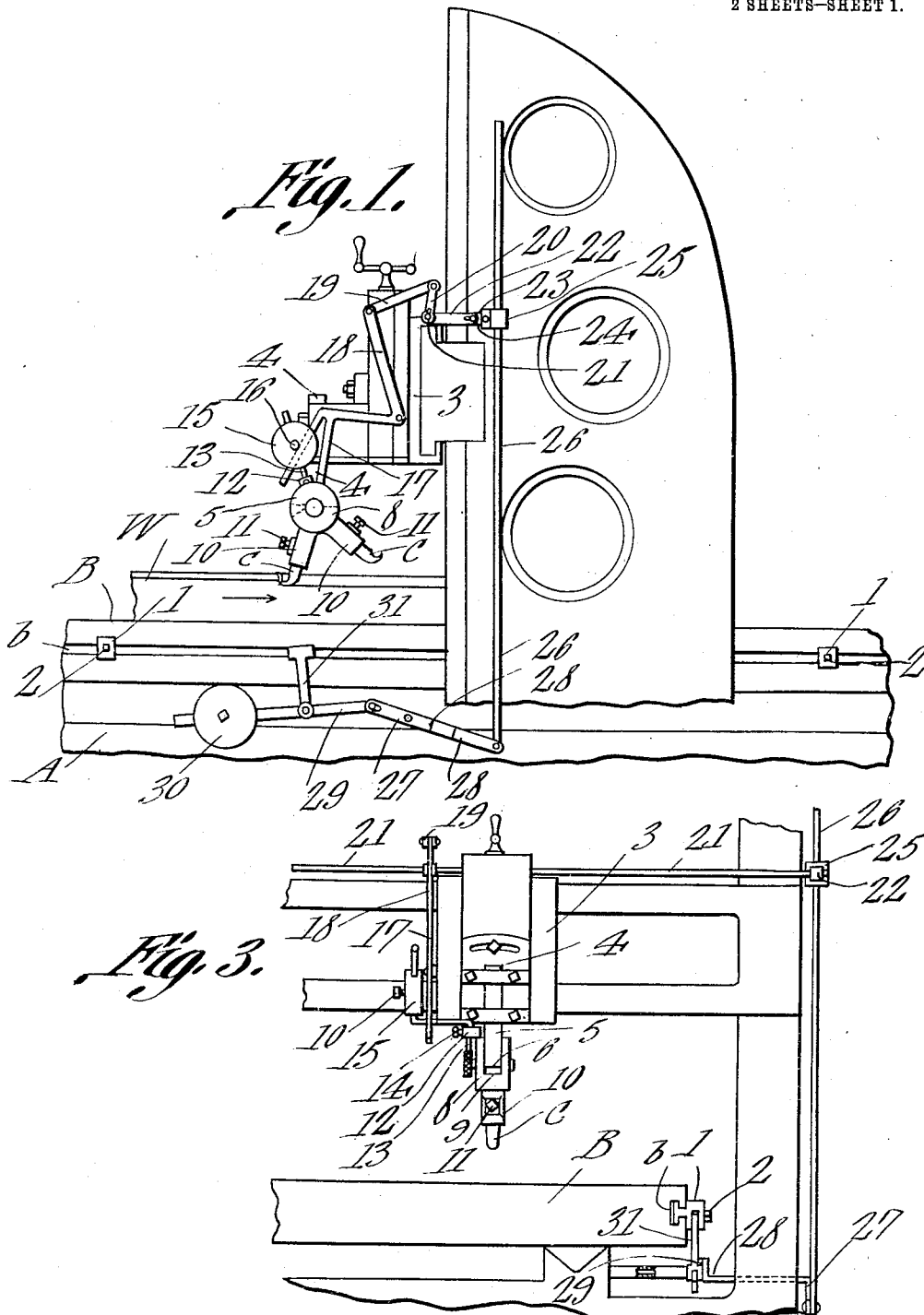


E. EGGERS.
PLANING MACHINE.
APPLICATION FILED NOV. 27, 1911.

1,041,984.

Patented Oct. 22, 1912.

2 SHEETS—SHEET 1.



Witnesses

J. P. Taylor
L. R. Wilson

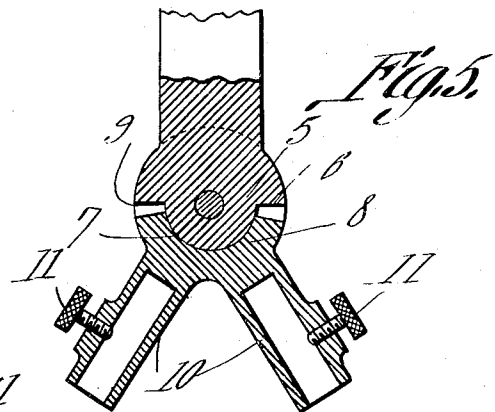
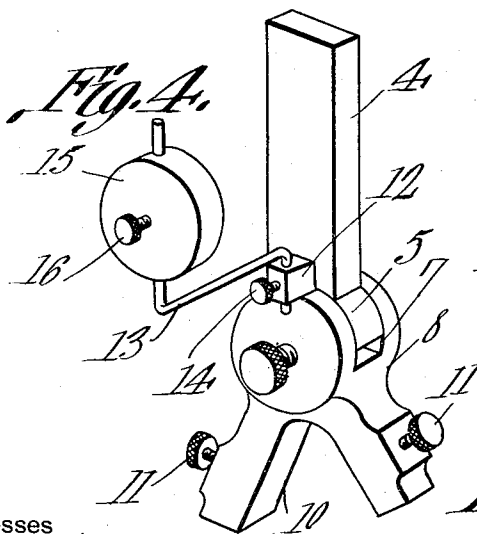
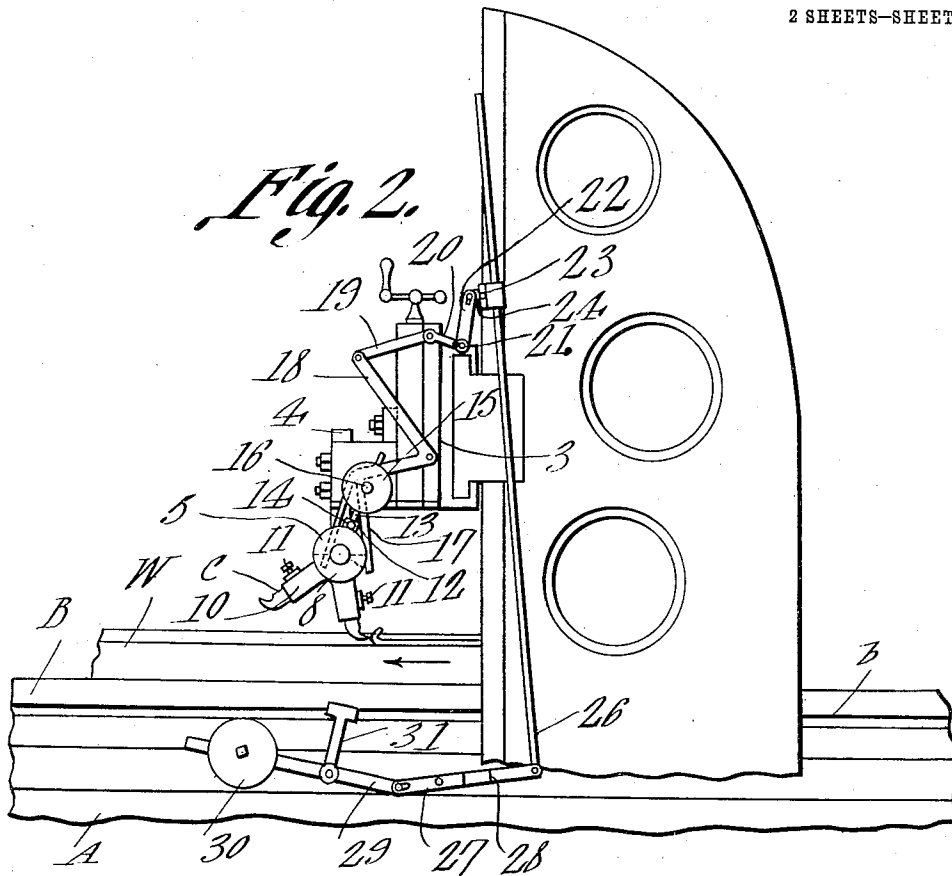
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Witnesses

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UNITED STATES PATENT OFFICE.

ERNEST EGGERS, OF SAN BERNARDINO, CALIFORNIA.

PLANING-MACHINE.

1,041,984.

Specification of Letters Patent.

Patented Oct. 22, 1912.

Application filed November 27, 1911. Serial No. 662,718.

To all whom it may concern:

Be it known that I, ERNEST EGGERS, a citizen of the United States, residing at San Bernardino, in the county of San Bernardino and State of California, have invented a new and useful Planing-Machine, of which the following is a specification.

This invention relates to planing machines and its principal object is to provide a tool holder having means whereby the same is reversed automatically upon the completion of each movement of the work whereby, as the work supporting bed reciprocates, the holder will be actuated so as to bring different tools successively into engagement with the work, thus producing a cut during each movement of the work.

A further object is to provide mechanism of this type which is simple and durable in construction and can be readily applied to ordinary types of planing machines.

With the foregoing and other objects in view which will appear as the description proceeds, the invention resides in the combination and arrangement of parts and in the details of construction hereinafter described and claimed, it being understood that changes in the precise embodiment of the invention herein disclosed can be made within the scope of what is claimed, without departing from the spirit of the invention.

In the accompanying drawings the preferred form of the invention has been shown.

In said drawings:—Figure 1 is a side elevation of a portion of a planing machine having the present improvements applied thereto, one of the cutting tools being shown in engagement with the work. Fig. 2 is a similar view showing the other tool in engagement with the work. Fig. 3 is a front elevation of the parts shown in Fig. 1. Fig. 4 is a perspective view of the tool holder. Fig. 5 is a section through the holder.

Referring to the figures by characters of reference A designates a portion of the main structure of the planing machine, the same supporting a movable work holding bed B having a longitudinal groove *b* in one side thereof for the reception of tappets 1 which may be adjusted to any desired distances apart and held against relative movement by means of set screws 2 or the like.

A head 3 is mounted for transverse movement above the bed and is adapted to be

actuated by the usual or any preferred mechanism.

A bar 4 is secured to the head 3 and is provided, at its lower end, with an eye 5 having diametrically opposed outstanding stop shoulders 6. This eye extends into a socket 7 formed within the head 8 of the tool holder. This head is substantially cylindrical and has stop shoulders 9 therein adapted to cooperate with the shoulders 6 for the purpose of limiting the movement of the head 8 relative to the eye 5. Tubular arms 10 extend radially from the head 8 and each of them is adapted to receive the shank of a cutting tool C, any suitable means, such as set screws 11, being provided for holding the cutting tools within the arms 10. The two cutting tools C are oppositely disposed, as indicated in Figs. 1 and 2.

An apertured ear 12 is formed upon the upper portion of the head 8 at the front thereof and receives one end portion of an angular stem 13. This stem has parallel terminal portions extending upwardly and downwardly respectively, the downwardly extending terminal portion projecting into the ear 12 and being held therein by a set screw 14 or the like while the upwardly extending terminal portion carries a weight 15 which is adjustable thereon and is adapted to be held in adjusted position by means of a set screw 16 or the like.

The forwardly extending portion of the rod 13 extends between the arms of a fork 17 formed at the lower end of a bell crank lever 18 which is fulcrumed on the head 3, these arms converging upwardly so as to form a V-shaped space for the reception of the rod 13. The upper end of the bell crank lever 18, is connected, by a link 19, to an arm 20 feathered on a rock shaft 21 which extends transversely of the machine. It is to be understood of course that as the head 3 is moved transversely of the machine the arm 20 also moves therewith and slides along the shaft 21. Inasmuch as said arm is feathered on the shaft, however, it cannot rotate independently of the shaft.

An arm 22 is secured to the shaft 21 adjacent one end thereof and is connected, as at 23, to an ear 24 extending from a sleeve 25. This sleeve is clamped upon a rod 26 arranged beyond one face of the machine. The lower end of the rod is pivotally con-

nected to the long arm of a lever 27 which is
 fulcrumed upon the main frame or body of
 the machine, the long arm of said lever be-
 ing offset laterally, as at 28. Said lever is
 5 pivotally connected to another lever 29 ful-
 crumed upon the structure A and having a
 weight 30 adjustably mounted on one arm
 thereof. Another arm 31 extends upwardly
 from the lever at the point where it is piv-
 10 otally connected to the structure A and this
 arm 31 extends between and into the paths
 of the tappets 1 heretofore referred to.
 Weight 30 is adapted to counter balance the
 rod 26 and other parts of the mechanism
 15 supported by lever 28 so that the levers 29
 and 27 can be easily shifted in the manner
 hereinafter set forth.

In using the mechanism herein described
 cutting tools are secured within the tubular
 20 members 10 of the holder, these tools being
 oppositely disposed as shown in Figs. 1 and
 2. As the bed B and the work W thereon
 move in the direction indicated by the arrow
 in Fig. 1, the near tool C will cut into the
 25 work, said tool being held in cutting posi-
 tion by the weight 15 which is supported out
 of vertical alinement with the axis of rota-
 tion of the head 8, as indicated in Fig. 1.
 The tappets 1 are arranged beyond the ends
 30 of the work and, after a cut has been made
 throughout the length of the work one of
 the tappets will move against the arm 31
 and thus elevate weight 30 and cause the rod
 26 to move upwardly. Shaft 21 will there-
 35 fore be rotated by arm 23 and arm 22 will
 transmit motion through the link 19 to the
 bell crank lever 18. Fork 17 will, therefore,
 be moved against the forwardly extending
 portion of rod 13 and thus swing the head
 40 8 relative to eye 5 until the other cutting tool
 is brought into active position while the
 tool previously used for cutting purposes
 will be elevated away from the work. The
 head 3 will feed transversely of the work in
 45 the usual or any preferred manner after
 which the bed B will be started upon its re-
 turn movement as ordinarily. Thus the low-
 ered tool will engage the work and plane it
 until the other tappet is brought into en-

gagement with arm 31 whereupon all of the 50
 parts will return to the positions originally
 described. It is to be understood that the
 movement of fork 17 need only be sufficient
 to shift the weight 15 past the dead center
 whereupon said weight will complete the 55
 movement of the tool holder and bring the
 cutting tool into proper position for engage-
 ment with the work.

What is claimed is:—

1. In a planing machine, a tool holder in- 60
 cluding a pivotally supported element, di-
 verging tool receiving portions carried
 thereby and having limited swinging move-
 ment relative thereto, fixed means for con-
 necting said element to the head of a planing 65
 machine, gravity operated means for hold-
 ing said element at either limit of its pivotal
 movement, and means for shifting the said
 element about its pivot.

2. The combination with a planing ma- 70
 chine including a work supporting bed mov-
 ably mounted, a head movable transversely
 of the path of movement of the bed, and a
 rock shaft parallel with the path of move-
 ment of the head, of a tool holding element 75
 pivotally mounted, diverging tool receiving
 portions carried thereby and having limited
 swinging movement relative thereto, means
 for connecting said element to the head, a
 weighted device for holding said element at 80
 either limit of its movement, a forked mem-
 ber upon the head and engaging said device,
 means for transmitting motion from the
 rock shaft to said forked member to shift
 the tool holding element, a weighted lever 85
 fulcrumed upon the planing machine and be-
 low the bed, an arm upstanding therefrom,
 means adjustably connected to the bed for
 engaging said arm to shift the lever, and
 means actuated by the lever for actuating 90
 the rock shaft.

In testimony that I claim the foregoing as
 my own, I have hereto affixed my signature
 in the presence of two witnesses.

ERNEST EGGERS.

Witnesses:

R. HUTCHINS,
 GENEVIEVE CARPENTER.