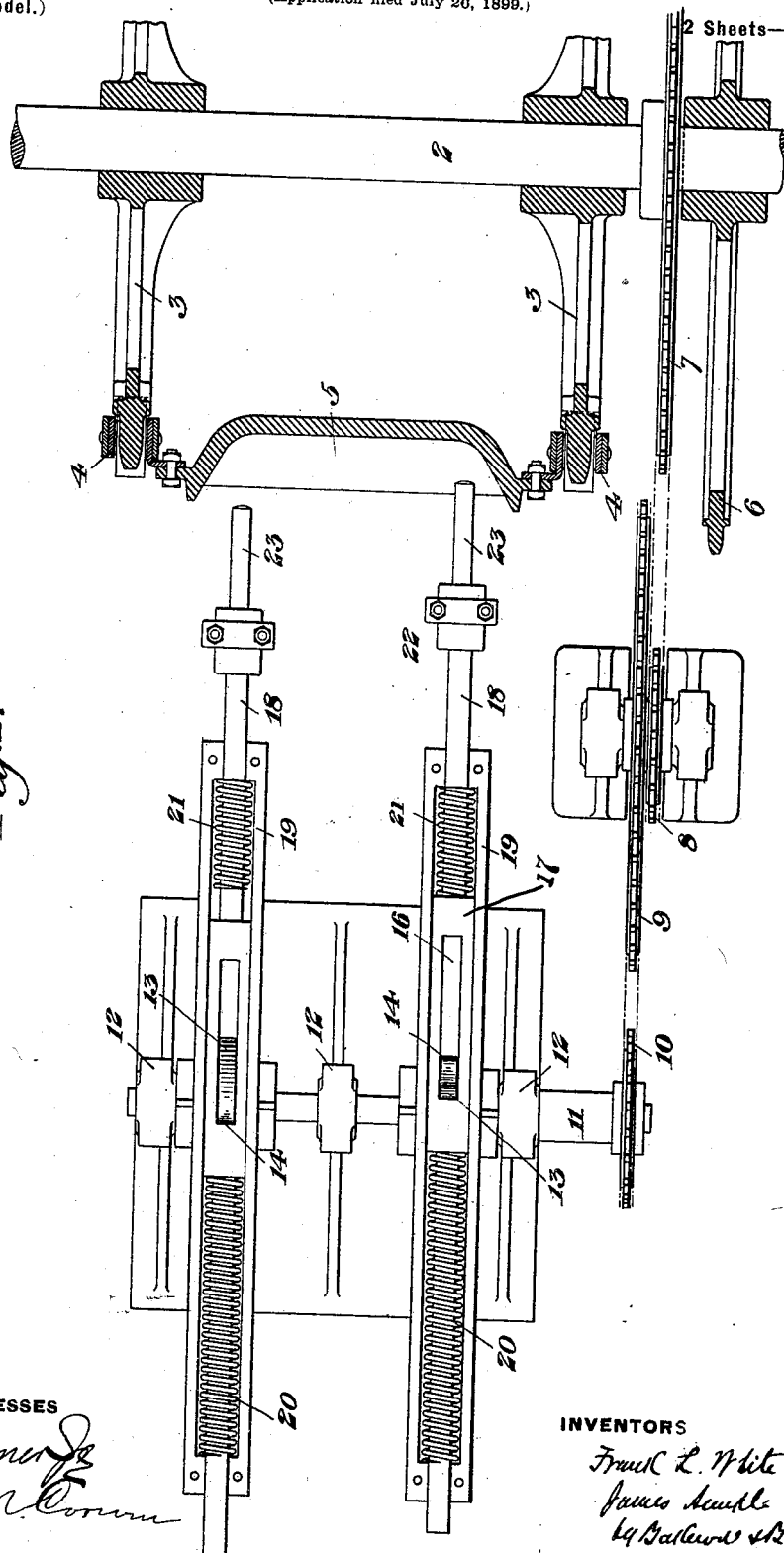
PIG EXTRACTOR.

(No Model.)

(Application filed July 20, 1899.)

2 Sheets—Sheet 1.

Fig. 1.



WITNESSES

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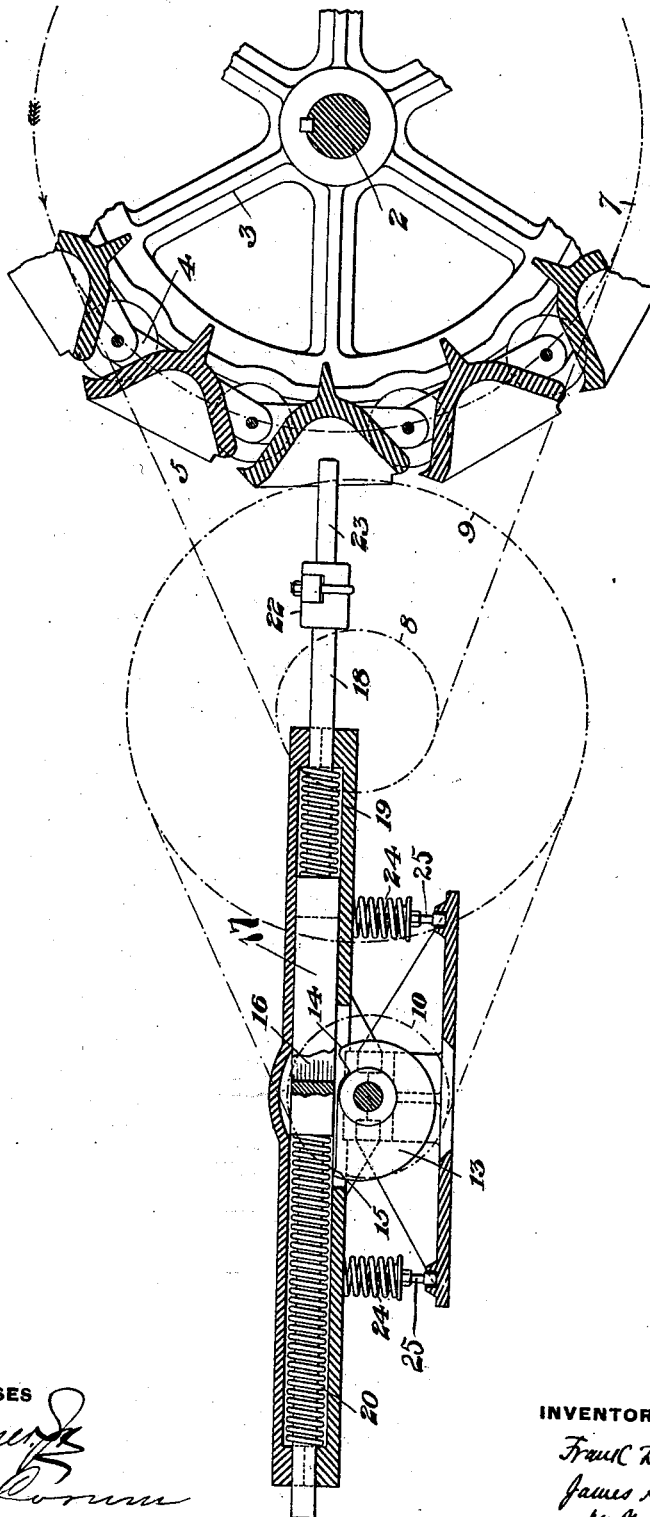
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## PIG EXTRACTOR.

(Application filed July 26, 1899)

(No Model.)

**2 Sheets—Sheet 2.**



**WITNESSES**

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# UNITED STATES PATENT OFFICE.

FRANK L. WHITE AND MARY G. SEMPLE, ADMINISTRATRIX OF JAMES SEMPLE, DECEASED, OF PITTSBURG, PENNSYLVANIA.

## PIG-EXTRACTOR.

SPECIFICATION forming part of Letters Patent No. 646,632, dated April 3, 1900.

Application filed July 26, 1899. Serial No. 726,162. (No model.)

*To all whom it may concern:*

Be it known that we, FRANK L. WHITE and JAMES SEMPLE, of Pittsburg, in the county of Allegheny and State of Pennsylvania, have invented a new and useful Improvement in Pig-Extractors, of which the following is a full, clear, and exact description, reference being had to the accompanying drawings, forming part of this specification, in which—

Figure 1 is a top plan view, partly in section, of the end portion of a casting-machine provided with the improved extractor; and Fig. 2 is a side elevation with the gearing indicated diagrammatically for clearness.

The invention relates to the extracting of pigs from metal molds, and is designed to provide improved automatic knocking or rapping apparatus which shall act upon the molds or pigs as the molds pass over the wheel at the discharge end, the apparatus acting in succession upon the successive pigs and preferably delivering two or more blows upon each.

In the drawings, 2 represents the shaft of a Uehling casting apparatus, having the sprocket-wheels 3 3, over which pass the chains 4, which support between them the molds 5, fastened in series to the chain. 6 is a driving pulley or wheel secured to the outer end of the shaft, and 7 is a sprocket-wheel also secured to the shaft 2 and connected by a suitable chain with the smaller sprocket-wheel 8 on an intermediate shaft, carrying the larger sprocket 9, connected to the sprocket-wheel 10 upon the cam-shaft 11.

The wheels 8 and 9 constitute a multiplying-gearing, the gearing being proportioned so that the shaft 11 will revolve as many times for each revolution of the shaft 2 as there are molds to the circumference of the wheel 3.

The shaft 11 is mounted in suitable stationary bearings 12, and between the bearings is provided with two cams 13 of the form shown in Fig. 2, having a rounded nose 14, from which the cam extends with gradually-increasing radius to the highest point 15. These cams work in slots 16 of plungers 17, having reduced stems 18, extending through the ends of guide-boxes 19. Springs 20 and 21 surround the reduced stems of each plunger, the spring 20 being much the stronger of the two. The forwardly-extending stems 18 are pro-

vided with blocks 22, in which are removably secured the striking-pins 23, which deliver blows upon the pigs within the mold. The cams 13 are arranged one slightly ahead of the other, so that two sharp blows will be struck in quick succession upon each pig. The guide-boxes 19 are mounted upon springs 24, the tension of which is adjusted by nuts surrounding the screw-threaded rods 25, having plates which bear upon the lower ends of the springs. This manner of supporting the guide-boxes prevents injury if the plungers are dragged down by the travel of the mold and, moreover, allows the plunger to be adjusted, so as to strike any desired points on the pigs.

The operation of the device is apparent. As the molds pass over the wheel the shaft 11, revolving once for each mold, carries back the plunger, thus compressing the springs 20 until the point 15 is reached, when the plungers will be successively released and driven forward, slightly compressing the weaker springs 21 and striking two successive blows upon alternate ends of the pigs, so as to jar them loose from the mold. The pigs dropping out at this point may be received upon any suitable carrier or receptacle.

The advantages of the invention result from the simplicity and cheapness of the apparatus and the effective removal of the pigs by reason of the quick successive blows applied to the different parts thereof.

The apparatus may be driven by gearing, belting, or other suitable connections, but must be timed or arranged so as to strike each pig as it comes into position, and many other changes may be made in the form and arrangement of the parts without departing from the invention.

What is claimed is—

1. In casting apparatus, a series of molds, mechanism for supporting and moving the molds, a wheel over which they pass, a pair of knockers arranged to strike successive blows on each mold, and actuating connections between the knockers and the wheel over which the molds pass; substantially as described.

2. In casting apparatus, a series of molds, a chain carrying the same, wheels over which

the chain extends, a pair of spring-actuated plungers arranged to deliver successive blows on each mold, and actuating connections between the plungers and the wheel over which  
5 the connections pass; substantially as described.

3. In casting apparatus, an endless series of molds, a wheel over which they pass, a pair of spring-supported guide-boxes, spring-actuated plungers within the boxes, cams arranged  
10 to retract the plungers, and connections between the cams and the wheel over which the molds pass; substantially as described.

4. In casting apparatus, a yielding-

mounted guide-box containing a spring-  
15 pressed plunger, a cam arranged to retract the plunger, and driving connections arranged to rotate the cam for each successive mold; substantially as described.

In testimony whereof we have hereunto set  
20 our hands.

FRANK L. WHITE.

MARY G. SEMPLE,

*Administratrix of James Semple, deceased.*

Witnesses:

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