

G. WALKER.
LATHE ATTACHMENT.
APPLICATION FILED NOV. 23, 1911.

1,030,439.

Patented June 25, 1912.

4 SHEETS-SHEET 1.

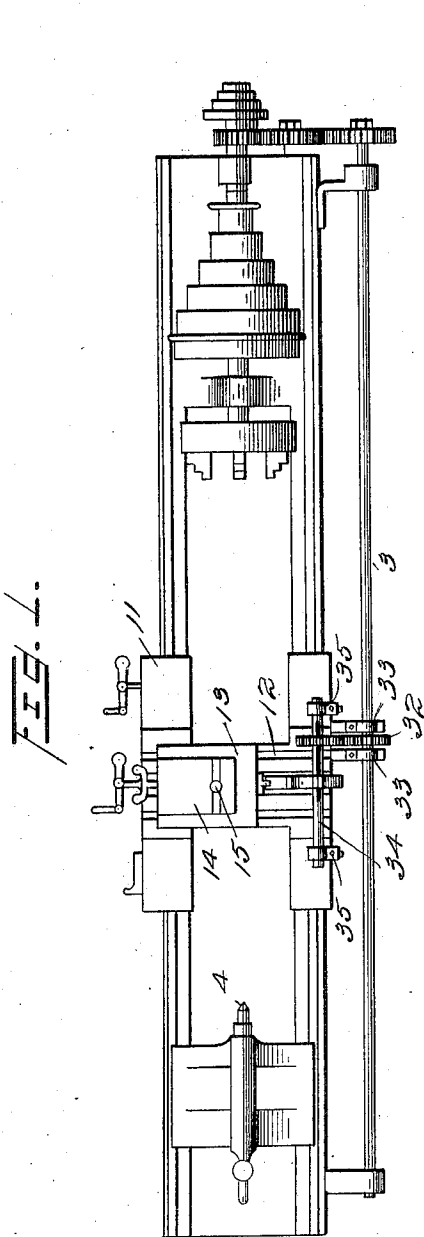


FIG. 1.

FIG. 2.

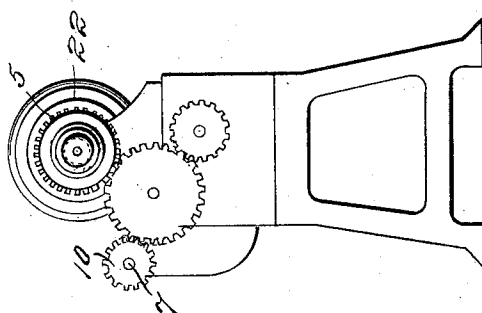
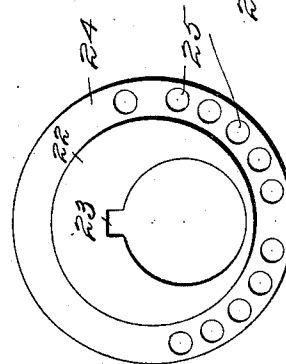
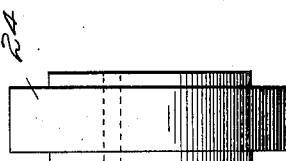


FIG. 4.

WITNESSES

E. C. Duff
A. C. Heap.

INVENTOR:

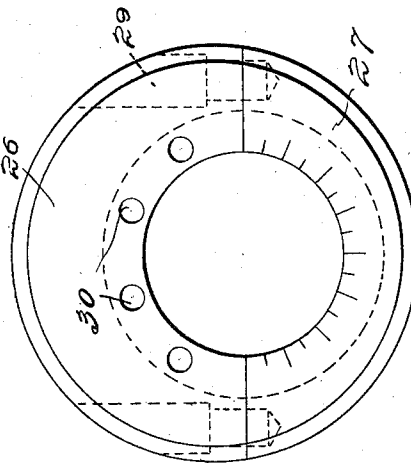
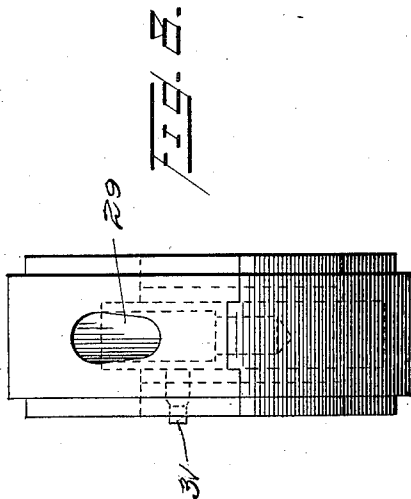
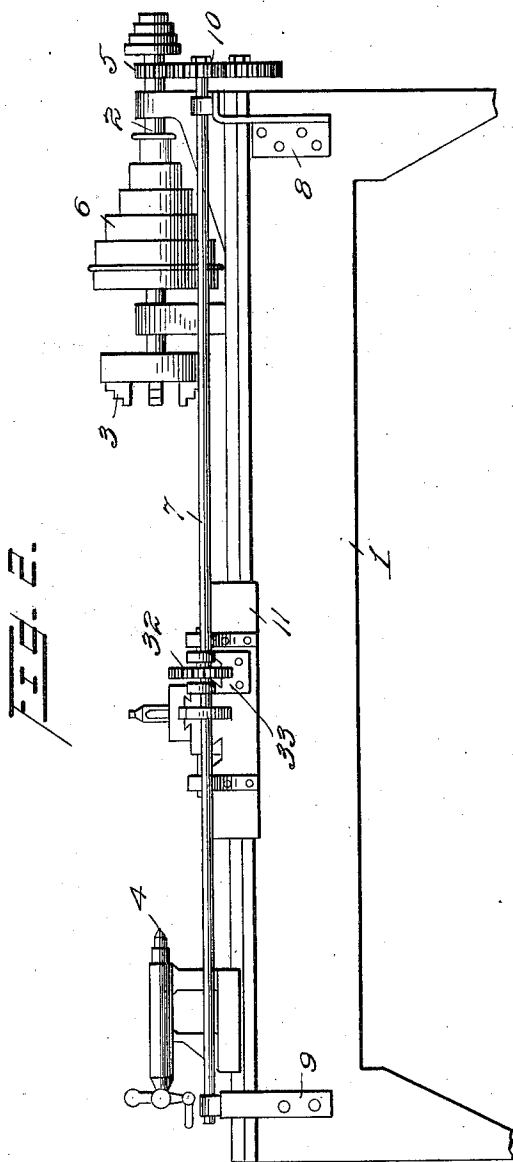
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Attorney

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4 SHEETS-SHEET 2.



WITNESSES

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4 SHEETS—SHEET 3.

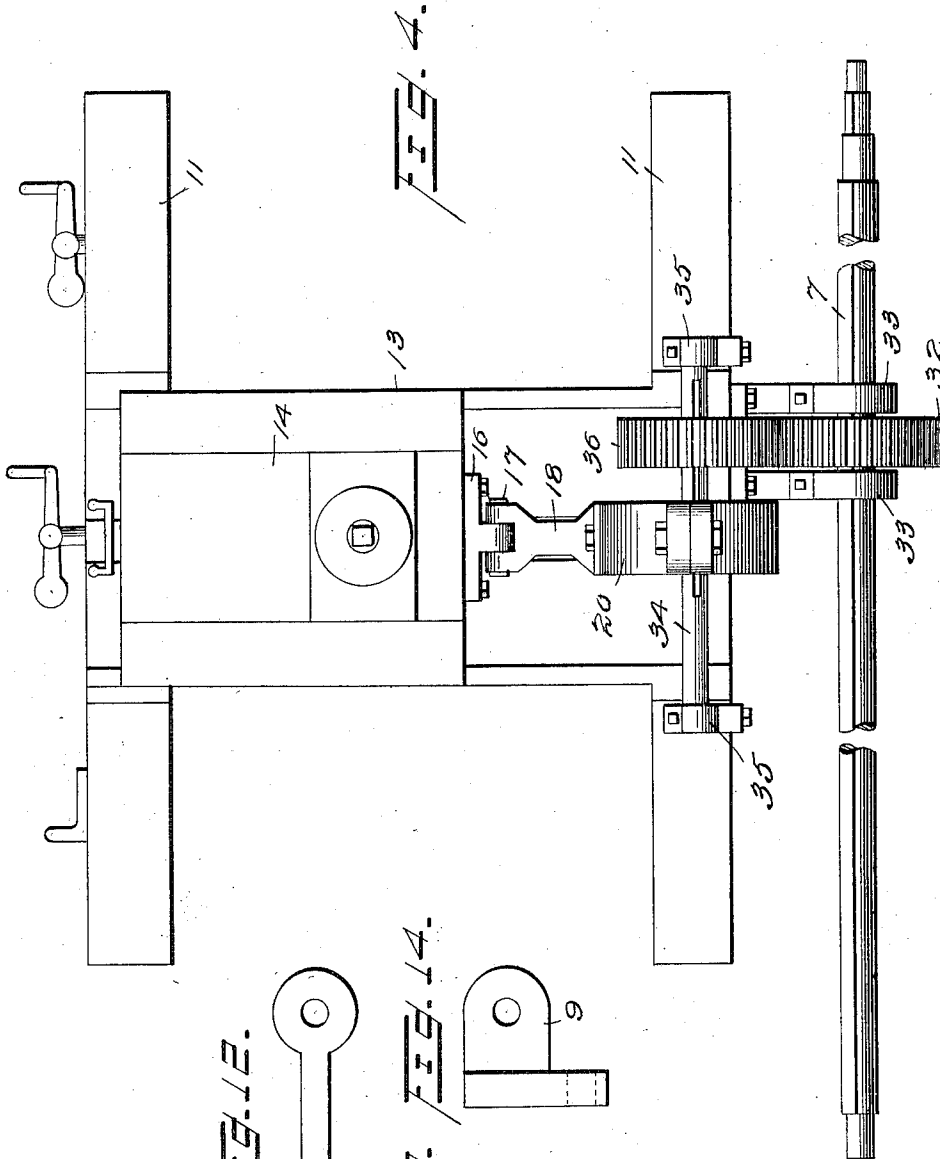


FIG. 12.

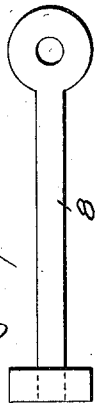
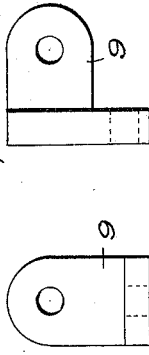


FIG. 13.



WITNESSES

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INVENTOR:

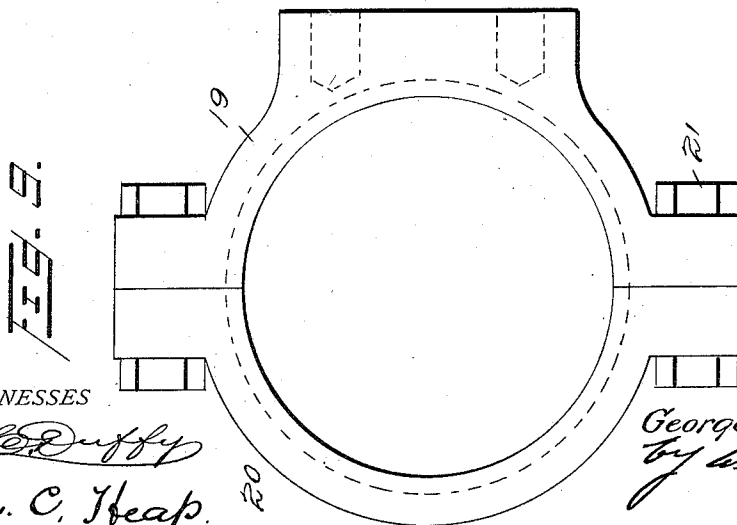
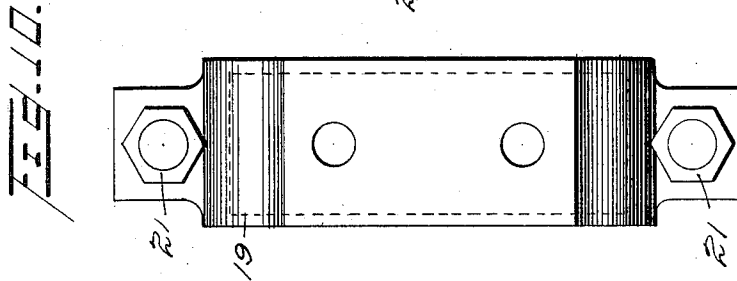
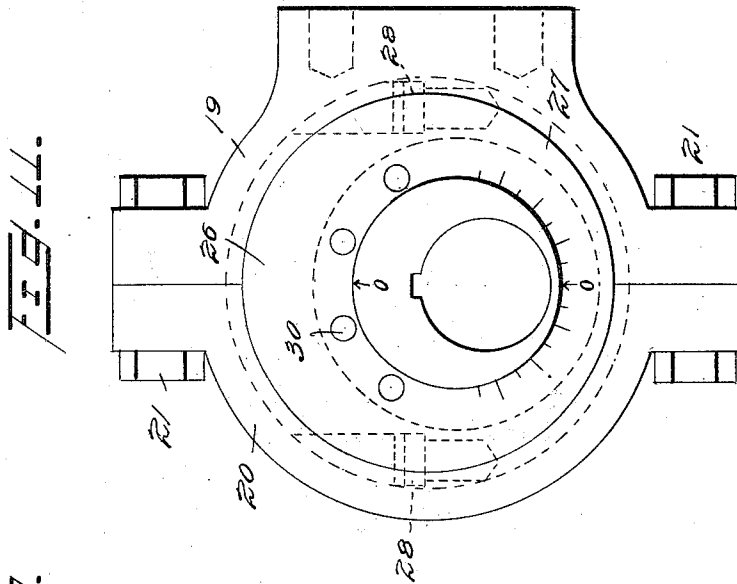
George Walker,
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4 SHEETS-SHEET 4.



WITNESSES

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UNITED STATES PATENT OFFICE.

GEORGE WALKER, OF RATON, NEW MEXICO.

LATHE ATTACHMENT.

1,030,439.

Specification of Letters Patent.

Patented June 25, 1912.

Application filed November 23, 1911. Serial No. 662,012.

To all whom it may concern:

Be it known that I, GEORGE WALKER, a citizen of the United States of America, residing at Raton, in the county of Colfax and State of New Mexico, have invented certain new and useful Improvements in Lathe Attachments, of which the following is a specification.

This invention relates to lathe attachments and one of the principal objects of the invention is to provide reliable and efficient means for turning and boring irregular forms such as ovals and polygons.

Another object of my invention is to provide an attachment for a metal turning lathe which can be readily adjusted for boring and turning various sizes of ovals, and for turning and boring many sided devices.

In carrying out my invention, I provide a shaft which is rotated by means of an intermediate gear disposed between the gear on the lathe spindle and the gear on said shaft mounted at the rear of the lathe, said shaft adapted to reciprocate the cross feed twice or more during each revolution of the lathe spindle, by means of an adjustable double eccentric operated by the shaft and connected gearing.

The objects and advantages herein referred to may be attained by means of the construction illustrated in the accompanying drawings, in which:—

Figure 1 is a plan view of a lathe of ordinary construction provided with my attachment; Fig. 2 is a rear elevation of the same; Fig. 3 is an end view looking at the head stock end of the machine; Fig. 4 is a top plan view of the cross feed, and showing certain parts of the cross feed, the eccentric and the operative parts of the attachment; Fig. 5 is a plan view of the inner member of the double eccentric; Fig. 6 is an elevation of the same; Fig. 7 is a plan view of the outer eccentric member; Fig. 8 is an elevation of the same; Fig. 9 is a plan view of the eccentric strap for inclosing the two eccentric members; Fig. 10 is an elevation of the same; Fig. 11 is a face view of the two eccentric members set at zero; Fig. 12 is a plan view of one of the brackets for the shaft for operating the attachment; Fig. 13 is a view in elevation of the bracket; Fig. 14 is a similar view of another form of bracket which I may utilize.

Referring to the drawings, the numeral 1 designates the lathe bed which may be of

the usual or any suitable construction; 2 is the lathe spindle; 3 is the head stock; 4 is the tail stock; 5 is the gear on the lathe spindle; and 6 are the cone pulleys.

A shaft 7 extending at the rear of the lathe is mounted in suitable brackets 8 and 9, said shaft being provided with a gear wheel 10. The gear wheel 5 on the lathe spindle is provided with double the number of cogs or gear teeth that are provided on gear wheel 10, and for this reason two revolutions of the gear wheel 10 are accomplished at each revolution of the lathe spindle. It will be obvious that gear wheels having different numbers of teeth, relatively, may be used for giving more or less than two revolutions of the shaft to one revolution of the spindle, and this is accomplished by readjusting or dropping down of the intermediate gear connecting 5 and 10 as shown in Fig. 2.

The lathe carriage 11, which is of the usual construction, is provided with grooves 12 for the cross feed, and mounted to move in these grooves is a compound rest 13 carrying a tool support 14 provided with an adjustable tool post 15. The cross feed is provided with a suitable bracket 16, and pivoted to the bracket 16 on a pin 17 is a connecting member 18, attached at one end to an eccentric strap consisting of two members 19 and 20, connected together by bolts 21, for inclosing the double eccentric for reciprocating the cross feed. The double eccentric consists of an inner member 22 having a key way 23 and a peripheral rib 24 provided with a series of perforations 25. The member 22 is inclosed within an eccentric member consisting of two sections 26 and 27 secured together by screws or bolts 28, extending through openings 29. The member 26 is provided with a series of threaded perforations 30 which may be brought into coincidence with any of the perforations 25 in the member 22, and by the insertion of a threaded pin or screw 31 the throw of the eccentrics may be adjusted within wide limits. As shown in Fig. 11 the two eccentrics are adjusted in such a way as to have the greatest throw. However, by adjusting the two members relatively the throw may be regulated for any required work.

On the shaft 7 a gear wheel 32 is mounted between brackets 33. A shaft 34 is supported in brackets 35 on the lathe carriage.

Mounted to rotate on the shaft 34 is a gear wheel 36 of the same size and number of gear teeth as 32. The double eccentric is splined to the shaft 34 to rotate therewith.

5 From the foregoing, it will be obvious that for each revolution of the lathe spindle, the cross carriage is reciprocated twice, and that the throw or reciprocations of the cross feed may be adjusted by means of the double
10 eccentric to cut an oval or to bore an oval hole or bearing. It will also be obvious that many sided structures may be formed by the various adjustments of the gears.

My invention is of simple construction,
15 can be adjusted in a very few moments, and the attachment can be placed upon any lathe in a very short time.

I claim:

20 1. A lathe attachment comprising a lathe bed provided with a lathe carriage having a cross feed mounted thereon, a long shaft extending in rear of said bed and mounted in brackets, a gear wheel mounted centrally of said shaft, a short shaft supported in
25 brackets on said carriage, said short shaft provided with a gear wheel in mesh with the gear wheel on said long shaft, a double eccentric splined to said short shaft to rotate therewith, said double eccentric com-
30 prising an inner member inclosed within an outer perforated eccentric member consisting of two sections secured together by screws or bolts, said inner member provided with a peripheral rib provided with a series
35 of threaded perforations which may be brought into coincidence with any of the perforations in the said outer member, a

threaded pin to engage the coinciding per-
forations for holding the said double eccen- 40
tric in adjusted position, said double eccen-
tric inclosed by an eccentric strap consist-
ing of two members held together by bolts,
and a connecting member attached at one
end to the said eccentric strap and pivoted
at the other end to a bracket provided upon 45
the inner end of the said cross feed, said
connecting member conveying the motion
from the eccentric to the cross feed for oper-
ating the latter.

2. A lathe attachment comprising a lathe 50
bed provided with a lathe carriage having
a cross feed mounted thereon, a long shaft
extending in rear of said bed and mounted
in brackets, a gear wheel mounted centrally of
said shaft, a short shaft supported in brack- 55
ets on said carriage, said short shaft mount-
ed in front of said long shaft and on a level
therewith, said short shaft provided with a
gear wheel in mesh with the gear wheel on said
long shaft, a double eccentric splined to said 60
short shaft to rotate therewith, said double
eccentric inclosed by an eccentric strap, a
connecting member attached at one end to
said strap and pivoted at the other end to
a bracket provided upon the inner end of 65
said cross feed, and means for regulating
the throw of the eccentric.

In testimony whereof I affix my signature
in presence of two witnesses.

GEORGE WALKER.

Witnesses:

CHARLES A. WHITES,
MANSFIELD A. FARRELL.

Copies of this patent may be obtained for five cents each, by addressing the "Commissioner of Patents,
Washington, D. C."