March 17, 1925. 1,530,438

J. P. SYKES ET AL

JIG FOR ASSEMBLING LOCOMOTIVE FRAMES

Filed April 5, 1922 4 Sheets-Sheet 1

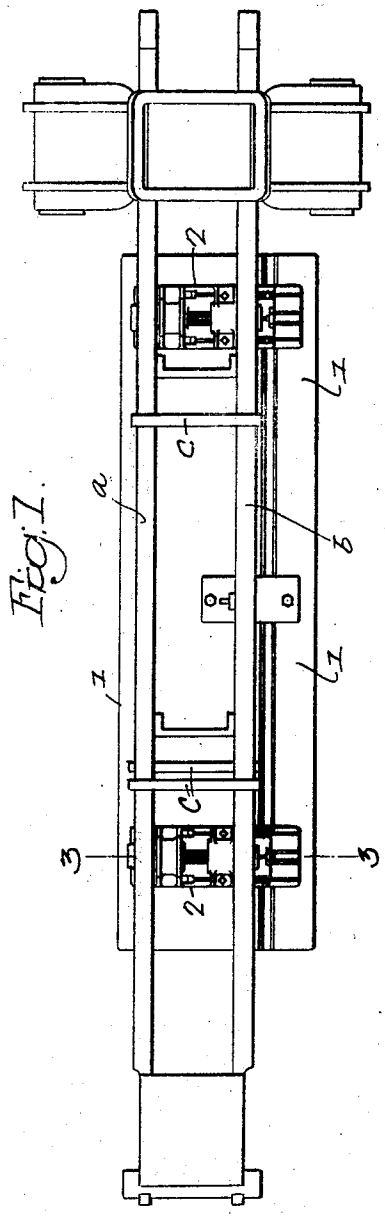


Fig. 1.

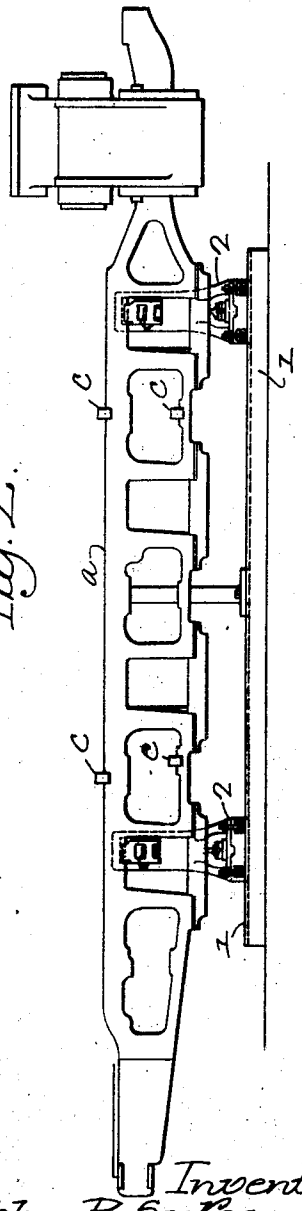


Fig. 2.

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Fenwick & Howson

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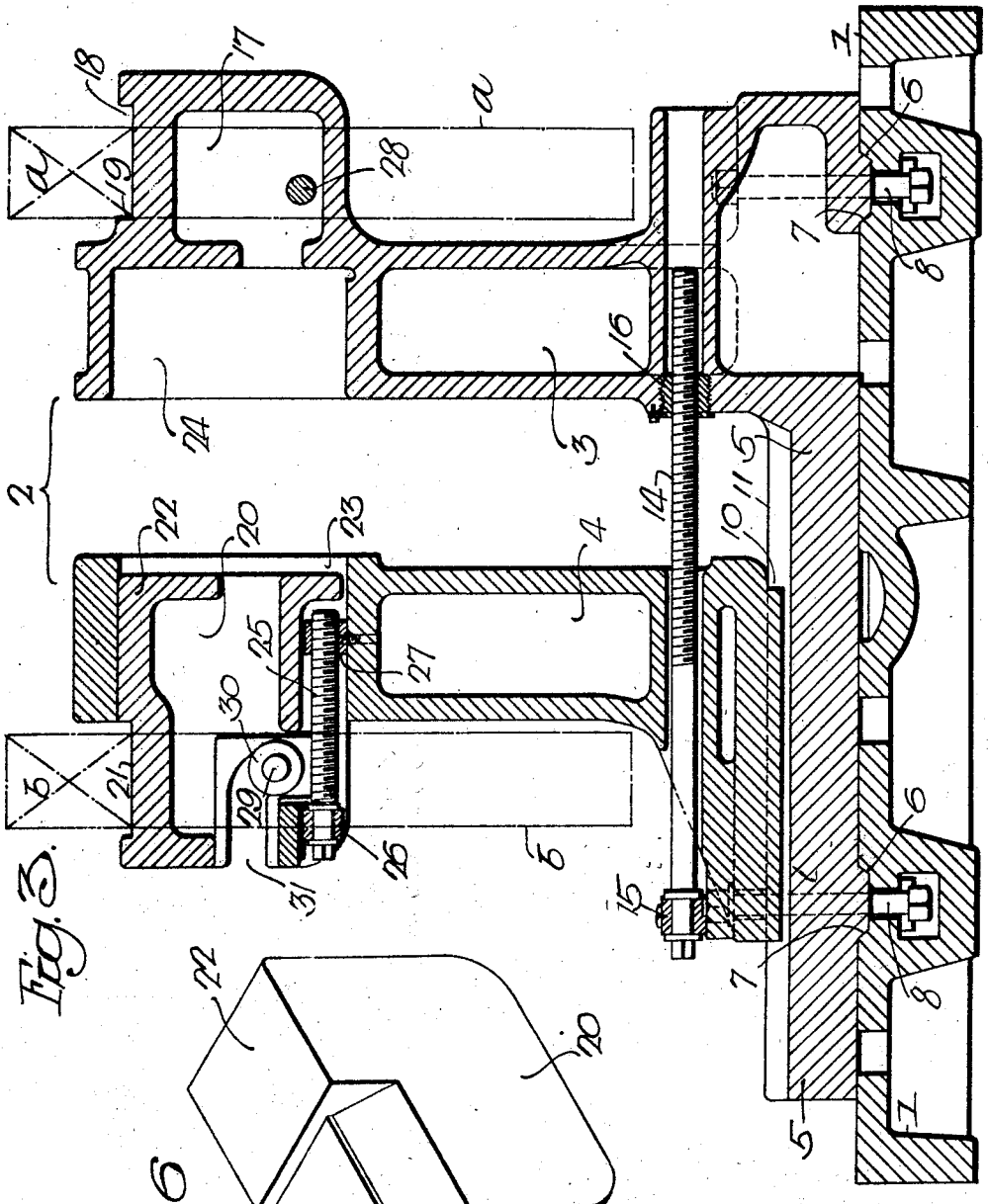


Fig. 3.

Fig. 6.

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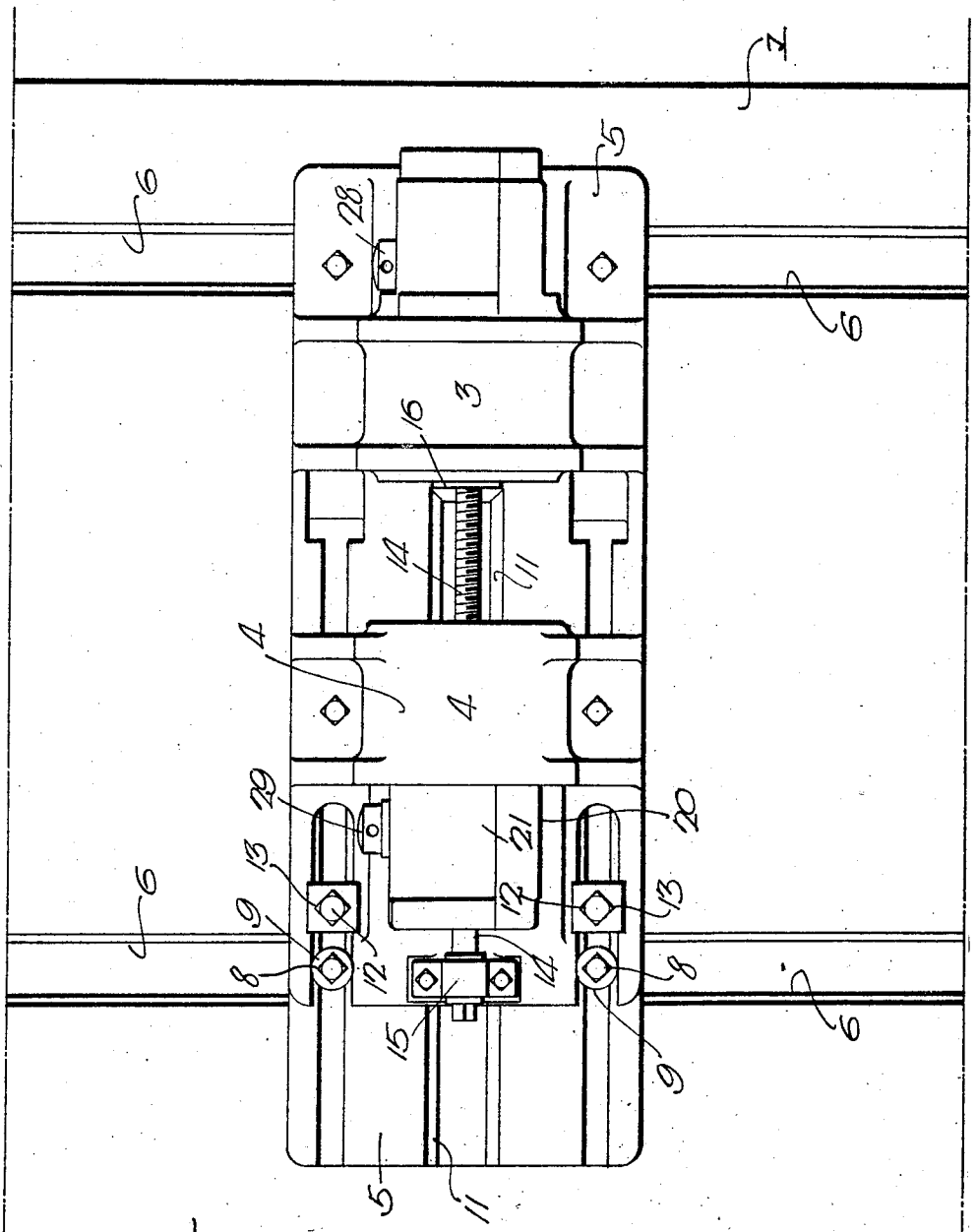


Fig. 4.

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March 17, 1925. 1,530,438

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Filed April 5, 1922 4 Sheets-Sheet 4

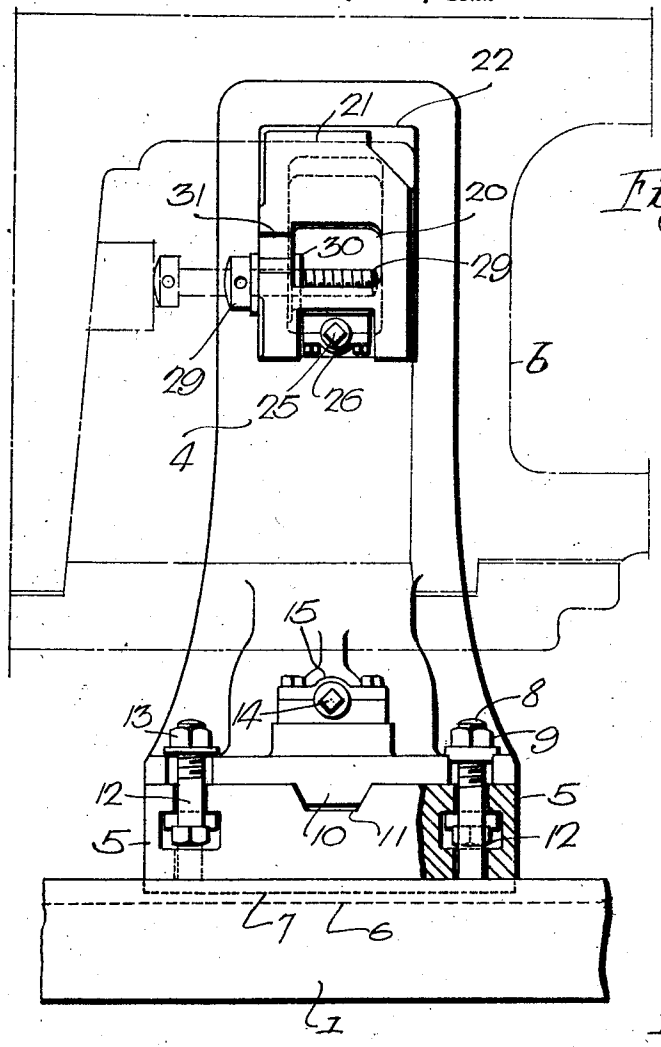


Fig. 5.

Fig. 7.

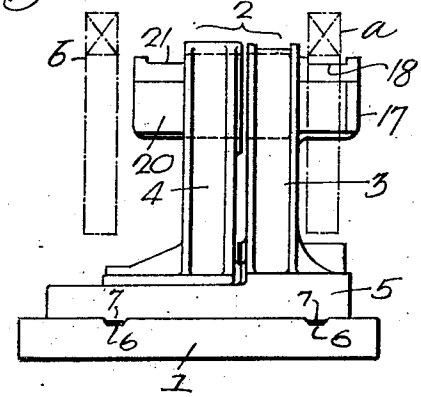
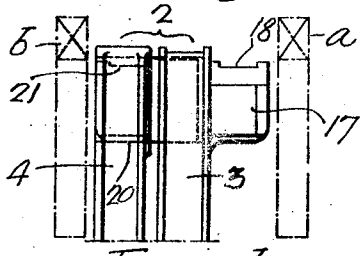


Fig. 8.



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Harmon E. Stover
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Hoosam & Hoosam

Patented Mar. 17, 1925.

1,530,438

UNITED STATES PATENT OFFICE.

JOHN P. SYKES, OF WALLINGFORD, AND HARMON E. STOVER, OF PHILADELPHIA, PENNSYLVANIA, ASSIGNORS TO THE BALDWIN LOCOMOTIVE WORKS, OF PHILADELPHIA, PENNSYLVANIA, A CORPORATION OF PENNSYLVANIA.

JIG FOR ASSEMBLING LOCOMOTIVE FRAMES.

Application filed April 5, 1922. Serial No. 549,728.

To all whom it may concern:

Be it known that we, JOHN P. SYKES and HARMON E. STOVER, citizens of the United States, residing, respectively, in Wallingford, Delaware County, Pennsylvania, and Philadelphia, Pennsylvania, have invented certain Improvements in Jigs for Assembling Locomotive Frames, of which the following is a specification.

Our invention relates to certain improvements in jigs for assembling the side frames of a locomotive so as to insure the proper alignment of one frame in respect to the other and the correct assembling of the several elements which are secured to the side frames.

The invention is an improvement on the construction for which patent was granted to John P. Sykes, February 26, 1921, No. 1,369,574.

The object of the present invention is to construct the mechanism so that the side members of the housings can be adjusted towards and from each other in order to accommodate locomotive frames of different widths and to construct one set of supports so that they can be retracted to allow for the removal of the assembled frame.

In the accompanying drawings:

Fig. 1 is a plan view of our improved jig for aligning locomotive, and like, frames, with a locomotive frame in position;

Fig. 2 is a side view;

Fig. 3 is a transverse sectional view on the line 3—3, Fig. 1;

Fig. 4 is a plan view of the mechanism illustrated in Fig. 3;

Fig. 5 is an end view of the mechanism illustrated in Fig. 3, with a portion in section;

Fig. 6 is a detached perspective view of one of the adjustable brackets of the saddle;

Fig. 7 is a diagrammatic view, showing the two parts of the saddle; and

Fig. 8 is a diagrammatic view, showing the movable bracket retracted to allow for the removal of the frames.

Referring to the drawings, 1 is a foundation plate of a length illustrated in Figs. 1 and 2. Mounted on this plate are two saddle structures in the present instance, although the number of saddle structures may be increased according to the character of the frame which they support. The saddle structure 2 consists of two parts 3 and 4. The part 3 has a base 5, which rests on the foundation plate 1 and is capable of being longitudinally adjusted on said plate, while the part 4 is mounted on the base 5 of the part 3 and can be adjusted to and from the upright portion of the part 3. as clearly shown in Fig. 3. In the foundation plate are two longitudinal channels 6. On the base plate 5 are ribs 7, which extend into the channels. In order to secure the part 3 of the saddle structure to the foundation plate, bolts 8 are provided having nuts 9 so that, on backing off the nuts, the saddle structure is free to be moved longitudinally on the foundation plate. When the saddles are in the position to which they are adjusted, they can be firmly secured to the foundation plate by the bolts.

The part 4 of the saddle structure can be held in the position to which it is adjusted by bolts 12 having nuts 13. In order to adjust the part 4 on the part 3, an adjusting screw 14 is provided, which is held to a bearing 15 on the part 4, and which extends through a nut 16 secured to the part 3, as shown clearly in Fig. 3. On turning the screw in one direction, the part 4 can be moved towards the part 3, and, when the screw is reversed, it is moved from the part 3. On the part 3 is a fixed bracket 17, which, in the present instance, is formed integral with the part. This bracket has a recess 18 in its upper surface. The wall 19 of this recess acts as a fixed abutment for one side frame *a* of the locomotive. The frame is rigidly secured to this part 3 in any suitable manner. Adapted to slide transversely in the part 4 is a movable bracket 20 having a recess 21 in its upper surface. The body portion 22 of the bracket fits an opening 23 in the upper portion of the part 4.

In order to accommodate the movement of this bracket, when the parts 3 and 4 are comparatively close together, the part 3 is recessed at 24. In order to adjust the mov-

able bracket on the part 4, an adjusting screw 25 is provided, which is mounted in a bearing 26 on the bracket and extends through a nut 27 secured to the part 4 so that, on turning the screw, the part 4 can be adjusted. On the fixed bracket 17 is a screw 28, which is arranged to bear against the frame of a locomotive, holding it against longitudinal movement after adjustment. On the vertical bracket is a screw 29 adapted to a flanged bushing 30. which rests in a curved recess 31 in the bracket. This screw also acts to hold the other frame in proper alignment longitudinally. The screw, with the bushing, can be bodily removed from the bracket, if desired.

In assembling locomotive frames by the use of our improved jig, the two saddle structures are moved longitudinally so that two of the axle box openings in the frame will align with the brackets of the saddle structure. After they are in proper position, they are secured to the foundation plate. The side frame *a* of the locomotive is mounted on the fixed bracket 17, in the present instance, at two of the openings for the axle boxes, and the side frames can be adjusted longitudinally by the screws 28, the heads of which bear against the walls of the openings. The frames can then be clamped to the saddle structure in any manner desired.

After the side frame *a* is secured in position, the side frame *b* is located on the projecting portion of the movable bracket 20, as shown in Fig. 3. Then the spacers *c* are located on the two frames *a* and *b*, as shown in Figs. 1 and 2, so as to space the two frames the proper distance apart. The screws 29 are adjusted so as to bring the frame *b* in proper alignment with the frame *a* so that the openings in the frames will be directly opposite each other. After the side frame *b* is properly aligned, it is secured in position in any suitable manner. The permanent spacing members are placed in position and the saddle structure and other parts are assembled on the two side frames.

When all of the parts have been assembled and it is desired to remove the assembled locomotive frame from the jig, then the part 4 of each saddle structure is moved towards its corresponding part 3 by the screw 14, as shown in Fig. 7. The frame, in the meantime, has been raised by suitable mechanism so that the lips on the two brackets will be clear of the frame. Then the movable bracket 20 is retracted by its screw 25 and when it is completely retracted, as in Fig. 8, the assembled frame is moved laterally so as to clear the fixed bracket 17, after which the entire frame can be raised clear of the jig without removing the pedestal caps of the frame.

We claim:

1. The combination in a jig, of a foundation plate; a two-part saddle structure mounted thereon, one part being fixed and the other movable towards and from the fixed part.

2. The combination in a jig, of a foundation plate; a two-part saddle structure mounted thereon; and a bracket on each part, one part being adjustable in respect to the other and one of the brackets being adjustable.

3. The combination in a jig for assembling locomotive and like frames, of a foundation plate; a saddle structure mounted thereon, one part of the saddle structure being fixed and the other part being adjustable towards and from the fixed part; a fixed bracket on the fixed part; and an adjustable bracket on the movable part, whereby the bracket can be retracted when it is desired to remove an assembled frame from the jig.

4. The combination in a jig, of a foundation plate; saddle structures adjustably mounted on said foundation plate, each saddle structure being made in two parts, one of said parts having a base and the other part being mounted on the base and adjustable towards and from the upper portion of the upper part; a screw for adjusting said movable part; a fixed bracket on one of said parts; and a retractable bracket on the other part.

5. The combination in a jig, of a foundation plate having two longitudinal grooves therein; two saddle structures mounted on said foundation plate, one part of each structure having a base provided with ribs, which extend into the grooves in the foundation plate; a fixed bracket on said part of the saddle structure; a movable part adapted to ways on the base of the fixed part of the saddle; a screw for adjusting the said parts towards and from the fixed part; a retractable bracket on the movable part; and a screw for retracting the bracket so as to allow for the removal of the assembled frame.

6. The combination in a jig, of a foundation plate; longitudinal grooves therein; a two-part saddle mounted on the foundation plate, one of said parts having a base; ribs on the base adapted to the grooves in the foundation plate for securing the parts together, the other part of the saddle structure being movable on the base; and a bracket on each part, one of said brackets being adjustable and capable of being retracted so as to allow for the removal of the assembled frame, the other part having a recess adapted to receive the adjustable bracket.

7. The combination in a jig, of a foundation plate; a two-part saddle structure

mounted on the foundation plate, one of said parts being fixed as regards lateral movement and having a base, the other part being movably mounted on said base; a screw for adjusting the movable part; a fixed bracket on the fixed part of the saddle structure; a retractable bracket on the movable part; a screw on the fixed bracket bearing against the frame, the removable bracket having a slot therein; a flanged bushing adapted to the slot; and a screw mounted in the bushing and bearing against the frame.

JOHN P. SYKES.
HARMON E. STOVER.