No. 865,250. PATENTED SEPT. 3, 1907.

H. J. JAQUITH.

DEVICE FOR SAWING LAST BLOCKS.

APPLICATION FILED DEC. 17, 1906.

3 SHEETS—SHEET 1.

Fig. 2.

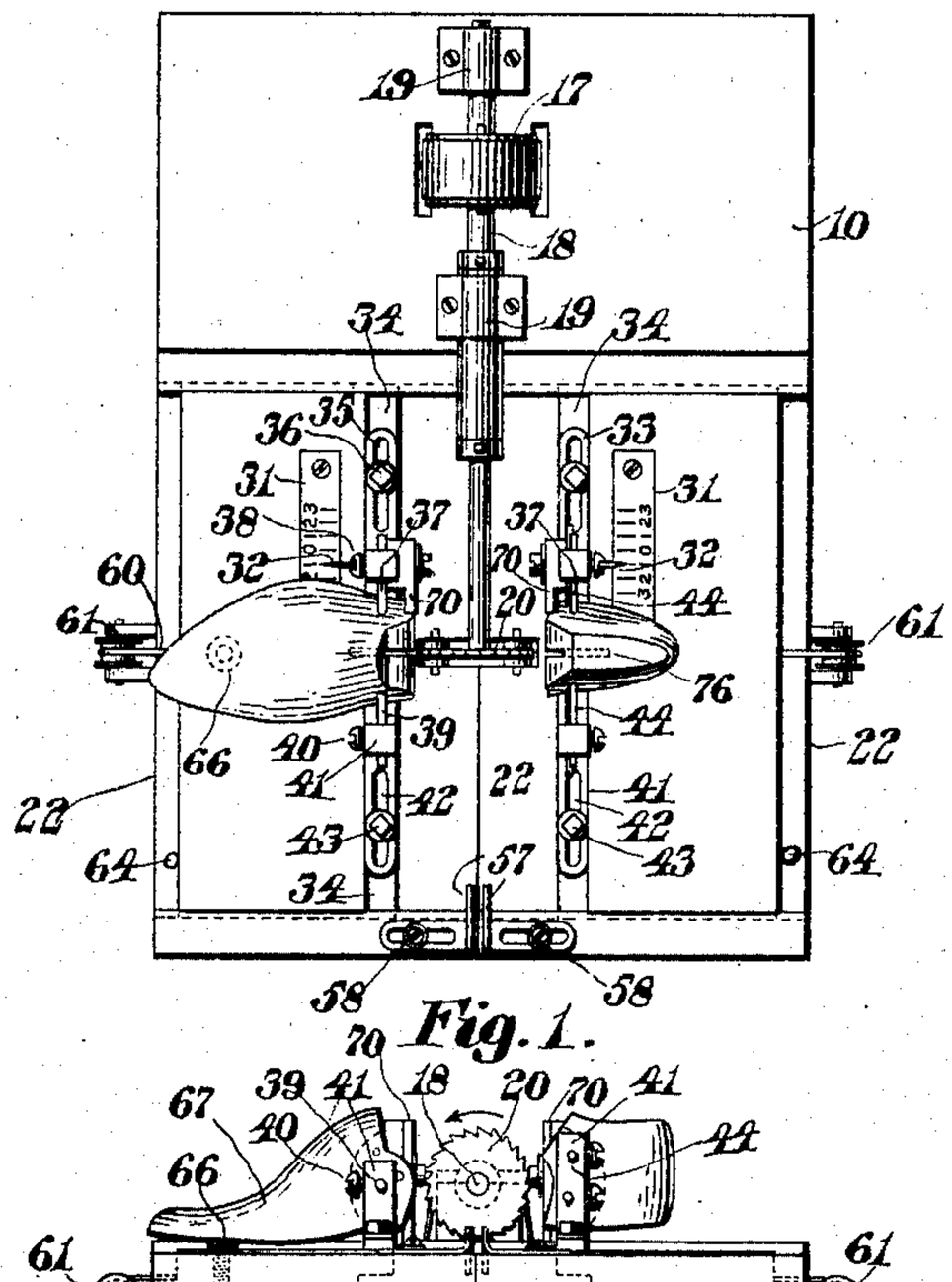
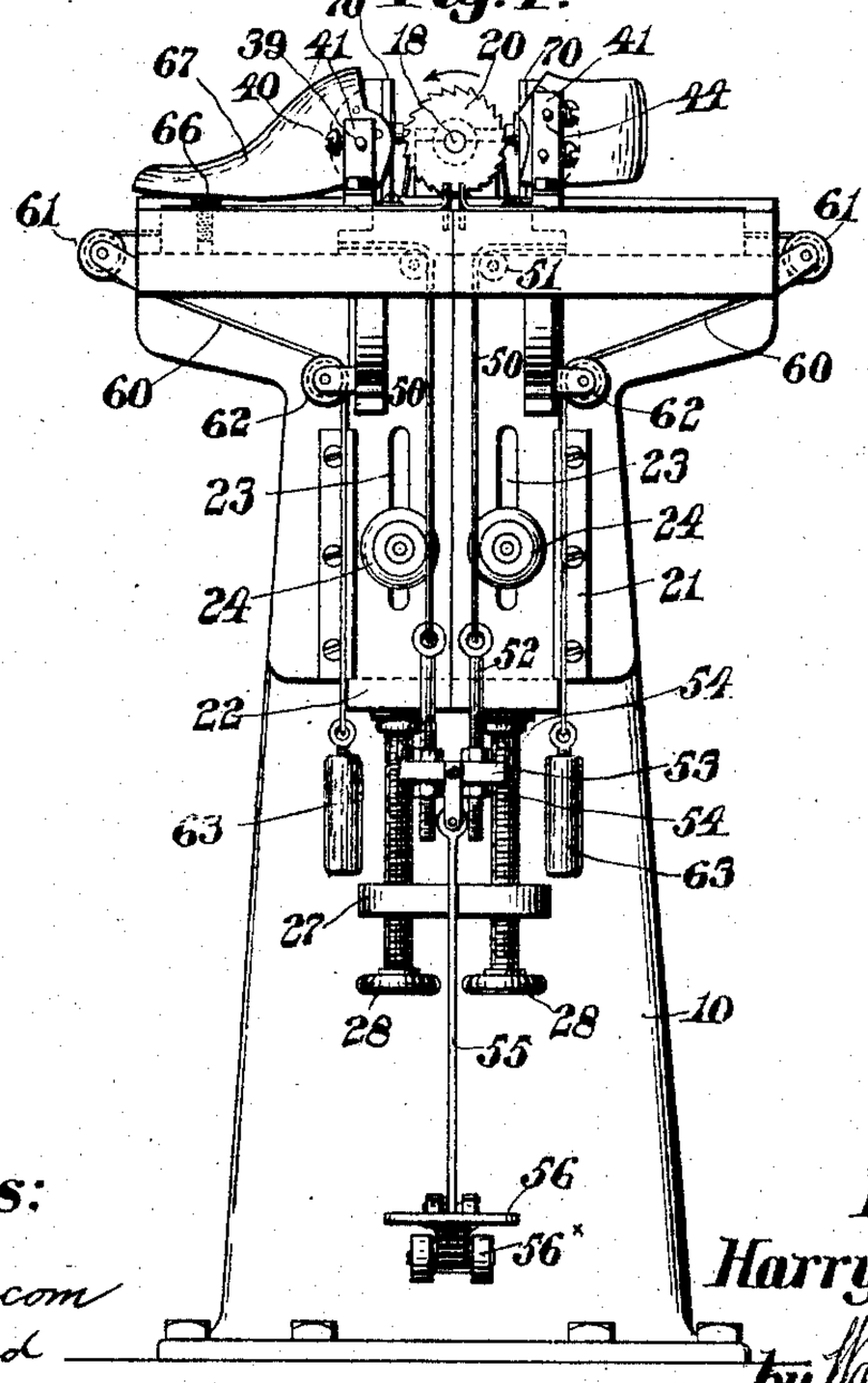


Fig. 1.



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3 SHEETS—SHEET 2.

Fig. 4.

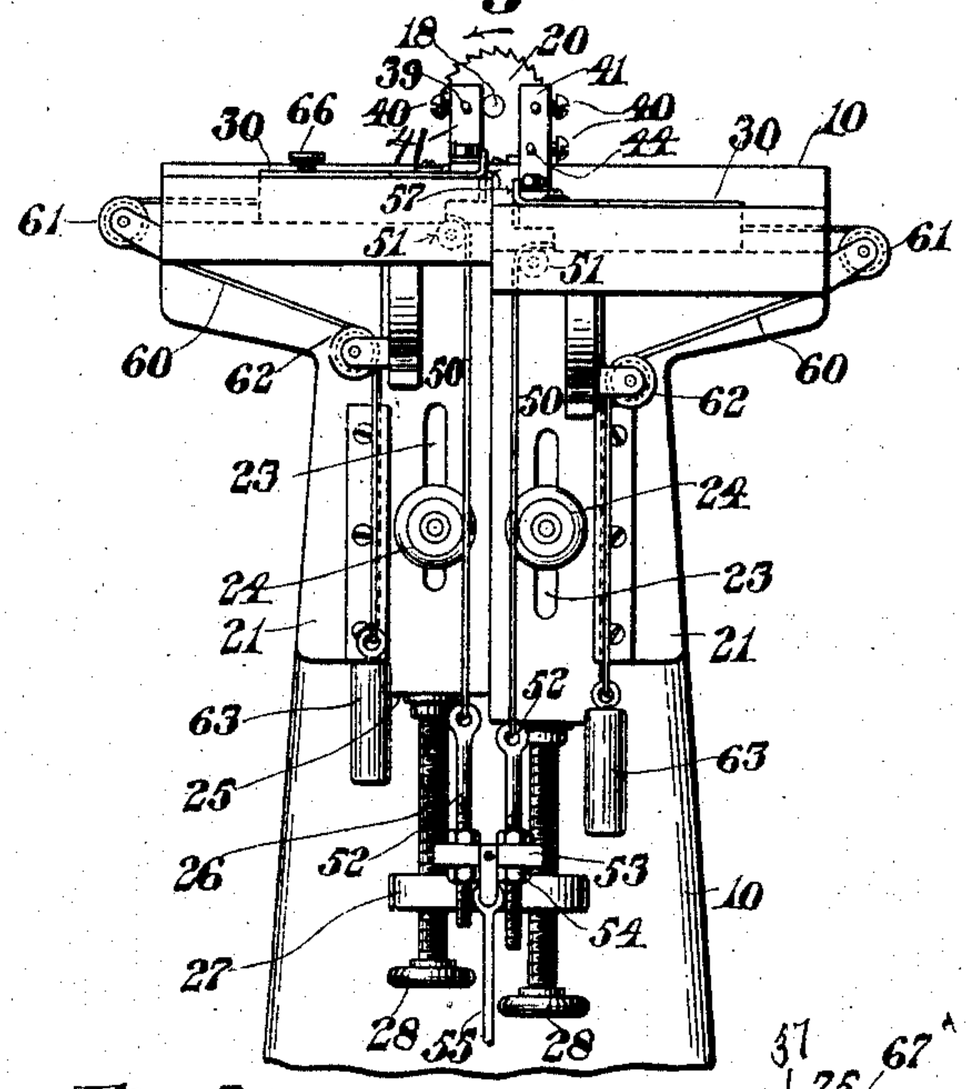
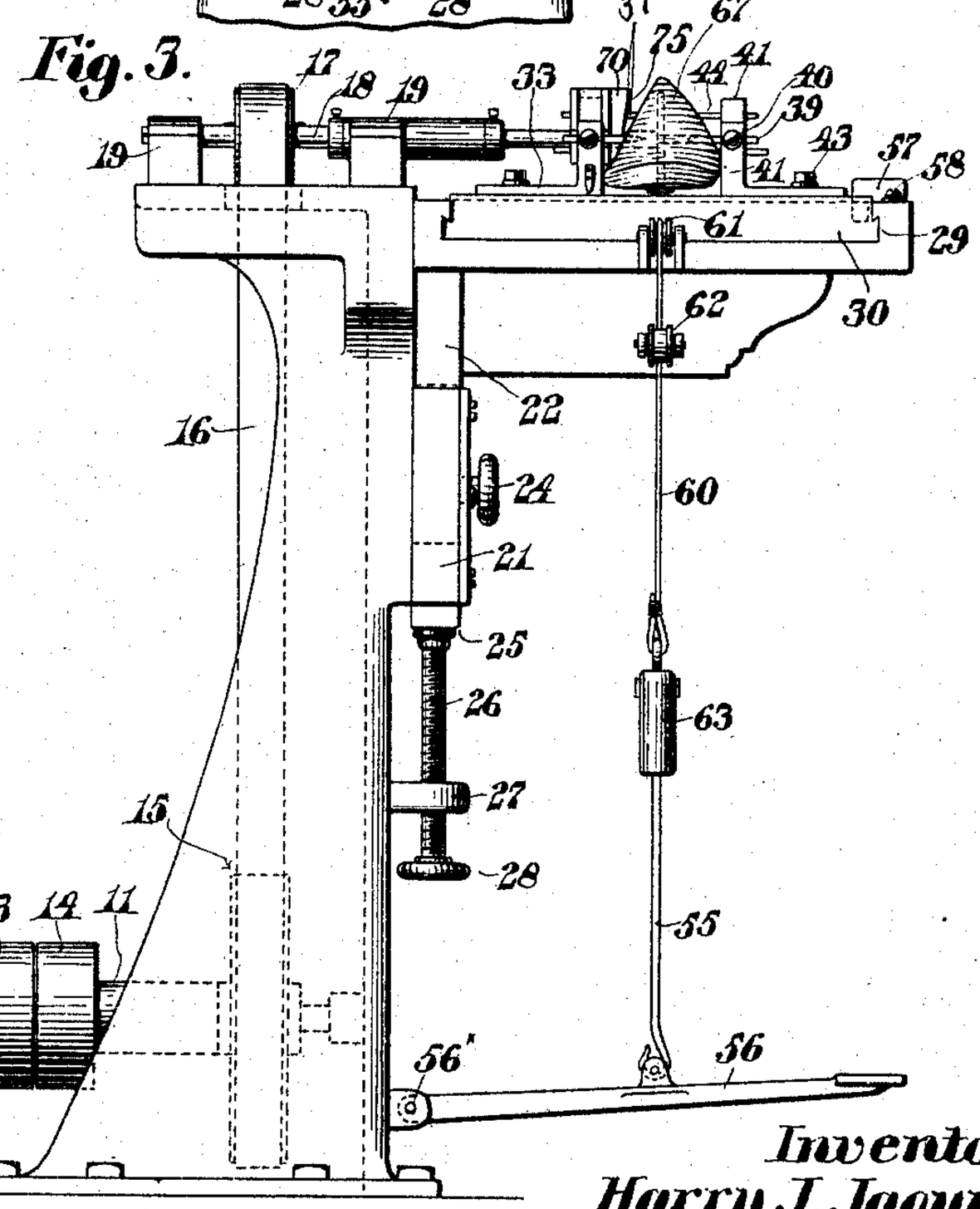


Fig. 3.



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3 SHEETS—SHEET 3.

Fig. 5.

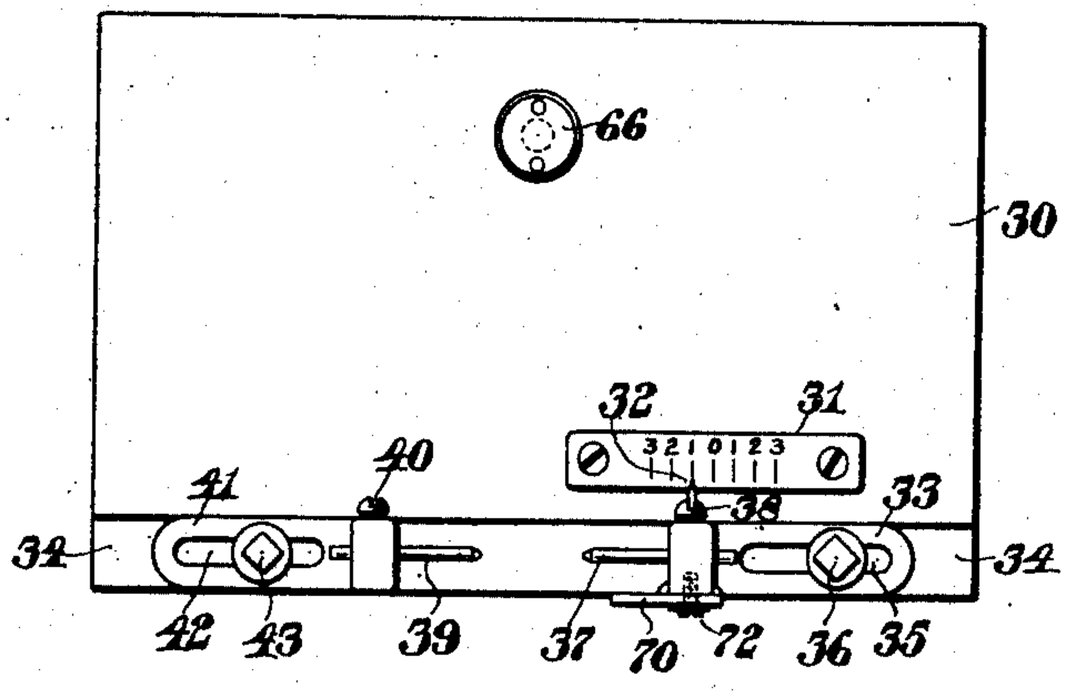


Fig. 6.

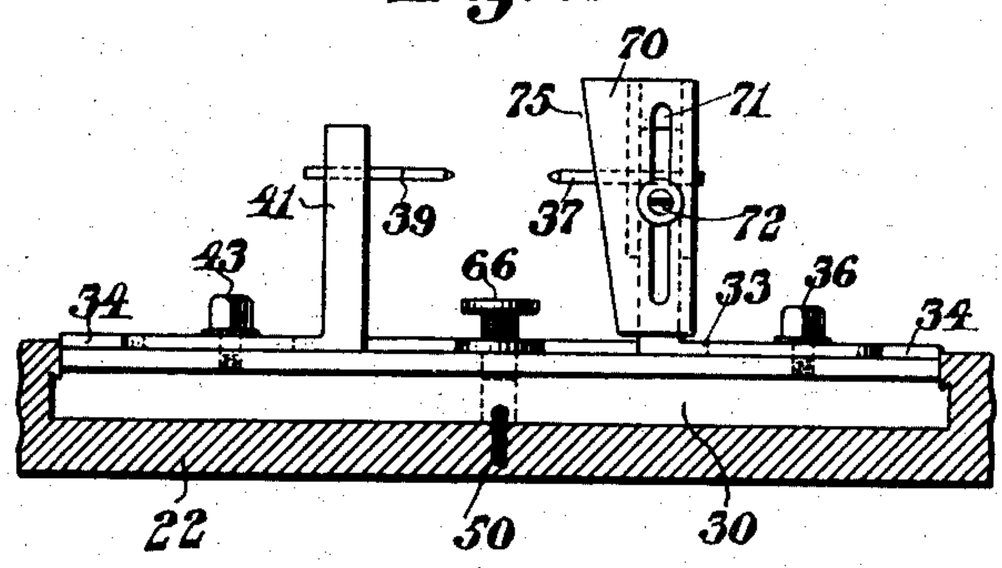


Fig. 7.

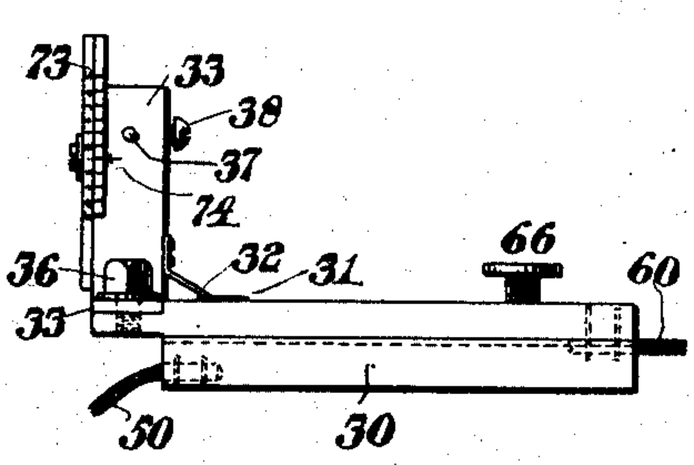
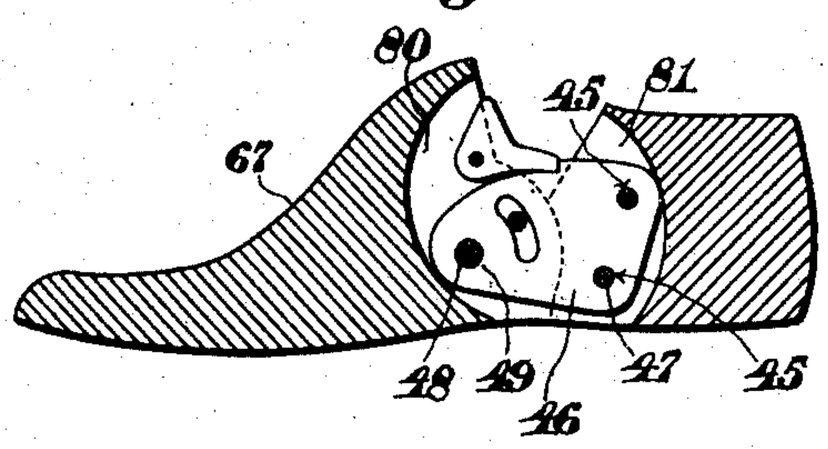


Fig. 8.



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UNITED STATES PATENT OFFICE.

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DEVICE FOR SAWING LAST-BLOCKS.

No. 865,250. Specification of Letters Patent. Patented Sept. 3, 1907.

Application filed December 17, 1906. Serial No. 348,154.

To all whom it may concern:

Be it known that I, HARRY J. JAQUITH, a citizen of the United States of America, and a resident of Boston, in the county of Suffolk and State of Massachusetts, have invented certain new and useful Improvements in Devices for Sawing Last-Blocks, of which the following is a specification.

This invention relates to apparatus for simultaneously sawing slots in the two parts of a hinged last in which subsequently the hinged plate may be inserted to connect the two parts.

When in the manufacture of lasts the last is divided after it leaves the lathe, the two parts of the divided last being intended to be connected together subsequently by a hinged plate, it is obvious that it is essential that the slots in the two parts in which the hinge plate is inserted should be in exact relation one to the other and it is to provide an apparatus which will simultaneously and accurately saw these slots in the two parts of the last which is the object of the present invention.

The invention consists in certain novel features of construction and arrangement of parts which will be readily understood by reference to the description of the drawings and to the claims to be hereinafter given.

Of the drawings: Figure 1 represents a front elevation of a circular saw and attachment therefor embodying the features of the present invention. Fig. 2 represents a plan of the same. Fig. 3 represents a side elevation of the same. Fig. 4 represents a front elevation of the upper portion of the same showing the adjustable tables at different heights. Fig. 5 represents an enlarged plan of one of the work-supporting slides. Fig. 6 represents a section through the work-supporting table and showing in elevation thereon a work-supporting slide. Fig. 7 represents an end elevation of said slide, and Fig. 8 represents a section of a hinged last provided with slots cut into the two parts thereof by this improved apparatus.

Similar characters designate like parts throughout the several figures of the drawings.

In the drawings, 10 represents a standard adapted to be bolted to the floor and having mounted in a bearing 11 therein a shaft 12 having secured to one end thereof a fixed pulley 13 and loose pulley 14 and at the other end a pulley 15 which connects by the belt 16 with a pulley 17 mounted upon a revoluble shaft 18 mounted in bearings 19. The outer end of this shaft 18 is provided with a circular saw 20 driven thereby. The front of the standard 10 is provided with suitable guides 21 in which are mounted the vertically adjustable tables 22 each of which is provided with a slot 23 through which extends the clamping bolt 24 to clamp either of the tables in adjusted position. Bearing against the under face 25 of each table is an adjusting member 26 threaded to ears 27 extending from the front of the standard 10, said threaded members 26 being operated by means of the hand wheels 28.

It is obvious from an inspection of the drawings that either of the tables 22 may be adjusted vertically and retained in adjusted position by means of the clamps 24 while the adjusting members 26 will prevent said tables from moving longitudinally on the standard 10. Each of the tables 22 is provided with a dovetailed groove 29 in which is mounted a slide 30 adjustable toward and from each other in the plane of movement of the circular saw 20.

Each of the slides 30 is provided with a scale 31 with which coöperates an index 32 secured to a bracket 33 movable transversely of said slide in a depression 34 in the upper face thereof. The member 33 is provided with a slot 35 through which the clamping bolt 36 extends to clamp the member 33 in its adjusted position. This position is regulated by means of the index 32 cooperating with the scale 31.

The upright portion of the member 33 is provided in one case with a pin 37 extending therethrough and held in adjusted position by means of the set screw 38, the purpose of said pin being to enter a hole bored transversely of the toe portion of the last and support this part of the last during the operation of sawing. Into the other end of the hole extends a corresponding pin 39 secured by the set screw 40 in the upright portion of a slidable member 41 slotted at 42 and prevented from being displaced from the depression 34 by means of the headed bolt 43. The supports for the heel portions are similar to those for the toe portion with the exception that the upright members of the brackets 33 and 41 are provided with a pair of pins 44 extending toward each other and entering the holes 45 bored transversely of the heel portion for the purpose of securing the hinge plate 46 therein by means of the holding pins 47 extending therethrough. This plate 46, when the last is completed, is hinged to the toe portion by means of the holding pin 48, extending through the hole 49, and it is this hole 49 that, during the operation of sawing, the supporting pins 39 extend into. The inner end of each of the slides 30 has secured thereto a flexible member 50 which passes over a pulley 51 and is secured to the eye bolt 52 adjustable in the member 53 and held in adjusted position by means of the nuts 54 on either side thereof.

The member 53 is connected by the link 55 with a treadle 56 pivoted at 56* to ears extending from the front of the standard 10. By depressing the treadle 56 it is obvious that the slides will be moved toward each other until they bear against the adjustable stops 57 secured in adjusted position by means of the clamping screws 58 threaded to the table 22 and extending downwardly into the groove 29 in said table in the path of said slide. To the outer end of each of the slides 30 is secured a flexible member 60 extending over rollers

61—62 and having secured at the opposite ends a counterweight 63 which is adapted to return the slides to their normal separated positions when pressure is removed from the treadle. The outward movement of said slides is limited by means of the pins 64 extending upwardly from the table 22 into the groove 30 in the path of movement of said slides. The slide adapted to support the toe during the operation of sawing is provided with an adjustable pad 66 threaded to said slide so that it has a vertical adjustment to adapt it to support the toe part 67 of the last and hold it in any angular position about the axis of said supporting pins 39.

It is obvious that with different shapes of lasts the angle in which the toe part is held during the operation will be greatly varied and it is also obvious that with different shapes of lasts sometimes it will be desirable to have one table adjusted to a greater or less height than the other and provision is therefore made to accomplish this.

When one table has been adjusted in this manner at a greater or less height than the other it is necessary to take up the slack in the flexible member 50 by means of adjusting the threaded eye 52 which may be done by this means or any other well-known means. To each upright portion of the adjustable member 33 is adjustably secured the angular guide plate 70 provided with a slot 71 through which extends the clamping bolt 72 by which said plate may be clamped in any adjusted position vertically of the upright portion of the work-supporting member 33. This plate 70 is provided with a scale 73 with which co-acts an index 74 on the upright portion of the member 33. The inclined edge 75 of said plate 70 serves as an inward guide for the sides of two parts of the last and when each of the members 70 has been adjusted vertically to the same point it is obvious that the slot 76 to be cut in the two parts of the last will correspond accurately so that when the hinge plate 46 is inserted therein and the two parts joined together thereby the face of these two parts will conform and be flush one with the other. The pins 39 are made removable with their supporting members so that in case of breakage they may be readily removed and new ones inserted therein.

In the operation of the machine after the various adjustable members have been adjusted for the size and shape of the lasts to be operated upon the operator moves the slides 41 to the front separating them from the adjustable guides 33 which when once adjusted are secured to a fixed position by means of the clamp screws 36. When thus separated the two parts of a last block are taken and the heel portion placed upon the supporting pins 44 and the toe portion on the supporting pin 39 allowing the toe end thereof to rest upon the adjustable pad 64. The operator then moves the members 41 toward the rear causing the pins 39 and 44 thereon to enter respectively the other end of the openings 49 and 45. The slides 41 are not clamped when moved in but simply are freely slidable along the groove 34. When the heel and toe portion have been moved bodily against the inclined edge 75 of the plates 70 the operator places his foot upon the treadle 56 and depresses it to cause the slides 30 to be moved toward each other until their inner faces abut the clamps 57 previously adjusted to any desired position, as has heretofore been described. This movement of the slides 30 inwardly in the plane of movement of the saw 20 to which power has been applied to cause it to revolve at this time causes the saw to enter simultaneously the heel and toe portion and cut in each of these parts a slot 80 and 81, as shown in Fig. 8, suitable for the reception of the hinge connecting plate 46 as shown in said figure. As soon as the slides reach their limit of movement by coming in contact with the adjustable stops 57 the sawing is completed and the operator removes his foot from the treadle and permits the weights 63 to return the slides into their normal positions. When this has been done the supports 41 are moved along the depressions 34, thereby removing their pins 39 and 44 from the toe and heel parts of the lasts. These parts of the last may then be removed from the supporting pins 39—44 of the rear members 33 and a new last placed in position thereon and the operation repeated. It is believed that without any further description the operation of the invention will be thoroughly understood and that the advantages of an apparatus of this nature wherein articles of irregular forms such as lasts may be supported on slides adapted to simultaneously move toward each other into position to be operated upon by a revoluble circular saw will be fully apparent.

Having thus described my invention, I claim:

1. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; supports upon each of said slides for holding the articles to be operated upon; and means for moving said slides simultaneously toward each other into position for the articles thereon to be acted upon by said saw.

2. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; supports upon said slides for holding the articles to be acted upon; and a treadle connected to said slides for moving them simultaneously toward each other into position for the articles supported thereby to be acted upon by said saw.

3. The combination with a circular saw; of two slides movable in the plane of movement of said saw; supports upon said slides for holding the articles to be acted upon; means for moving said slides simultaneously toward each other into position so that the articles may be acted upon by said saw; and means for simultaneously moving said slides away from said saw.

4. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; supports upon said slides for holding the articles to be operated upon; a vertically adjustable table for each of said slides; and means for moving said slides simultaneously toward each other into position for the articles thereon to be acted upon by said saw.

5. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; supports upon said slides for holding the articles to be operated upon; a vertically adjustable table for each of said slides; means for retaining said table in adjusted position; and means for moving said slides simultaneously toward each other into position for the articles thereon to be acted upon by said saw.

6. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; supports upon said slides for holding the articles to be operated upon; means for moving said slides simultaneously toward each other into a position for the articles thereon to be acted upon by said saw; and stops to limit said movement of said slides.

7. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; supports upon said slides for holding the articles to be operated upon; means for moving said slides simultaneously toward each other into a position for the articles thereon to be acted upon by said saw; and adjustable stops to limit said movement of said slides.

8. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; a fixed work support at one side of each slide; a movable work support at the opposite side of said slide coöperating with said fixed support; and means for moving said slides simultaneously toward each other into position for the articles thereon to be acted upon by said saw.

9. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; an adjustable support at one side of each slide; means for securing said adjustable supports in their adjusted position; a movable support on the opposite side of said slide coöperating with each adjustable support and means for moving said slides simultaneously toward each other into position for the articles thereon to be acted upon by said saw.

10. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; an adjustable support at one side of each slide; means for securing said adjustable supports in their adjusted position; a scale on said slides to determine the position of each of said adjustable supports; a movable support on the opposite side of said slide coöperating with each adjustable support and means for moving said slides simultaneously toward each other into position for the articles thereon to be acted upon by said saw.

11. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; means for simultaneously moving said slides toward each other; an adjustable support at one side of each slide; means for securing said adjustable supports in their adjusted position; a scale extending transversely of said slides; an index on said adjustable supports coöperating with said slides; and a movable support coöperating with each adjustable support.

12. The combination with a revoluble circular saw; of two slides movable toward and from each other in the plane of movement of said saw; members movable transversely of said slides; adjustable pins supported by said members extending toward each other in alinement on either side of the path of said saw; and means for simultaneously moving said slides lengthwise into position for the work to be operated upon by said saw.

13. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; members movable toward and from each other transversely of said slides; adjustable pins supported by said members extending toward each other in alinement on either side of the path of said saw; means for securing said pins therein; and means for simultaneously moving said slides lengthwise into position for the work to be operated upon by said saw.

14. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; an adjustable support at one side of each slide; a work gage secured to each adjustable support; means for securing said adjustable supports in their adjusted position; a scale extending transversely of said slides; an index on said adjustable supports coöperating with said slides; a movable support at the opposite side of each slide coöperating with each adjustable support; and means for simultaneously moving said slides lengthwise into position for the work to be operated upon by said saw.

15. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; an adjustable support at one side of each slide; a work gage secured to each adjustable support and having an inclined side; means for securing said adjustable supports in their adjusted position; a scale extending transversely of said slides; an index on said adjustable supports coöperating with said slides; a movable support at the opposite side of each slide coöperating with each adjustable support; and means for simultaneously moving said slides lengthwise into position for the work to be operated upon by said saw.

16. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; an adjustable support at one side of each slide; an adjustable work gage secured to each adjustable support and having an inclined side; means for securing said adjustable supports in their adjusted position; a scale extending transversely of said slides; an index on said adjustable supports coöperating with said slides; a movable support at the opposite side of each slide coöperating with each adjustable support; and means for simultaneously moving said slides lengthwise into position for the work to be operated upon by said saw.

17. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; an adjustable support at one side of each slide; a work gage secured to each adjustable support; means for securing said gage in adjusted position; means for securing said adjustable supports in their adjusted position; a scale extending transversely of said slides; an index on said adjustable supports coöperating with said slides; a movable support at the opposite side of each slide coöperating with each adjustable support; and means for simultaneously moving said slides lengthwise into position for the work to be operated upon by said saw.

18. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; an adjustable support at one side of each slide; an adjustable work gage secured to each adjustable support; a scale on said adjustable work gage; an index on said adjustable support; means for securing said adjustable supports in their adjusted position; a scale extending transversely of said slides; an index on said adjustable supports coöperating with said slides; a movable support at the opposite side of each slide coöperating with each adjustable support; and means for simultaneously moving said slides lengthwise into operative position for the work to be operated upon by said saw.

19. The combination with a revoluble circular saw; of two slides movable in the plane of movement of said saw; supports on said slides for holding the articles to be operated upon; an adjustable table for each of said slides; a treadle; a flexible connector interposed between said treadle and each slide; and means for taking up the slack in said flexible connector.

20. The combination with a revoluble circular saw; of two work supports adapted to hold the articles to be operated upon in the plane of movement of said saw; and means for simultaneously moving said articles and saw into position for the latter to operate upon the former.

21. The combination with a revoluble circular saw; of two tables adapted for vertical adjustment independent of each other; a work support on each table on either side of the saw mandrel adapted to hold the work to be operated upon by said saw; and means for bringing said saw and the work on each support into position whereby alined slots may be cut in both articles.

22. The combination with a revoluble circular saw; of two pairs of separated work supports each pair of which is on an opposite side of the saw mandrel from the other, and the members of each pair of which are on opposite sides of the plane of movement of said saw and are adapted to hold an article; and means for bringing said saw and articles on each pair of supports into position whereby alined slots may be cut in both articles.

23. The combination with a revoluble circular saw; of two pairs of separated work supports each pair of which is on an opposite side of the saw mandrel from the other, and the members of each pair of which are on opposite sides of the plane of movement of said saw and are provided with oppositely opposed pins each pair of which are adapted to enter opposite ends of a hole in an article to be operated upon; and means for bringing said saw and articles on each pair of supports into position whereby alined slots may be cut in both articles.

24. The combination with a revoluble circular saw; of two slides on opposite sides of the saw mandrel and movable in the plane of movement of said saw; a pair of separated work supports on each slide provided with oppositely opposed pins each pair of which are adapted to enter a hole in an article to be operated upon; and means for bringing said saw and the work on each support into position whereby alined slots may be cut in both articles.

25. The combination with a revoluble circular saw; of two slides on opposite sides of the saw mandrel and movable in the plane of movement of said saw; a pair of sep-

arated work supports on each slide provided with oppositely opposed pins each pair of which are adapted to enter a hole in an article to be operated upon; a table for each slide; means for adjusting the height of either table independently of the other; and means for bringing said saw and the work on each support into position whereby alined slots may be cut in both articles.

26. The combination with a revoluble circular saw; of two adjustable work supports, each support consisting of two separated members on opposite sides of the plane of movement of said saw; and means for bringing said saw and the work on each support into position whereby alined slots may be cut in both articles simultaneously.

Signed by me at Boston, Mass., this 14th day of December, 1906.

HARRY J. JAQUITH.

Witnesses:
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