

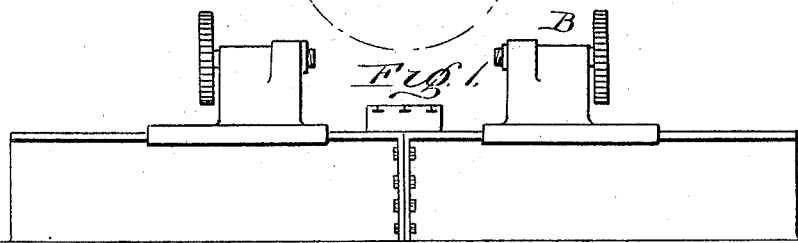
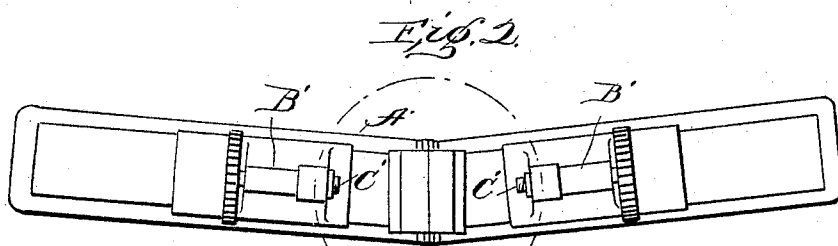
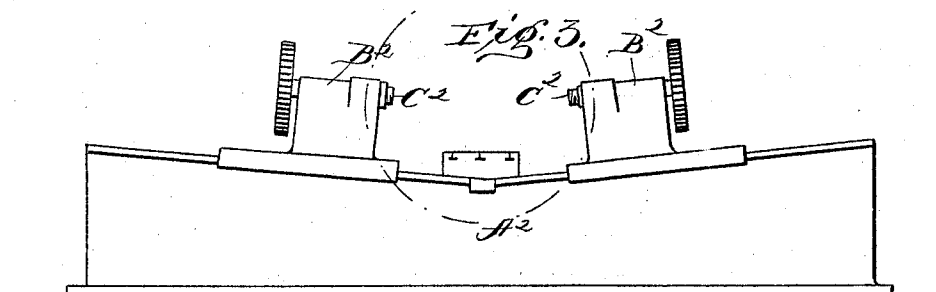
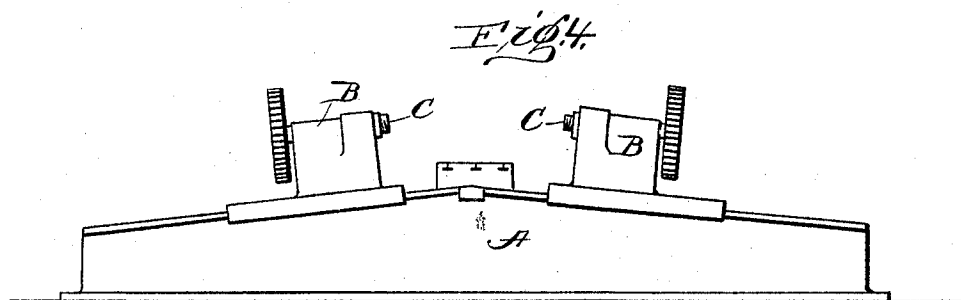
(No Model.)

G. H. SMITH.

MACHINE FOR BORING AND FACING VALVE SEATS.

No. 584,423.

Patented June 15, 1897.



Witnesses:

J. M. Fowler Jr.
H. A. Hallfish

Inventor
George Henry Smith

By O. H. Budlong
Attorney

UNITED STATES PATENT OFFICE.

GEORGE HENRY SMITH, OF PROVIDENCE, RHODE ISLAND, ASSIGNOR TO
BEAMAN & SMITH, OF SAME PLACE.

MACHINE FOR BORING AND FACING VALVE-SEATS.

SPECIFICATION forming part of Letters Patent No. 584,423, dated June 15, 1897.

Application filed September 30, 1896. Serial No. 607,408. (No model.)

To all whom it may concern:

Be it known that I, GEORGE HENRY SMITH, a citizen of the United States, residing at Providence, in the county of Providence and State of Rhode Island, have invented certain new and useful Improvements in Machines for Boring and Facing Valve-Seats; and I do declare the following to be a full, clear, and exact description of the invention, such as will enable others skilled in the art to which it appertains to make and use the same, reference being had to the accompanying drawings, and to the letters of reference marked thereon, which form a part of this specification.

15 This invention has relation to that class of machines for boring and facing valve-seats, &c., wherein two heads are employed, each carrying a spindle or spindles for tools arranged to operate upon two or more sides at
20 once.

Heretofore machines for boring and facing valve-seats have consisted principally of a bed long enough to accommodate both heads, brackets, &c., as required by the nature of
25 the work; but in said machines each of the spindles is in line with the other, or, in other words, a line drawn through the center of one and continued out would extend either through the center of the other or be parallel
30 therewith. Horizontally said spindles are on a level with each other. The character of the work heretofore done on such machines has required that the spindle-centers be in line in every direction. Such machines are not
35 capable of boring and facing the seats or insides of that type of straightway valves in which the faces are at an angle instead of being parallel with each other, such as are known as "Chapman's patent," the finishing of
40 which, therefore, has been difficult, tedious, and expensive.

The purpose of my present invention is to provide a simple, cheap, and practical machine for quickly and efficiently finishing
45 valves of the type mentioned; and to this end the invention consists, essentially, of two spindle-centers arranged at an angle other than that of one hundred and eighty degrees from each other, whereby two sides of valve-seat
50 arranged at an inclination to each other may be finished at once. This object is accom-

plished by the construction illustrated in the accompanying drawings, in which—

Figure 1 is a side elevation, and Fig. 2 a plan view, of one form of the invention. Fig. 55 3 is a side elevation of another form thereof, and Fig. 4 a side elevation of a third form.

For convenience of construction the bed A, A', or A² is preferably made of two parts joined at the center by bolts and screws, as
60 shown in Figs. 1 and 2.

To each inclined half of the bed is fitted a head B, B', or B², which heads support the spindles C C, C' C', or C² C², which are driven
65 by suitable mechanism and carry suitable finishing-tools. Said driving mechanism and finishing-tools are not shown herein, as they are well known in the art and form no part of the present invention.

The two ends of the bed and the spindles
70 may be arranged at, say, one hundred and seventy degrees one way and one hundred and ninety degrees the other way (whereby holes and surfaces ten degrees apart may be simultaneously bored or faced) with respect
75 to a horizontal circle, as in Fig. 1, or vertical circles, as in Figs. 2 and 3. I do not, however, limit myself to the precise degree, as the angles may be varied to correspond with
80 the desired product.

I am aware that elbows have been bored by machines comprising two boring-tools arranged at an angle of ninety degrees with each other, and that T's have been formed by
85 machines having two boring-tools arranged at an angle of one hundred and eighty degrees from each other and a third boring-tool arranged at ninety degrees from each of the others, and I am further aware that gas and
90 water fittings have been bored by a series of tools operating simultaneously and extending at other angles with each other than those above mentioned, and also that in making
95 such fittings the device operated upon has been held at an inclination to the operating tool. I am also aware that holes have been bored in a bucket to receive the rivets for attaching the handle thereto by a machine the opposite ends of the bed of which are inclined
100 relatively to each other.

None of such constructions, however, are capable of finishing simultaneously two sides

of a valve-seat which are not parallel with each other; and I am not aware that this advantageous object has heretofore been accomplished.

5 Having thus described my invention, what I claim is—

1. In a machine for finishing simultaneously the two opposite sides of the seat of the Chapman's patent straightway valve, the
10 combination of a pair of spindles for carrying the dressing-tools arranged at an angle of, say one hundred and seventy degrees one way and one hundred and ninety degrees the other way, substantially as described.

15 2. In a machine for finishing simultaneously the two opposite sides of valve-seats in that type of valve known to the trade as

"Chapman's patent" wherein said sides are inclined relatively to each other, the combination of the bed comprising two halves or ways 20 arranged at an angle with each other of, say, one hundred and seventy degrees one way, and one hundred and ninety degrees the other way, and the spindles for carrying the dressing-tools supported by the respective halves 25 or ways of said bed and extending parallel thereto, substantially as described.

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

GEORGE HENRY SMITH.

Witnesses:

D. A. BUFFINGTON,
JOSEPH H. PEARCE.