

Apr. 3, 1923.

1,450,198

J. O. BAILEY

RIVETING MACHINE

Filed Oct. 26, 1921

Fig. 1.

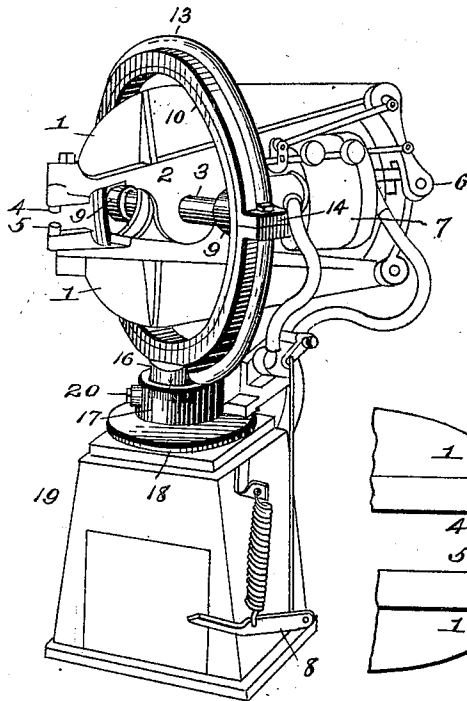


Fig. 4.

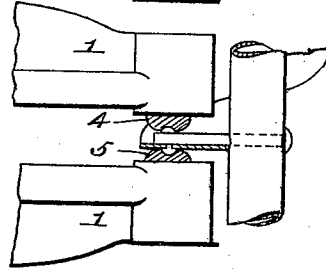


Fig. 2.

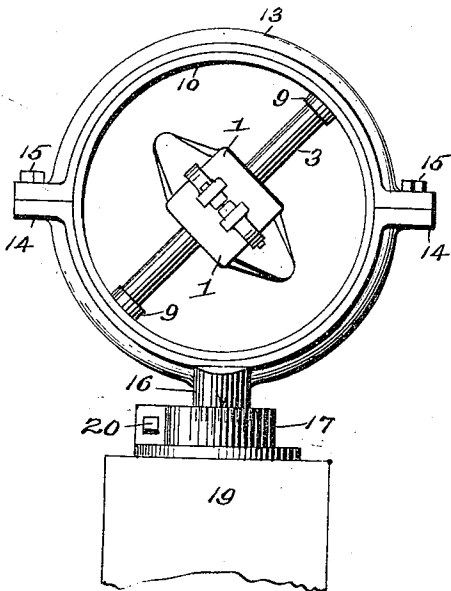
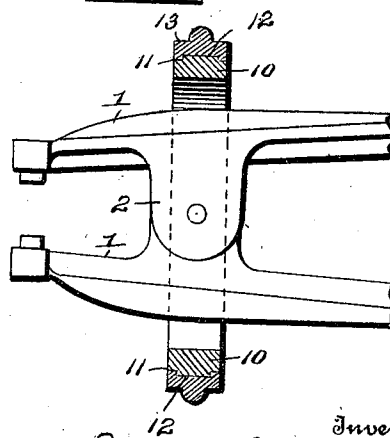


Fig. 3.



Inventor

J. O. Bailey

By

Shreve, Crow & Gordon
Attorney

UNITED STATES PATENT OFFICE.

JOSEPH OSWELL BAILEY, OF ATLANTA, GEORGIA.

RIVETING MACHINE.

Application filed October 26, 1921. Serial No. 510,518.

To all whom it may concern:

Be it known that I, JOSEPH O. BAILEY, a citizen of the United States, residing at Atlanta, in the county of Fulton and State of Georgia, have invented new and useful Improvements in Riveting Machines, of which the following is a specification.

This invention relates to riveting apparatus, more particularly it is directed to an improved automatic riveter, universally adjustable to meet riveting requirements in the construction of spiral conveyers.

One of the principal objects of this invention is to design a fluid operated jaw-type riveter for effecting the riveting operations in the construction of either continuous or sectional flight spiral conveyers, the machine being susceptible of any angular adjustment to afford true rivetal alignment of the rivet irrespective of the angle of operation.

Another important purpose of this invention is to produce a simple, efficient, and economically constructed riveting machine, capable of effectively operating in the narrow confines of the flight pitch and with the riveting jaws properly disposed to correctly align the rivet when driven through the conveyer flight.

Other important objects of this invention are to materially expedite the construction of spiral conveyers by reducing the time and labor incidental to the rivetal union of their components, to provide a machine with rivet set easily and quickly adjustable to the flight angle of either right or left hand conveyers, and, to produce a riveting machine of an extremely flexible character which will, concomitantly with the riveting operation, function to draw the conveyer flights taut about the conveyer.

With these and other objects in view, which will become apparent as the description proceeds, the invention resides in the construction, combination, and arrangement of parts, hereinafter more fully described and claimed, and illustrated in the accompanying drawings, in which like characters of reference indicate like parts throughout the several figures, of which:

Figure 1 is a perspective view of the riveting machine forming the subject matter of this invention;

Figure 2 is a fragmentary front elevation;

Figure 3 is a fragmentary sectionized de-

tail of the riveting jaws and their mounting; and

Figure 4 is a fragmentary sectionized detail, partly in elevation, illustrating the rivet-set in compressed position and securing the inner extremity of a lug used for anchoring the conveyer flight to the shaft.

Briefly stated, this invention comprises a pair of complemental jaws pivoted upon a shaft in opposed relation and having their operating ends formed with suitable rivet-sets and their power ends connected to a fluid controlled operating mechanism, the pivotal shaft of the complemental jaws being carried by an annular casting rotatably supported in a ring swivelly movable about its vertical axis.

In the construction of either continuous or sectional flight conveyers, the rivetal union of their components has always been a tedious and laborious operation owing to the continually changing angle of the conveyer flights, which rendered positionment of the rivet in true rivet alignment with the conveyer extremely difficult, and not infrequently resulted in offset riveting. It is, therefore, the aim and purpose of this invention to provide a simple mounting for the riveting jaws which will materially expedite this work, and enable the rivets to be accurately aligned and compressed with a minimum loss of time.

In the illustrated embodiment characterizing this invention, there is shown a pair of elongated complemental jaws formed with pivotal lugs 2, apertured for the passage of a shaft 3. The operating ends of jaws 1 are provided with rivet-sets 4 and 5, while their power extremities are connected by means of toggle links 6, to a fluid-operated driving mechanism 7, controlled by a foot-lever 8. This structure is of substantially standard design and has been referred to solely for the purpose of aiding the disclosure of the present invention.

In order to obtain the desired adjustment of riveting jaws 1, the extremities of shaft 3 are fitted into oppositely positioned sockets 9 formed on the inner circumference of an internal ring 10. This ring 10 is formed with a circumferential tenon 11 adapted to seat in channel 12 formed in the inner circumference of external ring 13.

Ring 13 is cast in upper and lower semi-circular sections, the extremities of which

are formed with lateral ears 14, suitably apertured for the passage of fastening elements 15. Elements 15 not only serve to unite the two sections of the external ring, but also function as set screws for locking the internal ring in fixed position, as will be manifest without further discussion.

The lower section of external ring 13 is cast with a swivel pin 16 which seats in socket 17 of swivel plate 18, the latter being suitably fastened to a base 19. If desirable, swivel pin 16 and socket 17 may be provided with appropriate calibrations to enable setting of the external ring at any predetermined angle. To secure the external ring at the desired angle, socket 17 of swivel plate 18 is provided with a set-screw 20.

With the parts assembled as described, it is evident the mounting provided affords in effect universal adjustment of the rivet-set.

In the construction of spiral conveyers, with a machine designed in accordance with the preceding, a conveyer shaft equipped with a suitable number of sectional flights is horizontally suspended within operating distance of the rivet-sets 4 and 5. Jaws 1 of the machine are then adjusted until the rivet-sets are positioned in proper rivetal alignment with the overlapping extremities of the flight sections whereupon the rivets are inserted and compressed. Obviously with the riveting jaws adjustable in this manner, true driving alignment of the rivet may be quickly and accurately obtained for any angle of conveyer flight of both right and left hand conveyers. After the riveting jaws have been rivetally positioned they are locked and remain in this position until the desired quantity of conveyers has been produced.

In addition to rivetally uniting the extremities of the sectional conveyer flights, this machine serves to draw the flights taut about the conveyer shaft, and likewise enables the several lugs securing the flights to the shaft, to be readily headed by hand; that is to say, the operator is enabled to place a rivet through the opening in lug and flight, compress the rivet, and then hold rivet-sets in compressing position thus securing the lug against movement while hand riveting its outer end, as shown in Figure 4. Heretofore it has been practically impossible to effect this operation owing to the difficulty experienced in properly securing the lug while heading its outer end to the conveyer shaft.

In conclusion it is seen that the foregoing structure produces a simple riveting machine for the construction of spiral conveyers which can easily and quickly be adjusted to any angle that riveting of the flights of the conveyer may require.

Although in the foregoing certain elements have been referred to as being best

adapted to perform the functions allotted to them, it is to be understood that various minor changes as to the arrangement of these elements, their form, etc., may be resorted to without departing from or sacrificing any of the principles of this invention.

Having thus described my invention, and without enumerating variations and equivalents, what I desire protected by Letters Patent is as set forth in the following claims.

1. A riveting machine comprising in combination, complementary power actuated riveting elements, and supporting means adjustable about vertical and horizontal axes for effecting universal adjustment of the said elements.

2. A riveting machine comprising in combination, complementary power actuated riveting jaws, and a supporting structure of separately adjustable sections having movement about a vertical and a horizontal axis, respectively, for jointly effecting universal movement of the said jaws.

3. A riveting machine comprising in combination complementary pivotally supported power actuated riveting jaws and a supporting structure, of separately adjustable sections having movement about a vertical and a horizontal axis, respectively, for jointly effecting universal movement of the said jaws.

4. A riveting machine comprising complementary pivotally supported power actuated jaws, and means to effect universal movement of the jaws, including a rotary carrier for their pivotal support, and a swivel member rotatably seating said carrier.

5. A riveting machine comprising complementary pivotally supported power actuated riveting jaws, and means to effect universal movement of the jaws including a rotary carrier for their pivotal support, and a member vertically swiveled about its vertical axis.

6. A riveting machine comprising in combination elongated complementary power actuated pivotally supported riveting jaws, and means to effect adjustment of said jaws to any rivetal alignment, including an annular carrier for the pivotal support of said jaws, and a casting rotatably seating said carrier and swiveled about its vertical axis.

7. A riveting machine comprising in combination elongated complementary power actuated pivotally supported riveting jaws, and means to effect adjustment of said jaws to any rivetal alignment, including an annular carrier for the pivotal support of said jaws, a casting rotatably seating said carrier and swiveled about its vertical axis, and means for securing both carrier and casting in a fixed position.

8. A riveting machine comprising in combination, elongated complementary power actuated riveting jaws, a shaft pivotally supporting said jaws, an annular carrier in engagement with the extremities of said shaft, and a swivelly mounted casting rotatably supporting said carrier.

9. A riveting machine comprising in combination, elongated complementary power actuated riveting jaws, a shaft pivotally supporting said jaws, an annular carrier in engagement with the extremities of said shaft, a sectional casting rotatably seating said carrier and swiveled about its vertical axis.

10. A riveting machine comprising in combination, elongated complementary power actuated riveting jaws, a shaft pivotally supporting said jaws, an annular carrier in engagement with the extremities of said shaft, a sectional casting rotatably seating said carrier, and swivelly mounted on its vertical axis, and means in connection with both casting and carrier to lock the same in adjusted position.

JOSEPH OSWELL BAILEY.

Witnesses:

H. M. HAYES,
C. W. FRAZIER.