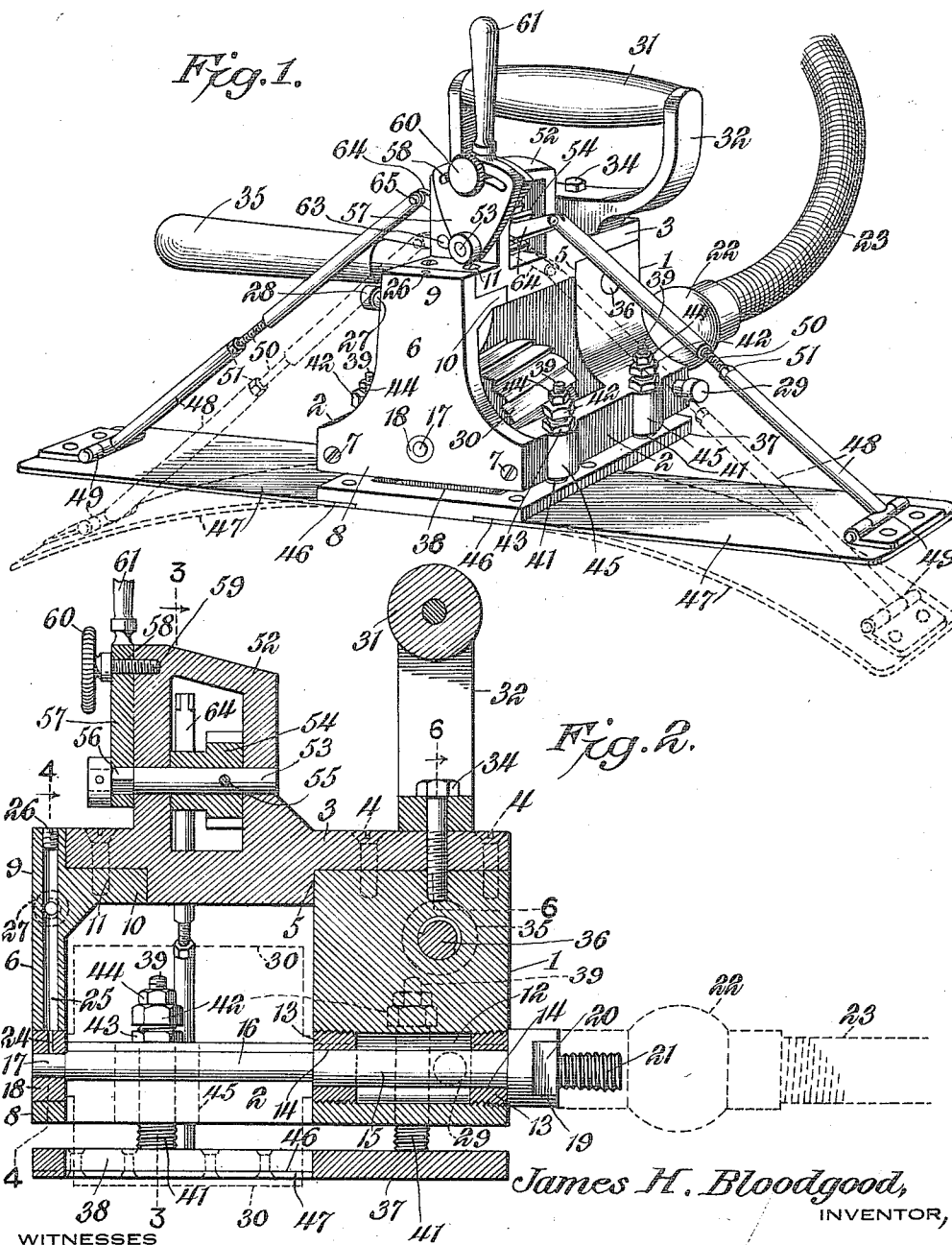


J. H. BLOODGOOD.
 PORTABLE HAND PLANER.
 APPLICATION FILED JULY 23, 1918.

1,296,910.

Patented Mar. 11, 1919.

2 SHEETS—SHEET 1.



James H. Bloodgood,
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WITNESSES

Howard D. Orr.
 H. J. Chapman.

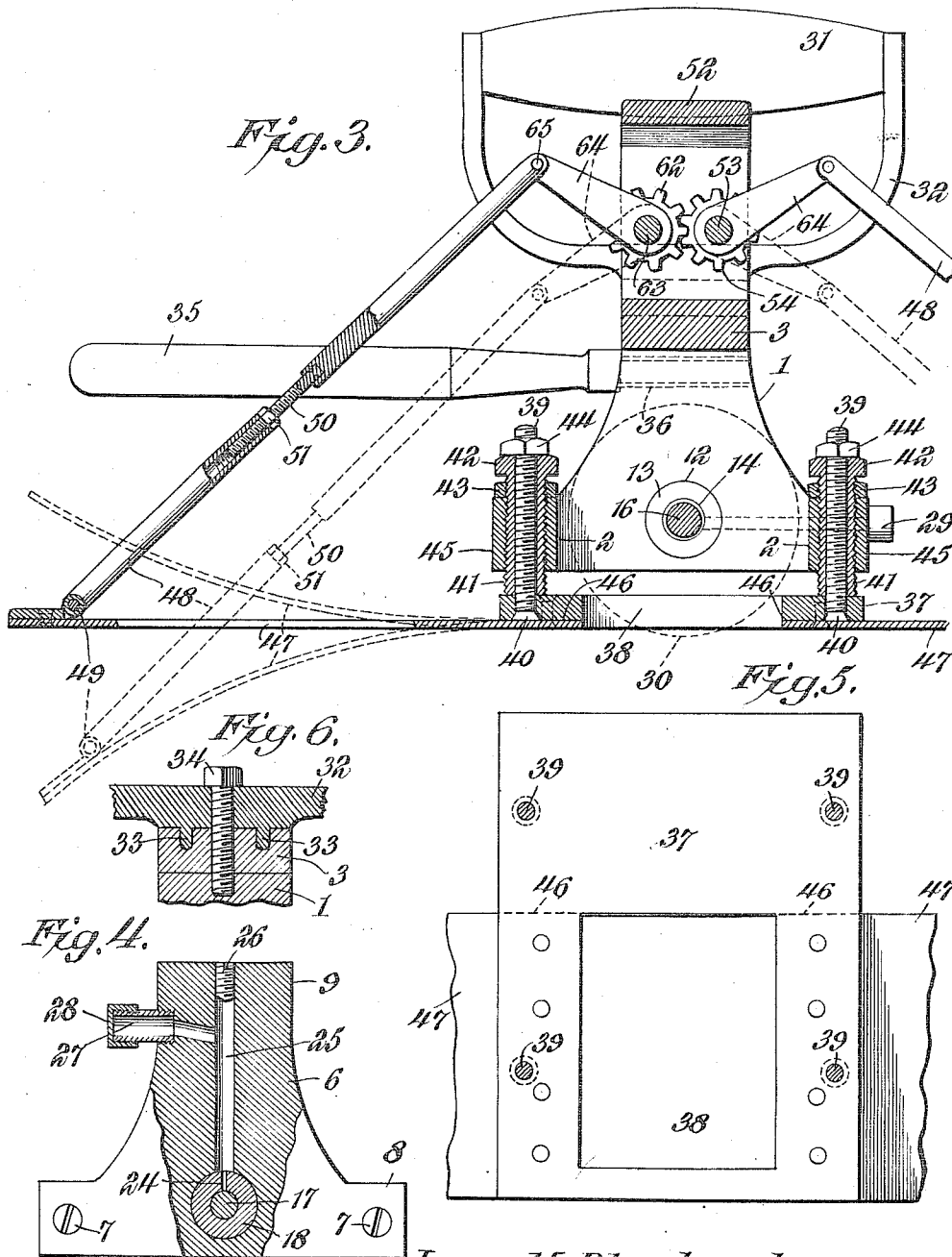
BY

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PORTABLE HAND-PLANER.

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Specification of Letters Patent.

Patented Mar. 11, 1919.

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To all whom it may concern:

Be it known that I, JAMES HENRY BLOODGOOD, a citizen of the United States, and a resident of Jacksonville, in the county of Duval and State of Florida, have invented certain new and useful Improvements in Portable Hand-Planers, of which the following is a full, clear, and exact description.

The present invention relates to portable hand planers and it has for its object to produce a tool of this character which shall be light and strong and in which the working cut of the tool may be varied to vary the depth thereof and to provide for effective lubrication of the tool carrying shaft, and further, to provide an adjustable face plate with means for simultaneously adjusting the opposite ends thereof.

To the above ends, the present invention consists of the devices and combinations of devices which will be hereinafter described and claimed.

The invention will be best understood from a consideration of the following detailed description taken in connection with the accompanying drawings forming part of this specification.

In the drawings:—

Figure 1 is a perspective view of the planer showing the bottom portion flat in full lines and curved in dotted lines.

Fig. 2 is an upright section from side to side of the planer, certain parts of the driving means being shown in dotted lines.

Fig. 3 is a section on the line 3—3 of Fig. 2.

Fig. 4 is a section on the line 4—4 of Fig. 2.

Fig. 5 is a top plan view of the bottom plate of the planer.

Fig. 6 is a section on the line 6—6 of Fig. 2.

The body member 1 at its lower end has spaced and substantially parallel side extensions "2". A top or cap member "3" extends beyond the same face of the body "1" as the extensions "2" and to a like degree. One end of the cap or top "3" is made fast to the top of the body member "1" by screws "4" or in any other appropriate manner, that portion of the top "3" over the main part of the body member "1" being recessed to provide an abutting shoulder "5" to bear against the body member "1".

At the ends of the extensions "2" is a side plate "6" which is made fast to the outer ends of the extensions "2" by screws "7" or in other suitable manner. The lower portion of the body member "1" is expanded so that the extensions "2" are spread apart to a greater extent than the width of the top "3". Similarly, the bottom portion of the side plate "6" is widened, as indicated at "8", to conform to the spacing of the extensions "2", while the upper portion "9" of the side plate "6" is narrowed sufficiently to conform to the width of the top "3". Projecting from the narrow end portion "9" of the side plate "6" toward the body portion "1" is a bracket "10" which fits beneath the top "3" which is recessed to receive it and made fast thereto by screws "11" or in other appropriate manner.

The parts so far described might be made in a single casting of any suitable light and strong metal, but it is preferable to make the side plate "6" separate from the rest of the body of the tool for purposes of removal in order to permit access to some other parts to be described.

Extending through the widened lower end of the body member "1" is a passage or bore "12" with the opposite ends closed by bushings "13" which latter may be screwed into place, and these bushings have alined holes "14" through them whereby the bushings constitute journal bearings for a shaft "15", which latter has an axial prolongation extending across the space between the main part of the body member "1" and the side plate "6" where the shaft as shown at "17" is mounted in a bushing "18" carried by the plate "6", the bushing "18" constituting a journal bearing for the extremity "17" of the shaft "15".

The opposite end of the shaft "15" projects beyond the side face of the body member "1" and is provided with an enlargement "19" with flats "20" thereon for the application of a holding tool. Extending axially from the enlargement "19" is a threaded stem "21" for attachment thereto of a power driven shaft as by means of a universal joint structure "22" and a flexible shaft "23", the universal joint structure and the flexible shaft being only shown conventionally and without attempt to illustrate any particular structure, since such mechanisms are commercial articles to be

found upon the market and need no especial description. The journal bearing "18" is provided with a lubricating passage "24" in line with another lubricating passage "25" extending through the plate "6" from the top downwardly to the passage "24" and of larger size so as to hold a supply of lubricant while the upper end of the passage "25" is closed by a screw plug "26". Lubricant is introduced into the passage "25" through an oil cup "27" to which access may be had on the removal of a screw cap "28". Of course, any type of oil cup other than that shown and adapted for the purposes of the invention may be used.

The bore "12" between the journal bearings "13" is made of sufficient size to contain grease or other lubricant furnishing lubrication for the shaft "15" for a relatively long time without renewal, and grease or more fluid lubricant may be introduced when desired through a grease cup "29" carried by the body member "1" and opening into the bore "12."

The portion "16" of the shaft "15" carries a rotary cutter "30", as shown in Fig. 1 and indicated in dotted lines in Figs. 2 and 3. The showing of the cutter is more or less conventional, since the special form of cutter is not at all obligatory and the particular form of cutter shown may be replaced by other forms of cutters or by other tools as already stated, so that the structure may be readily adapted for various kinds of wood working, such as planing, grooving, smoothing and the like, or for preparing seams or cracks in ships for calking or for whatever purpose may be desired within the capabilities of the device.

On that end of the cap "3" applied to the upright portion of the body member "1" there is secured a handle "31" which may conveniently be made of yoke shape, as shown, or of any other suitable shape. The handle has a yoke portion "32" secured to the top or cap "3" and there provided with spaced studs "33" entering cavities in the top of the cover while the handle is held to the cover and body portion by a screw "34"; the studs or pins "33" permit securing the handle firmly in place by a single screw. To facilitate the guiding of the device an additional handle "35" is applied to the body member "1", this handle having a screw stem "36" while the body member has a threaded passage clear through it so that the handle "35" may be attached to the body member from either side thereof, thus adapting the tool to right and left hand manipulation.

The planer is provided with a bottom member "37", which is in the form of a frame with an opening or throat "38" there-
through conforming to the space inclosed by

the body member "1", arms "2" and plate "6". The bottom member "37" is carried by posts "39" each of which is threaded with one end tapped through the bottom member "37" and riveted thereto, as shown at "40". Applied to each post "39" is an exteriorly threaded sleeve "41" snugly fitting but capable of moving along the post and at the upper end each sleeve "41" is formed with a head "42" suitably shaped to receive a tool whereby the sleeve may be turned about its longitudinal axis. Each sleeve "41" also carries a lock nut "43" and each post "39" carries a lock nut "44". The sides of the arms "2" and body member "1" are enlarged at suitable points to form bosses "45" and these bosses are threaded for the reception of the threaded sleeves "41". By this means the bottom member "37" may be moved toward or from the lower surface of the body member by a suitable manipulation of the sleeves "41" and the parts may be locked in adjusted positions against change of their adjusted relation by the lock nuts "43" and "44". In this way the depth of cut of the cutter "30" or other tool may be adjusted and maintained or may be changed from time to time as desired.

The underface of the bottom member "37" at the front and rear in the direction of travel of the planer, is recessed as shown at "46", to receive end portions of two spring blades "47" in alinement one with the other and extended in the direction of travel of the tool, these blades being sufficiently wide to correspond to the width of cut of the cutting tool. The free ends of the blades are each connected to a rod "48" by means of a hinge connection "49" and each rod is intermediately divided with one part of the rod carrying an axially threaded stem "50" entering the other portion of the rod and carrying a lock nut "51", whereby the effective length of the rod may be varied at will and its adjustment maintained by the lock nut "51".

Rising from the top of the plate "3" is an open ended frame "52" through which extends a rock shaft "53" on which is secured a pinion "54", as by a pin "55". The rock shaft "53" is extended beyond that face of the frame "52" toward the plate "6" and is there squared or otherwise formed, as shown at "56", the squared portion receiving one end of a segment plate "57" movable across that face of the frame "52" toward the plate "6" and parallel therewith. The segment plate "57" is provided with an arc-shaped slot "58" curved on the axis of the shaft "53" as a center and this slot is traversed by a set screw "59" tapped into the frame "3" and provided with a milled head "60" for ready manipulation. In order to rock the plate "57" it is provided with a handle "61". Meshing with the pinion "54" is an-

other pinion "62" mounted within the frame "52" upon an arbor "63". Each pinion "54" carries a rock arm "64" to which that end of a corresponding rod "48" remote from the hinge "49" is pivoted by a pin "65" or otherwise flexibly connected thereto. The arrangement is such that upon rocking the segment plate "57" in one direction or the other the pair of blades "47" constituting prolongation of the bottom "37" of the planer, are bent in one direction or the other from flat relation to provide a curved working face for the bottom of the planer, whereby the planer may be effectively used upon curved surfaces, either convex or concave, as the case may be. This makes the planer particularly valuable for working on ship timbers and ship structures of various kinds, since the planer may be quickly adapted to the various curvatures found in the timbers and surfaces of ships.

The power needed to drive the cutter may be furnished from some distant point and the whole structure is capable of manufacture in such small size as to permit it to be readily carried by a single person from place to place and guided over the surfaces to be treated, the use of aluminum or of hollow construction or both permitting a very material reduction in weight without sacrifice of strength, and allowing sufficient bulk to accommodate the working parts.

While the planer is useful in various utilities, it is designed particularly and is especially adapted for work upon wooden ships or wooden parts of ships.

It is thought that the operation of the device will be sufficiently clear from the foregoing description of its construction and that any further description of its operation will be unnecessary.

Having thus described my invention, I claim as new and desire to secure by Letters Patent:

1. In a portable hand wood working device, in combination, a body member, a rotary tool carried by the body member, a bottom member forming a working face and provided with a throat for the rotary tool, and carrying means for the bottom member mounted on the body member for varying the distance of the bottom member from the body member, said carrying means comprising threaded posts fast to the bottom member, sleeves traversed by the posts and threaded through portions of the body member, and lock nuts on the sleeves and posts for adjusting and clamping the bottom member at chosen distances from the body member to thereby vary the depth of cut.

2. In a portable hand wood working device, in combination, a body member, a rotary tool carried by the body member, and a bottom member provided with a throat for the tool and adjustable bodily toward and

from the body member, said bottom member having flexible extensions in the line of travel of the device, and means for flexing said flexible extensions.

3. In a portable hand wood working device, in combination, a body member, a rotary tool carried by the body member, and a bottom member provided with a throat for the tool and adjustable bodily toward and from the body member, said bottom member having flexible extensions in the line of travel of the device, and means for flexing said flexible extensions, said last named means including extensible connections for compensating for the bodily adjustments of the body member toward and from the body member.

4. In a portable hand wood working device, in combination, a body member, a rotary tool carried by the body member, a bottom member forming the working face for the device and having a throat through which the tool may project, flexible plates forming front and rear extensions of the bottom member, carrying means between the body member and bottom member and adjustable to vary the distance of the bottom member from the body member, and devices including extensible elements and manipulating means carried by the body member and connected to the flexible plates for flexing said plates to conform to different curvatures and for holding the plates in a single plane for flat surfaces.

5. In a portable hand wood working device, in combination, a body member with spaced extensions, a side plate connected to and connecting the spaced extensions at the ends of the latter remote from the main portion of the body member, and a cap or cover joining the main portion of the body member and the side plate, a shaft journaled in the main portion of the body member and extending toward the side plate for the reception of a wood working tool between the side extensions, means for the application of power to the shaft, a separate bottom member constituting the working face of the device, adjustable means connecting the body of the device with the bottom member for varying the spacing of the bottom member from the device, flexible extensions of the bottom member constituting continuations of the working face, and means carried by the body of the device and connected to the flexible extensions for flexing them or holding them in alinement, whereby to conform the working face to either curved or plane surfaces.

6. In a portable hand wood working device, in combination, a body member having a side plate connected to and spaced therefrom, and a tool carrying shaft extending through the body member and side plate, the body member having a bore with spaced

bushings therein constituting journal bearings for the shaft and the side plate having a bushing therein constituting a journal bearing for the shaft, both the body member and the side plate having lubricant ducts, that in the body member leading to the space between the bushings and that in the plate being elongated, whereby the ducts and the bore in the body member between the bushings constitute reservoirs for lubricating material.

7. In a portable hand wood working device, in combination, a body member, means for supporting a rotary tool in the body member, a bottom member forming the

working face of the body member and provided with a throat through which an applied tool may project, means for adjusting the bottom member bodily toward and from the body member to vary the depth of cut, flexible plates projecting oppositely from the bottom member to constitute extensions thereof, manipulating means on the bottom member, and extensible and contractible connections between the manipulating means and the flexible plates for holding and flexing the latter into conformity with straight and curved surfaces.

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