(No Model.) 2 Sheets—Sheet 1.

C. H. BROWN & H. W. MEYER.

HUB MORTISING MACHINE.

No. 345,766. Patented July 20, 1886.

Fig. 1.

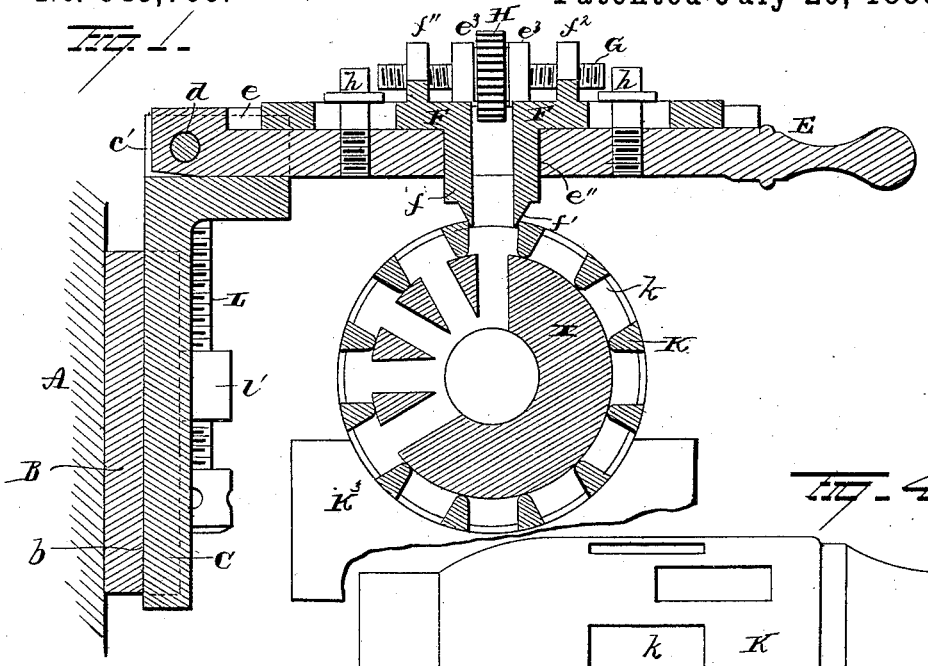


Fig. 4.

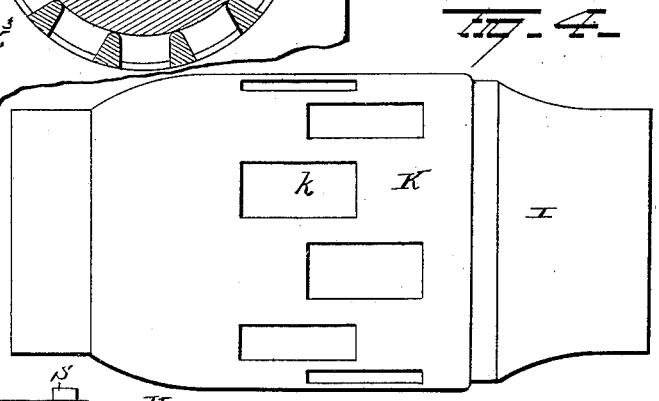


Fig. 2.

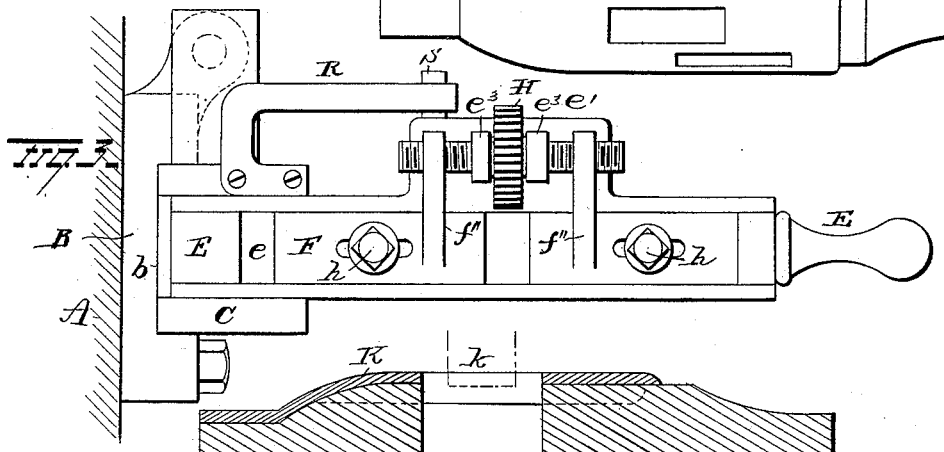
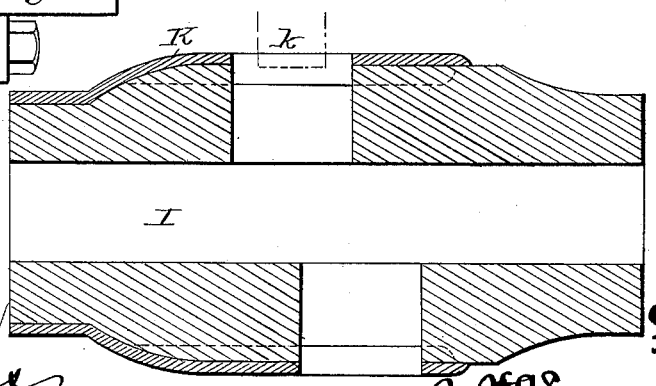


Fig. 5.



WITNESSES

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(No Model.) 2 Sheets—Sheet 2.

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HUB MORTISING MACHINE.

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Fig. 2.

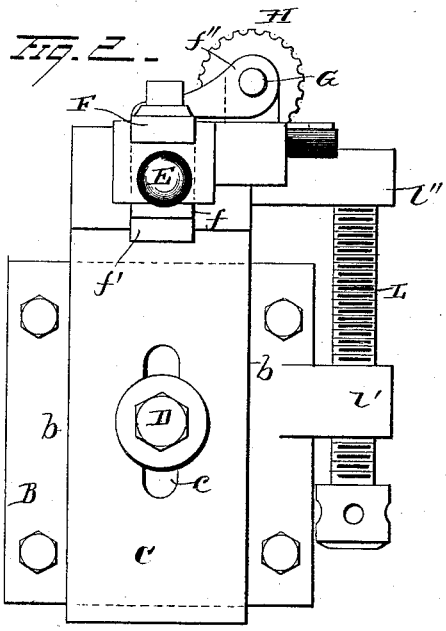


Fig. 6.

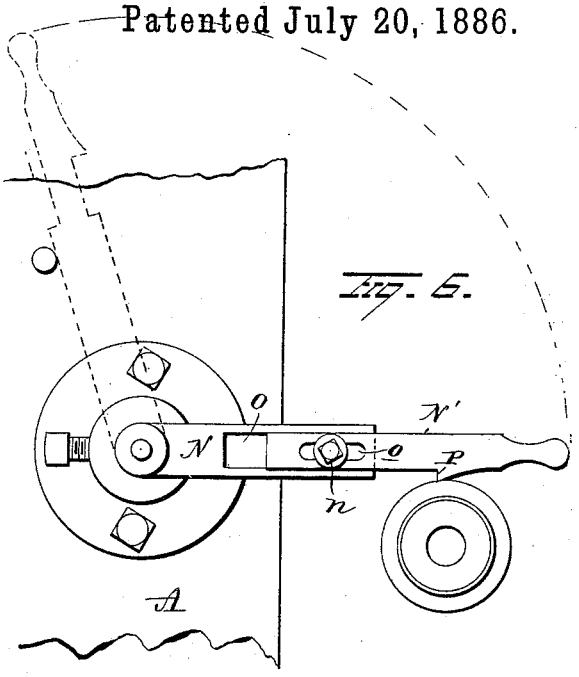
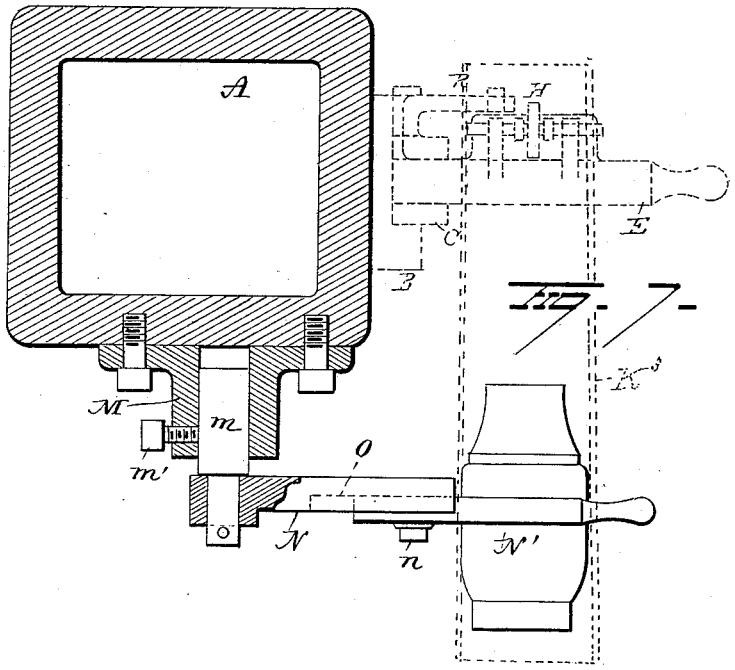


Fig. 7.



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HUB-MORTISING MACHINE.

SPECIFICATION forming part of Letters Patent No. 345,766, dated July 20, 1886.

Application filed March 5, 1886. Serial No. 194,130. (No model.)

To all whom it may concern:

Be it known that we, CHARLES H. BROWN and HENRY W. MEYER, of Dayton, in the county of Montgomery and State of Ohio, have invented certain new and useful Improvements in Hub-Mortising Machines; and we do hereby 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.

Our invention relates to an improvement in attachments for hub-mortising machines.

In the manufacture of hubs provided with shell-bands surrounding that portion of the hub in which the spoke sockets or mortises are formed, it has been found difficult to cast the shell-bands with spoke sockets or mortises which would exactly register with the sockets or mortises in the wood portion of the hub. To overcome this objection it is found desirable to adjust the shell-band on the hub before mortising it for the spokes.

The object of our present invention is to provide means for holding the hub in convenient positions for boring and mortising, so that the bit and chisel may be centered by the margins of the spoke-sockets in the shell-band, and thereby prevent any variance between the spoke-sockets in the hub and those in the shell-band.

With these ends in view our invention consists in certain features of construction and combinations of parts, as will be hereinafter described, and pointed out in the claims.

In the accompanying drawings, Figures 1, 2, and 3 represent, respectively, a vertical section and front and top plan views of the attachment for holding the hub in position for the chisel. Figs. 4 and 5 represent, respectively, outside and sectional views of a hub with its shell-band; and Figs. 6 and 7 represent views in side elevation and top plan of the attachment for holding the hub in position to be bored, the position of the former mentioned attachment being shown in Fig. 7 by dotted lines.

A represents a column on which the mortising-machine (not shown) is supported. To the front of the column A is bolted or otherwise secured a bed-plate, B, provided on its face with a vertical groove, *b*, in which the mortising attachment support C is secured. The latter is conveniently secured in the grooves *b* by a set-screw, D, which extends through an elongated slot, *c*, in the support C, and into the bed-plate B, thereby securing the support C in vertical adjustment to the bed-plate.

In the upper end of the support C is a groove or recess, *c'*, extending outwardly from the face of the column A, in which groove the rear end of the forwardly-extending lever E is pivotally secured, preferably by means of a pin, *d*, extending through the end of the lever and through the top of the support C. The support C is extended forwardly at the top to give the lever E a more extended bearing in a horizontal position. The lever E is provided with a groove or channel, *e*, extending longitudinally along its upper face, and with a laterally-extending bracket-like projection, *e'*, formed integral therewith or rigidly secured thereto. The lever E is further provided with a vertical centrally-located elongated slot or opening, *e''*. A pair of sliding bars, F, having depending jaws *f* on their adjacent ends, are adapted to fit and slide in the groove *e* on the face of the lever E. The jaws *f* extend downwardly through the opening *e''*, and are provided on their lower ends with knife-edge lips *f'*, adapted to enter the spoke-openings in the shell-band.

The sliding bars F, with their jaws, are operated by means of a right-and-left screw, G, mounted in a pair of lugs, e^3, secured to the projection *e'*, and working in threaded perforations formed in laterally-projecting arms or lugs *f''*, secured to the bars F.

A milled wheel, H, is secured on the screw *f*, at its center, for convenience in turning the screw, and a pair of set-screws, *h*, extending downwardly through elongated openings in the bars F into the lever E, serve to lock the bars F in longitudinal adjustment.

I represents the wood portion of a hub, and K the metallic shell-band which surrounds it. The band K is provided with a series of spoke-holes, *k*, and it is through the holes *k* that the wood portion of the hub is to be bored and mortised. The hub is supported upon a firm support, K^3. (Shown in Fig. 1 and in dotted lines in Fig. 7.) Instead of this table or trough

K^3, other devices can be employed for supporting the hub beneath the lever E, and is locked against a rotary motion during the process of mortising by means of the knife-edge lips of the jaws *f*, which, as before observed, engage the opposite edges of the holes *k* in the shell-band. The said jaws also serve to guide the chisel into the holes *k*, or to center the holes, so that the chisel will work closely up to the edges of the holes in the band. The longitudinal movement of the hub is determined by the engagement of the edges of the knife-edge lips with the ends of the holes in the shell-band. A spring, R, has one end secured to the support C, and its free end pressing on a pin or lug, S, attached to the lever E, for holding the lever in depressed adjustment. The vertical adjustment of the lever-support is preferably made by a screw, L, working in a laterally-extending lug, *l*, on the bed-plate B, and impinging against a projection, *l''*, on the lever-support. This vertical adjustment of the lever-support, in conjunction with the longitudinal adjustment of the sliding bars F, serves to adjust the attachment to hubs of any diameter within certain desirable limits, and the adjustment of the said sliding bars F adapts the attachment to spoke-holes of different sizes.

To enable the mortiser to work to advantage, it is desirable that the wood portions of the hubs shall be bored at the center of the holes in the shell-band; and to hold the hub in position for boring within convenient reach of the mortiser, a second attachment is secured to the column A of the mortiser, as follows: A socket-plate, M, is bolted or otherwise secured to the side of the column A at a point in nearly or quite a horizontal plane with the attachment above described. In the socket of the plate M a pintle rod or bar, *m*, is secured in longitudinally-sliding adjustment, a set-screw, *m'*, being located in the side of the plate adapted to impinge against the pintle-bar and lock it in desired adjustment. On the other end of the pintle-bar *m* is loosely secured one end of an extensible lever, N N'. The handle-section N' of the lever is adapted to fit and slide in a groove, O, formed in the section N. A set-screw, *n*, extending through an elongated slot, *o*, in the section N' and into a perforation in the section N, serves to lock the two sections N N' in the desired extended adjustment. The section N' is provided with a depending sharp-edged projection, P, adapted to enter the holes in the shell-band, and by engagement with their face or faces hold the hubs in a position to be bored exactly at the center of the proposed mortises.

It is evident that slight changes might be resorted to in the form and construction of the several parts described without departing from the spirit and scope of our invention; hence we do not wish to limit ourselves strictly to the construction herein set forth; but,

Having fully described our invention, what we claim as new, and desire to secure by Letters Patent, is—

1. In a hub-mortising machine, the combination, with a support for a hub and a metal band surrounding the hub and having openings therein, of lever attachments engaging the band surrounding the hub for holding the latter in position for boring and mortising, substantially as set forth.

2. The combination, with a hub-mortising-machine support, of a device for supporting the hub, a lever having an adjustable jaw, the latter adapted to engage the edge of the spoke-holes in the shell-band and hold the hub in a position for boring, and a lever attachment adapted to engage the edges of spoke-holes in the shell-band and hold the bored hub in a position for mortising, substantially as set forth.

3. In an attachment for hub-mortising machines, the combination, with a lever secured to the support in rocking adjustment, of a holding-jaw adjustably secured to the lever and extending downwardly therefrom to engage the hub, substantially as set forth.

4. In an attachment for hub-mortising machines, the combination, with a lever secured to the mortiser-support in vertical adjustment, of a pair of holding-jaws secured to the lever in horizontal adjustment, the said jaws extending downwardly from the lever for engaging the hub, substantially as set forth.

5. The combination, with the lever secured to the mortiser-support in a vertical and a rocking adjustment, and a device for supporting the hub, of a pair of holding-jaws extending downwardly from the lever, and provided with knife-edges adapted to engage the edges of the holes in the shell-band on a hub, substantially as set forth.

6. In an attachment for hub-mortising machines, the combination, with the spring-pressed lever secured to the mortiser-support, of the holding jaws mounted on the lever and the right-and-left screw engaging said jaws, substantially as set forth.

7. The combination, with the lever secured to the mortiser-support in rocking adjustment, and a device for supporting a hub, of the sliding jaw-bars secured in the groove or channel in the lever, and the set-screws for locking them in the desired horizontal adjustment, substantially as set forth.

In testimony whereof we have signed this specification in the presence of two subscribing witnesses.

CHAS. H. BROWN.
HENRY W. MEYER.

Witnesses:
CHARLES E. SWADENER,
J. N. LYLE.