

No. 796,805.

PATENTED AUG. 8, 1905.

P. R. BURTON.  
CENTERING FRAME.  
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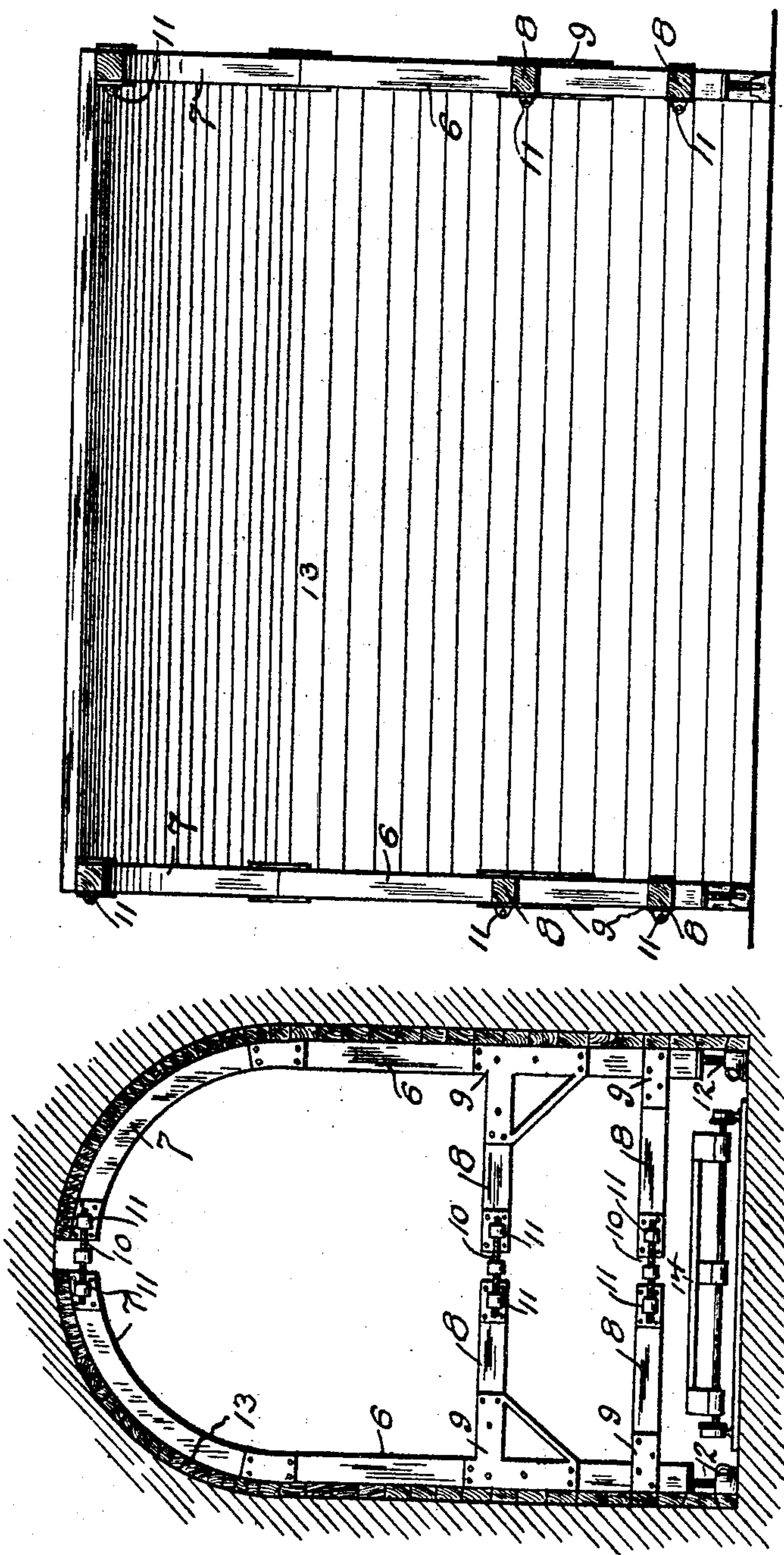


Fig. 2.

Fig. 1.

Witnesses  
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# UNITED STATES PATENT OFFICE.

PHILIP RAY BURTON, OF BAKERSFIELD, CALIFORNIA.

## CENTERING-FRAME.

No. 796,805.

Specification of Letters Patent.

Patented Aug. 8, 1905.

Application filed April 24, 1905. Serial No. 257,226.

*To all whom it may concern:*

Be it known that I, PHILIP RAY BURTON, a citizen of the United States, residing at Bakersfield, in the county of Kern and State of California, have invented new and useful Improvements in Centering-Frames, of which the following is a specification.

This invention is a centering device or form to be used in tunnels, sewers, culverts, shafts, and the like; and it is characterized by the fact that it is portable and may be moved along in the tunnel or other work for continuous operation and by the further fact that it may be expanded or contracted to release the same from the completed section and to locate it for the next section.

In the accompanying drawings the invention is illustrated as applied to the construction of a railway-tunnel, and referring thereto—

Figure 1 is an end elevation of the structure. Fig. 2 is an inner side elevation.

Referring specifically to the drawings, 6 indicates upright timbers, to the top of which are joined the curved or arched timbers 7. These timbers are of proper height and shape to correspond approximately to the dimensions of the tunnel to be built.

The timbers 6 on opposite sides of the frame are braced and spaced apart by horizontal timbers 8, the length of each of which is somewhat less than one-half the width of the tunnel. The timbers 6, 7, and 8 are joined and strengthened by iron brace-plates 9.

Between the ends of the horizontal timbers 8 and also between the ends of the arched timbers 7 at the crown of the arch are adjusting-screws 10, having right and left threads, which work in nuts 11 in opposite ends of said timbers. These act to spread or contract the form horizontally. Removable jacks 12 are placed under the lower ends of the uprights 6.

13 indicates lagging secured to the outer sides of the timbers 6 and 7 to produce the shield and form. It will be understood that there are two or more sets of frames to which the lagging is secured.

For the purpose of moving the structure a flat-car 14 is employed, running on tracks laid in the tunnel.

In use the structure is moved along by the car to the proper position in the unfinished tunnel and then expanded by means of the screws and lifted by means of the jacks until it reaches the proper dimensions and occupies the proper position. Concrete filling is then run in between the walls of the tunnel and the form and allowed to set. The sides are then contracted by means of the screws 10 and the jacks 12 lowered until the lower cross-beams 8 rest upon the car. The structure can then be moved along to the next section and the operation repeated.

The structure may thus be used repeatedly for continuous operation in the building of tunnels, sewers, and the like. For brick-work the lagging may be removable and can be built up as fast as the masonry proceeds.

What I claim as new, and desire to secure by Letters Patent, is—

A centering-frame for the purpose stated, comprising side sections having upright and arch timbers and cross-beams, and screws between the ends of the cross-beams and arch timbers, to expand and contract the sections.

In testimony whereof I have signed my name to this specification in the presence of two subscribing witnesses.

PHILIP RAY BURTON.

Witnesses:

MATTHEW S. PLATZ,  
CHAS. A. DE PEW.