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F. B. COCKBURN ET AL

1,777,603

LATHE BED

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2 Sheets-Sheet 1

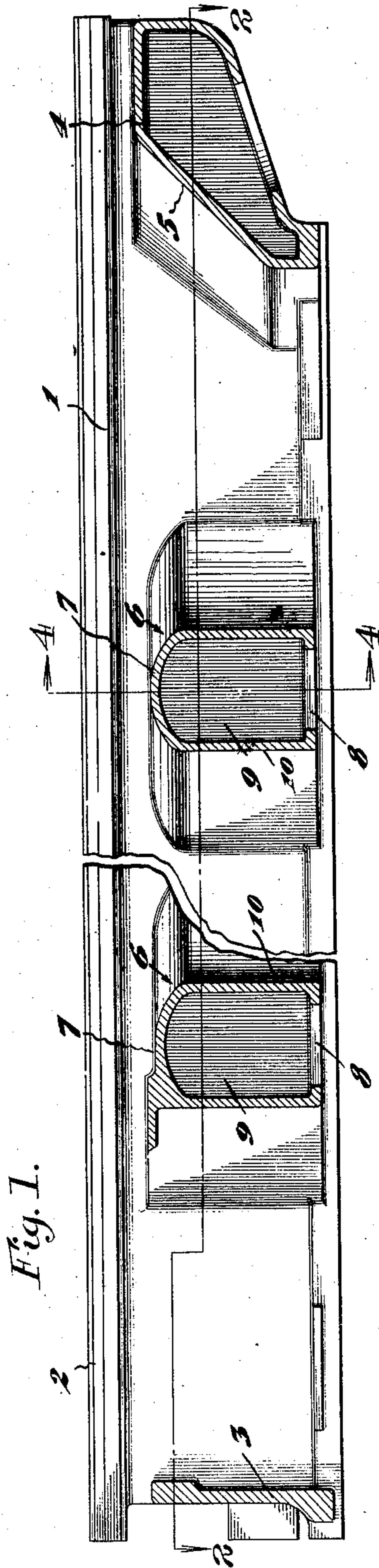


Fig. 4.

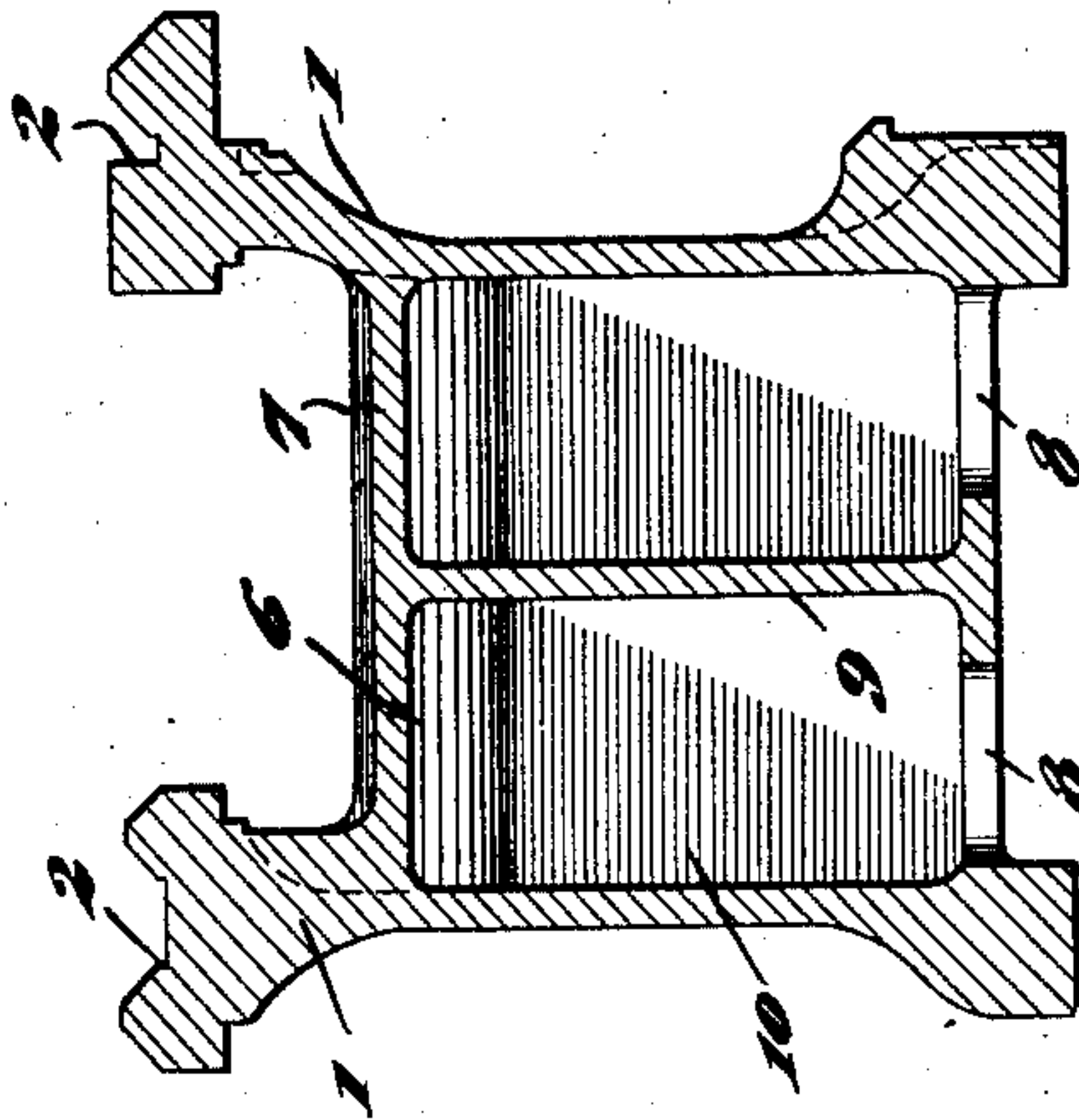
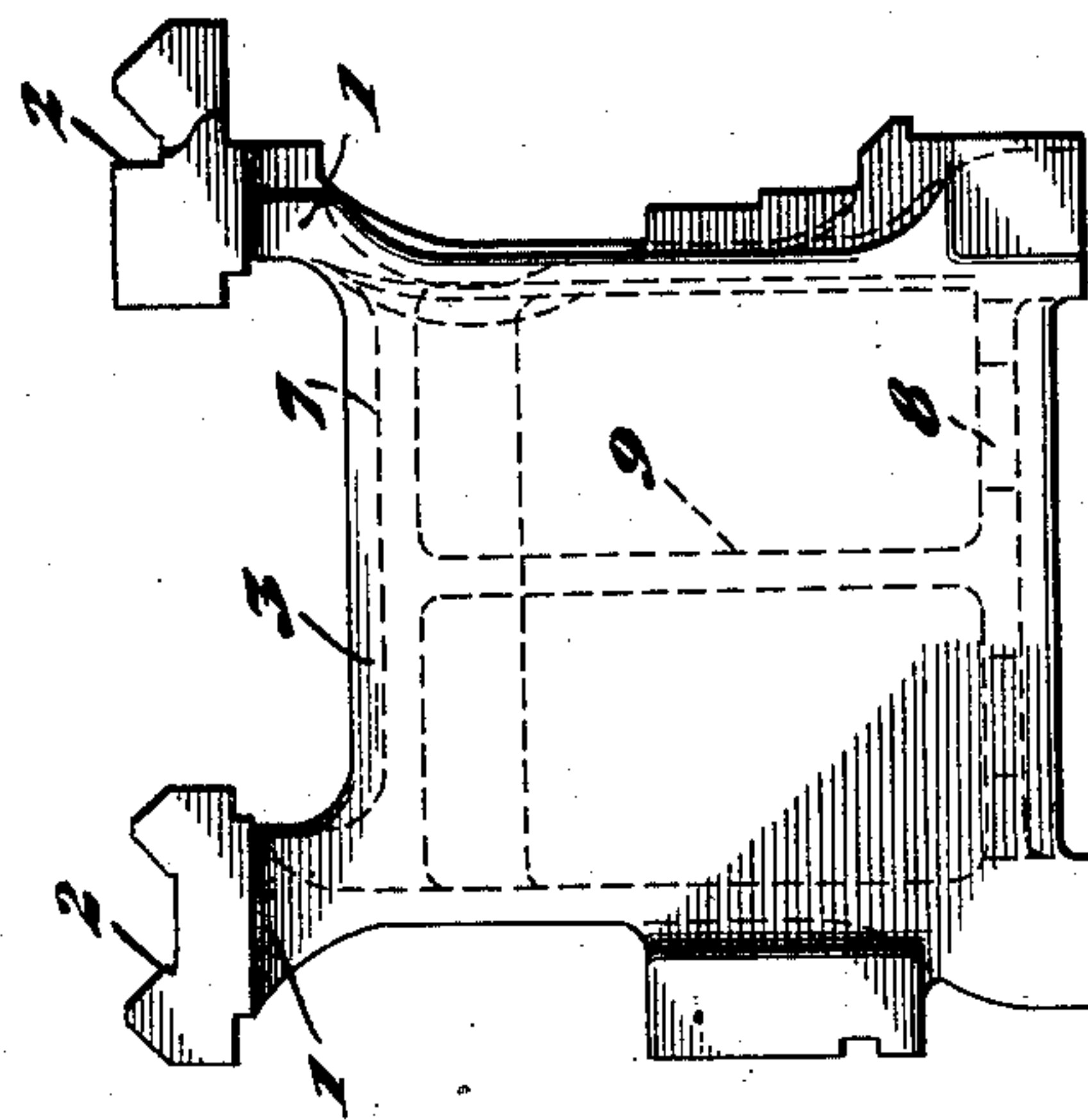


Fig. 3.



Inventor

Francis B. Cockburn  
Herman J. Breitbach  
Wm. W. Wark

By

Attorneys

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Fig. 2.

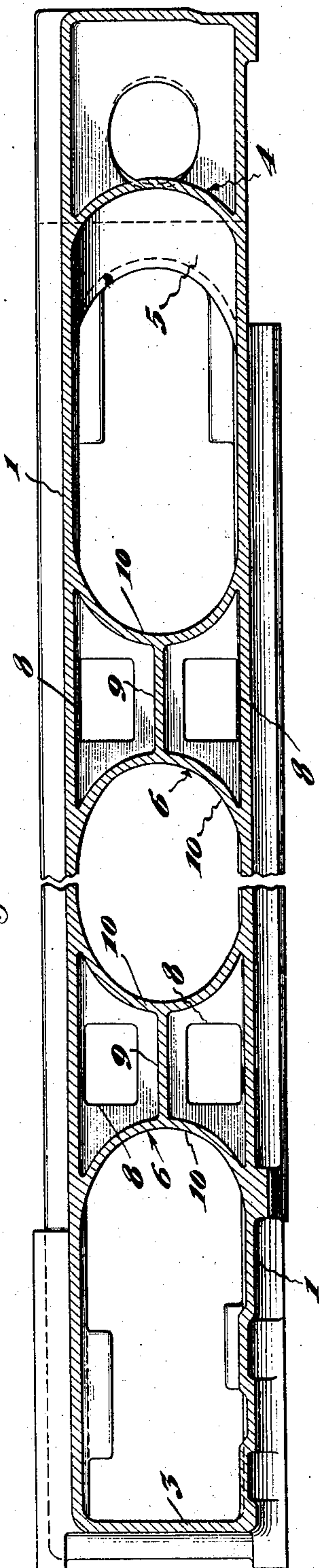
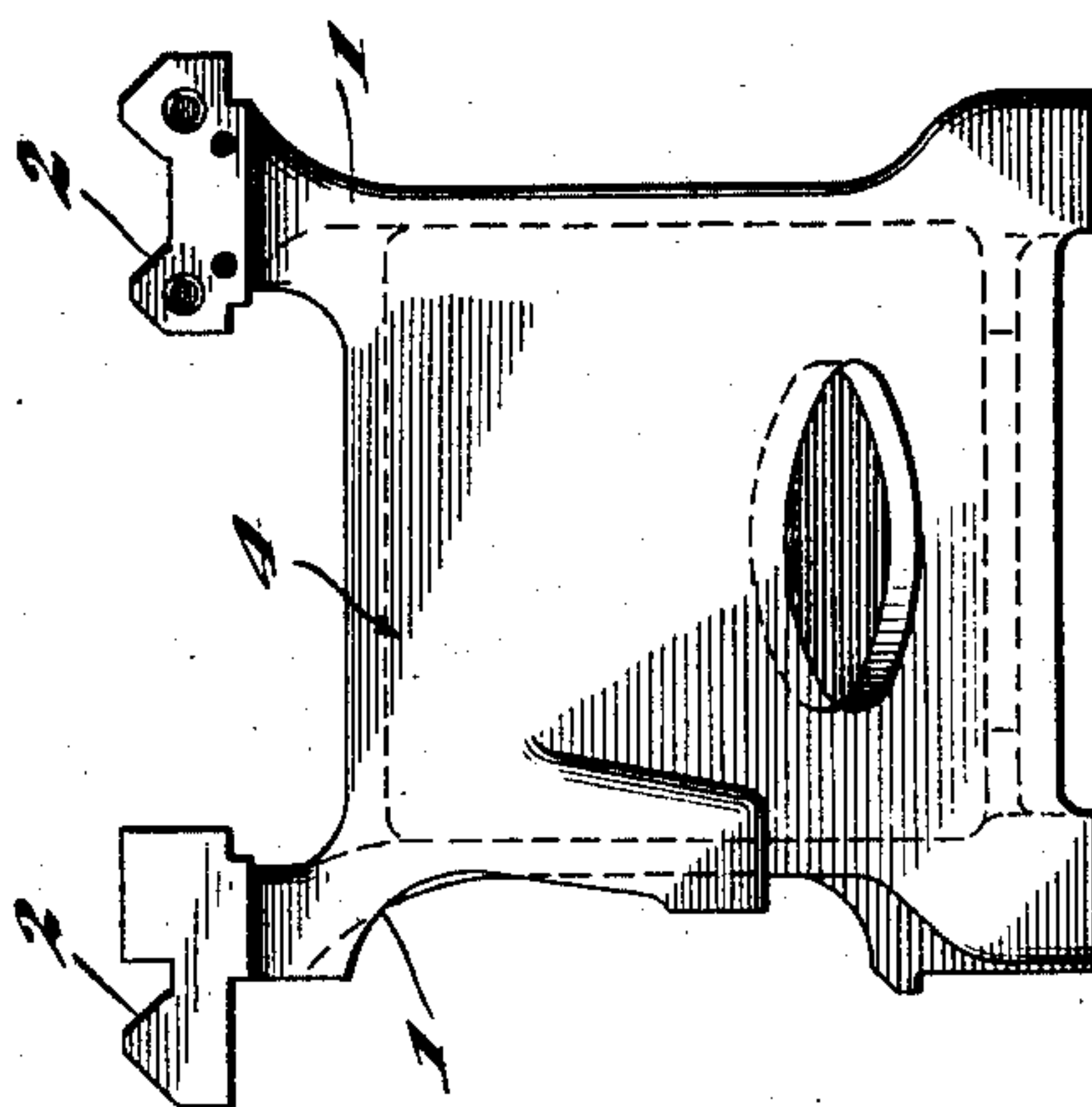


Fig. 5.



Inventors

Francis B. Cockburn  
Herman J. Breitenbach

By

Ward & Ward

Attorneys



## UNITED STATES PATENT OFFICE

FRANCIS B. COCKBURN AND HERMAN J. BREITENBACH, OF CINCINNATI, OHIO, ASSIGNORS TO THE LODGE & SHIPLEY MACHINE TOOL COMPANY, OF CINCINNATI, OHIO, A CORPORATION OF OHIO

## LATHE BED

Application filed August 13, 1928. Serial No. 299,178.

This invention relates to improvements in lathe beds and the like structures for machine tools constituting a hollow body having spaced side or rail walls providing tracks or ways for supporting the tool members as head stock, tail stock, and carriage, the side walls integrally joined by webs or septum walls of the particular formation to give stability to the structure.

The invention particularly relates to the construction of a bed which will more firmly resist and withstand torsional strains and stresses as well as vertical or bending strains to which the structure is subjected.

It consists in connecting the side or rail walls intermediate of their length with a plurality of hollow struts, each strut open at its base and having vertical walls flaring or curved outwardly at their ends, joining with the side or rail walls to provide a strut of greater width at its juncture with the side walls than in the center. The several struts form oblong openings in the center of the bed and each has a rounded top wall to drain and shed the lubricant or chips downwardly for collection into a pan usually disposed beneath the bed.

Further features and advantages of the invention will be more fully set forth in the description of the accompanying drawings forming a part of this specification, in which:

Figure 1 is a central vertical section through the improved bed, containing the hollow struts open at the base and with a curved or rounded top wall.

Figure 2 is a section on line 2—2, Figure 1.

Figure 3 is an end elevation of the bed, viewed from the head stock end.

Figure 4 is a section on line 4—4, Figure 1.

Figure 5 is an end elevation of the bed from the tail stock end.

Referring to the drawings, 1—1 indicates the side walls or rails of the bed of usual cross section configuration, each to provide a track or way 2 for slidably or otherwise

supporting a saddle or other part of the machine tool, usually bridging across the side walls to engage both thereof.

The side walls at their opposite ends are integrally connected by cross walls or webs and, as illustrated at the left-hand or head stock end, by a single cross wall or web 3, and at the tail stock end by a hollow strut 4 having an inclined upper wall 5 curved horizontally to provide a greater width at the junction of the strut with the side walls than in the center thereof.

A plurality of hollow struts 6—6 at definite spacing apart join the side walls intermediate of their longitudinal ends, the struts being approximately of duplicate formation, with the number employed depending upon the length of the bed, and each is approximately of rectangular cross section, with the upper or top wall 7 thereof curved or rounded to drain or shed any lubricant or chips falling thereon downwardly through the opening formed by the spacing of the struts and usually dropping into a pan, or like holder, disposed beneath the bed.

The hollow strut is open at its base preferably having a pair of openings 8—8 at relatively opposite sides of a central septum 9 as a vertical partition, integral with the vertical walls 10—10 joining the side walls of the bed. The openings in the base walls provide for removal of the cores used in casting the structure.

The vertical walls 10—10 of the strut are of curved form horizontally or are flared at their ends to present the same at an acute angle to the side walls with which it joins, and also to provide a greater width of strut at its juncture with the side wall than in the center thereof.

The structure in cross section horizontally is approximately of H form as shown in Figure 2, so that the walls qualify as angular braces, adding greater rigidity to the bed, and capable of withstanding greater



torsional stresses and strains, while the vertical and bending strains are also better resisted.

The curved form of the vertical walls or adjacent struts provide oblong openings through the center of the bed for the escape of chips or cuttings from the tool. The struts do not add any appreciable weight to the lathe bed but materially strengthen the structure for heavy duty service.

Having described our invention, we claim:

1. A machine tool bed comprising longitudinal side walls of substantial depth having upper surfaces forming tracks, and a transverse strut joining said side walls, said strut comprising spaced lateral webs terminating upwardly a distance below said tracks and downwardly at substantially the lower edges of said side walls, at least one of said webs having each end thereof divergent from that axial line of the strut which is transverse to the side walls, said strut also comprising a top wall connecting said lateral webs and the side walls.

2. A machine tool bed comprising longitudinal side walls of substantial depth having upper surfaces forming tracks, and a transverse strut joining said side walls, said strut comprising spaced lateral webs terminating upwardly a distance below said tracks and downwardly at substantially the lower edges of said side walls, at least one of said webs having each end thereof divergent from that axial line of the strut which is transverse to the side walls, said strut also comprising a top wall connecting said lateral webs and the side walls and downwardly curved in a longitudinal direction of the latter.

3. A machine tool bed comprising longitudinal side walls of substantial depth having upper surfaces forming tracks, and a transverse strut joining said side walls, said strut comprising spaced lateral webs terminating upwardly a distance below said tracks and downwardly at substantially the lower edges of said side walls, each of said webs having each end thereof divergent from that axial line of the strut which is transverse to the side walls, said strut also comprising a top wall connecting said lateral webs and said side walls.

4. A machine tool bed comprising longitudinal side walls of substantial depth having upper surfaces forming tracks, and a transverse strut joining said side walls, said strut comprising spaced lateral webs terminating upwardly a distance below said tracks and downwardly at substantially the lower edges of said side walls, each of said webs having each end thereof divergent from that axial line of the strut which is transverse to the side walls, said strut also comprising a top wall connecting said lateral webs and said side walls, said top wall hav-

ing a top surface arched longitudinally of the side walls.

5. A machine tool bed comprising longitudinal side walls of substantial depth having upper surfaces forming tracks, and a plurality of integral longitudinally spaced transverse struts joining said side walls, each of said struts comprising spaced lateral webs terminating upwardly a distance below said tracks and downwardly at substantially the lower edges of said side walls, the lateral webs of each strut being curvilinearly divergent at their ends from that axial line of the strut which is transverse to the side walls, each of said struts also comprising a top wall integrally connecting its lateral webs and the side walls and arched longitudinally of the latter.

6. A machine tool bed comprising longitudinal side walls of substantial depth having upper surfaces forming tracks, and an integral transverse strut joining said side walls; said strut comprising spaced lateral webs terminating upwardly a distance below said tracks and downwardly at substantially the lower edges of said side walls, each of said webs having each end thereof curvilinearly divergent from that axial line of the strut which is transverse to the side walls, a vertical web integrally connecting the intermediate portions of said lateral webs, and a top wall integrally connecting said lateral webs and side walls and arched longitudinally of the latter.

7. A machine tool bed comprising longitudinal side walls of substantial depth having upper surfaces forming tracks, and an integral transverse strut joining said side walls; said strut comprising spaced lateral webs terminating upwardly a distance below said tracks and downwardly at substantially the lower edges of said side walls, each of said webs having each end thereof curvilinearly divergent from that axial line of the strut which is transverse to the side walls, a vertical web integrally connecting the intermediate portions of said lateral webs, a bottom wall integrally connecting said lateral webs and provided with a perforation at each side of said vertical web, and a top wall integrally connecting said lateral webs and side walls and arched longitudinally of the latter.

8. A machine tool bed comprising longitudinal side walls of substantial depth having upper surfaces forming tracks, and a plurality of integral longitudinally spaced transverse struts connecting said side walls; each of said struts comprising spaced lateral webs terminating upwardly a distance below said tracks and downwardly at substantially the lower edges of said side walls, the lateral webs of each strut being curvilinearly divergent at their ends from that axial line of the strut which is transverse



to the side walls, each of said struts also comprising a top wall and a bottom wall integrally connecting its lateral webs and the side walls, said top wall being arched longitudinally of the side walls and said bottom wall being provided with an aperture adjacent each of the side walls, and a vertical web substantially midway between the side walls and integrally joining the lateral webs and top and bottom walls of each strut.

In witness whereof, we hereunto subscribe our names.

FRANCIS B. COCKBURN.  
HERMAN J. BREITENBACH.