

(No Model.)

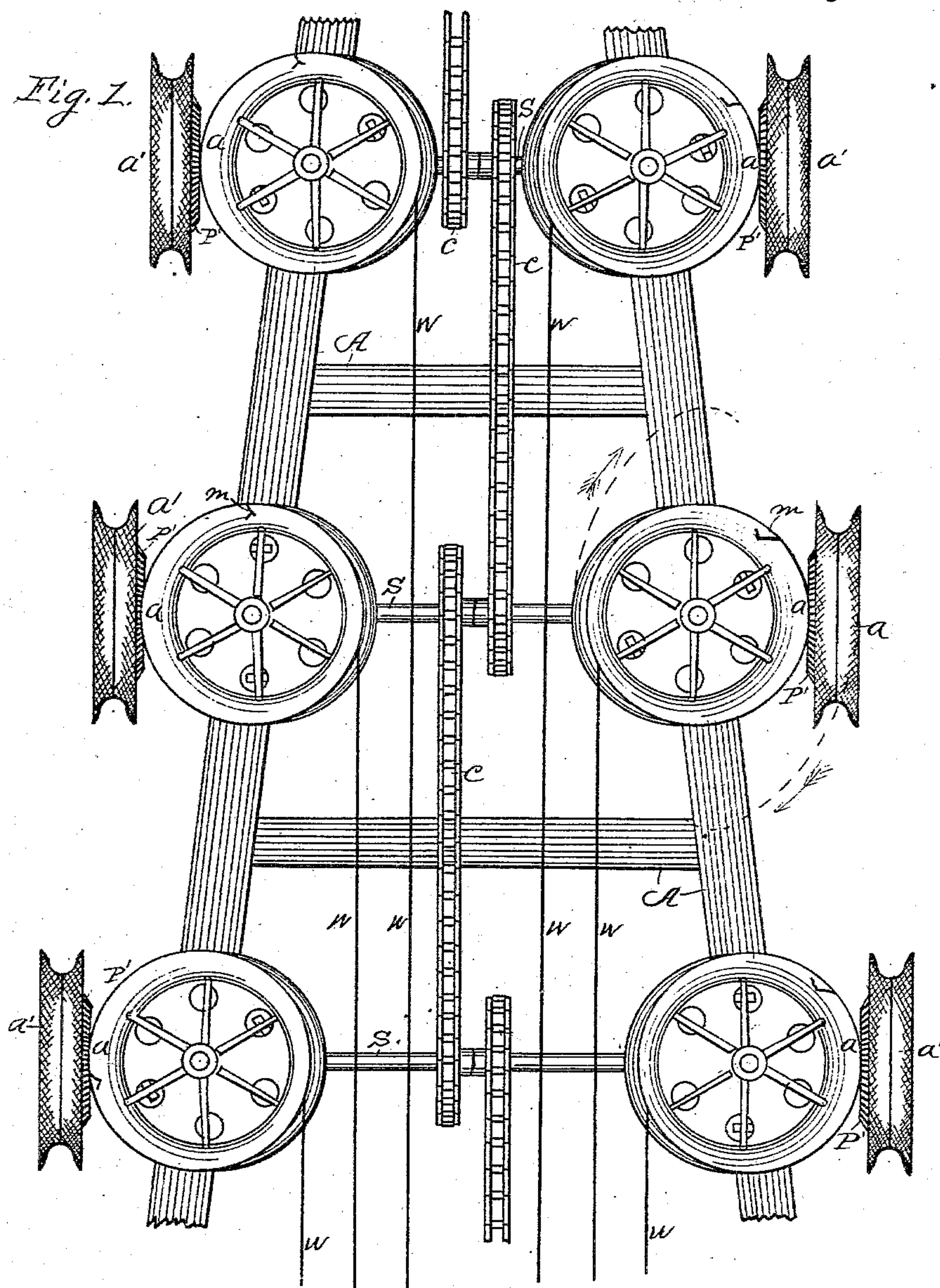
2 Sheets—Sheet 1.

F. CRICH.

WIRE COILING TRAIN FOR GALVANIZING APPARATUS.

No. 301,573.

Patented July 8, 1884.



Witnesses.

Thos. J. Hutchins.  
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Inventor.

Frederick Crich.



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Fig. 2.

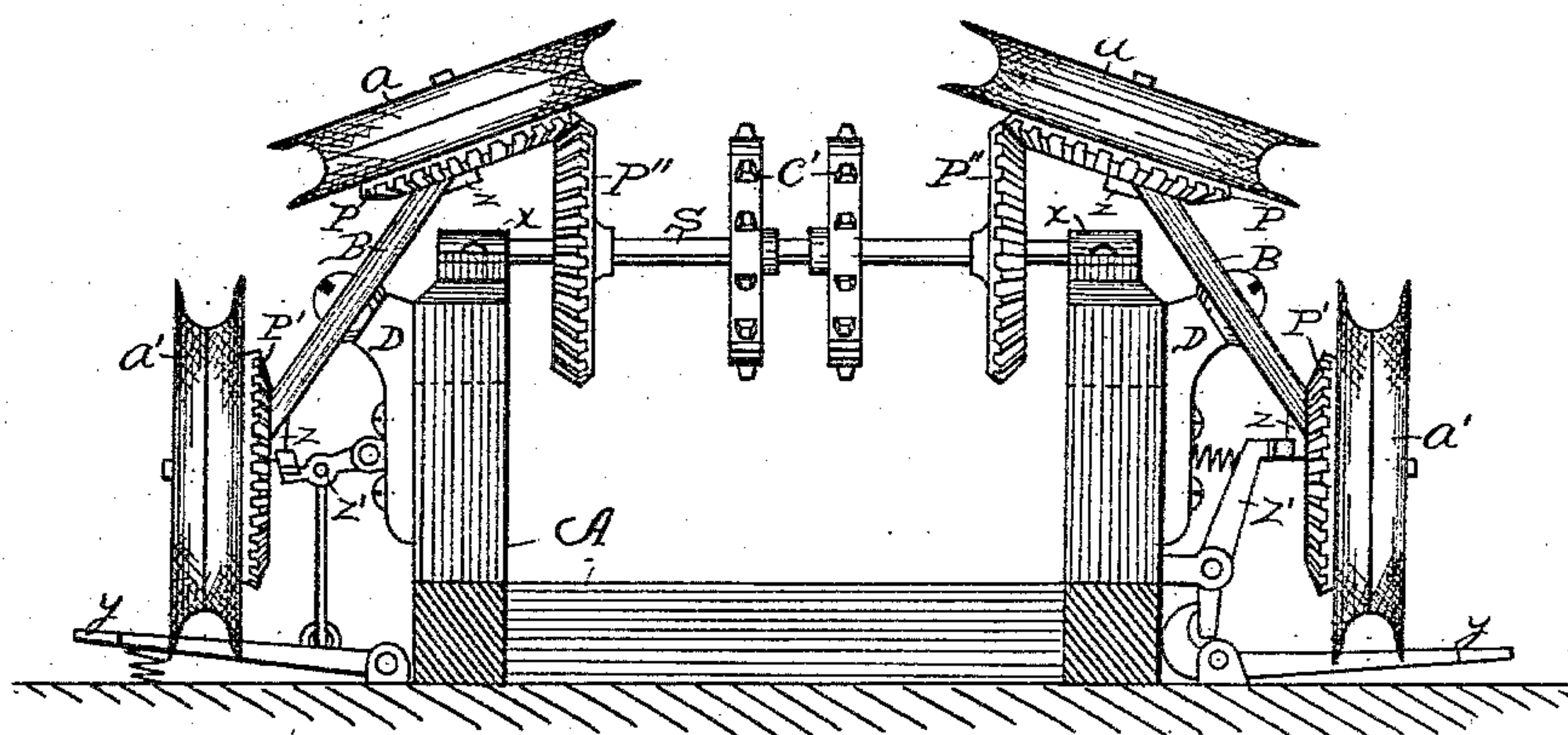


Fig. 3.

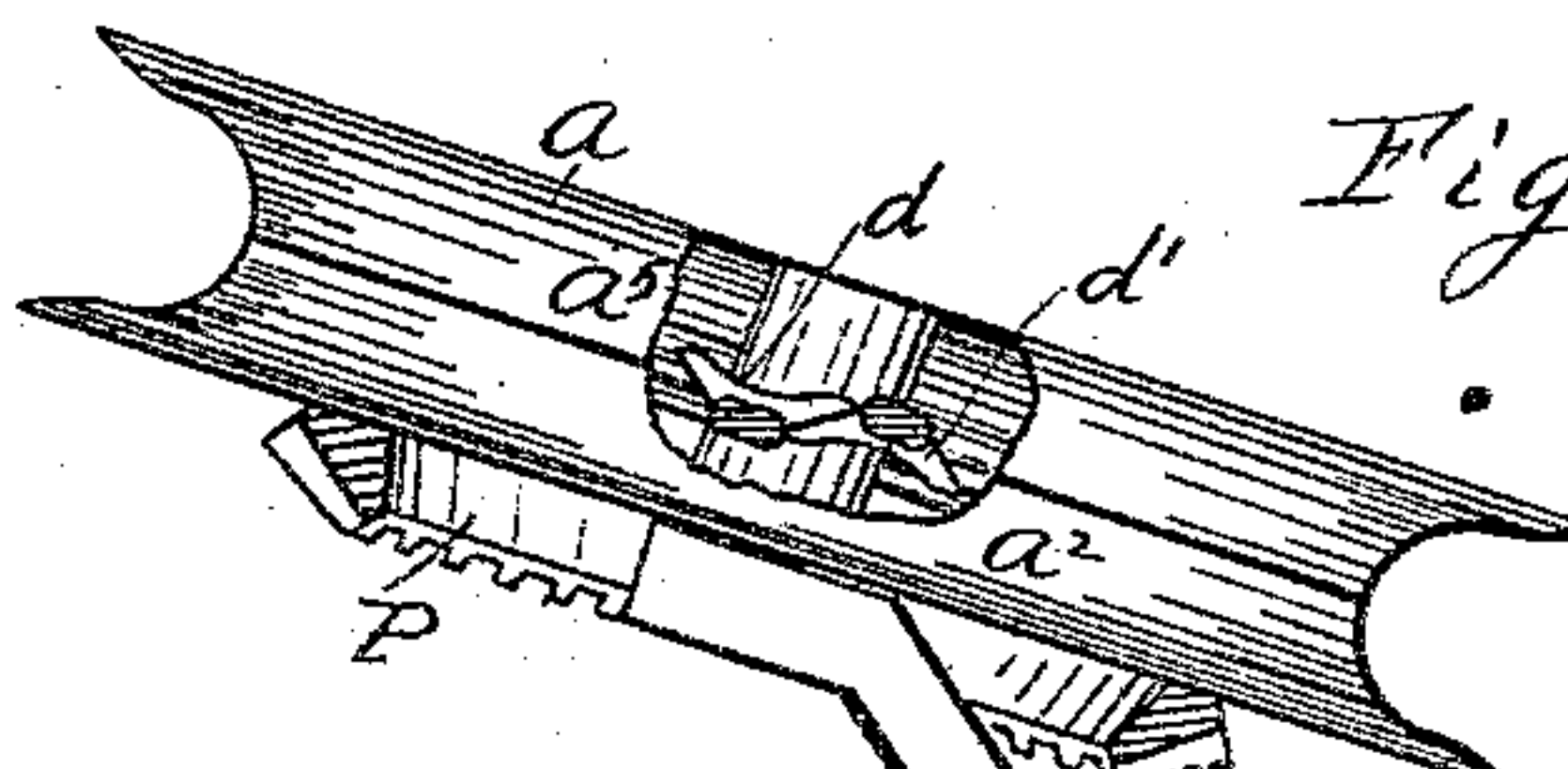
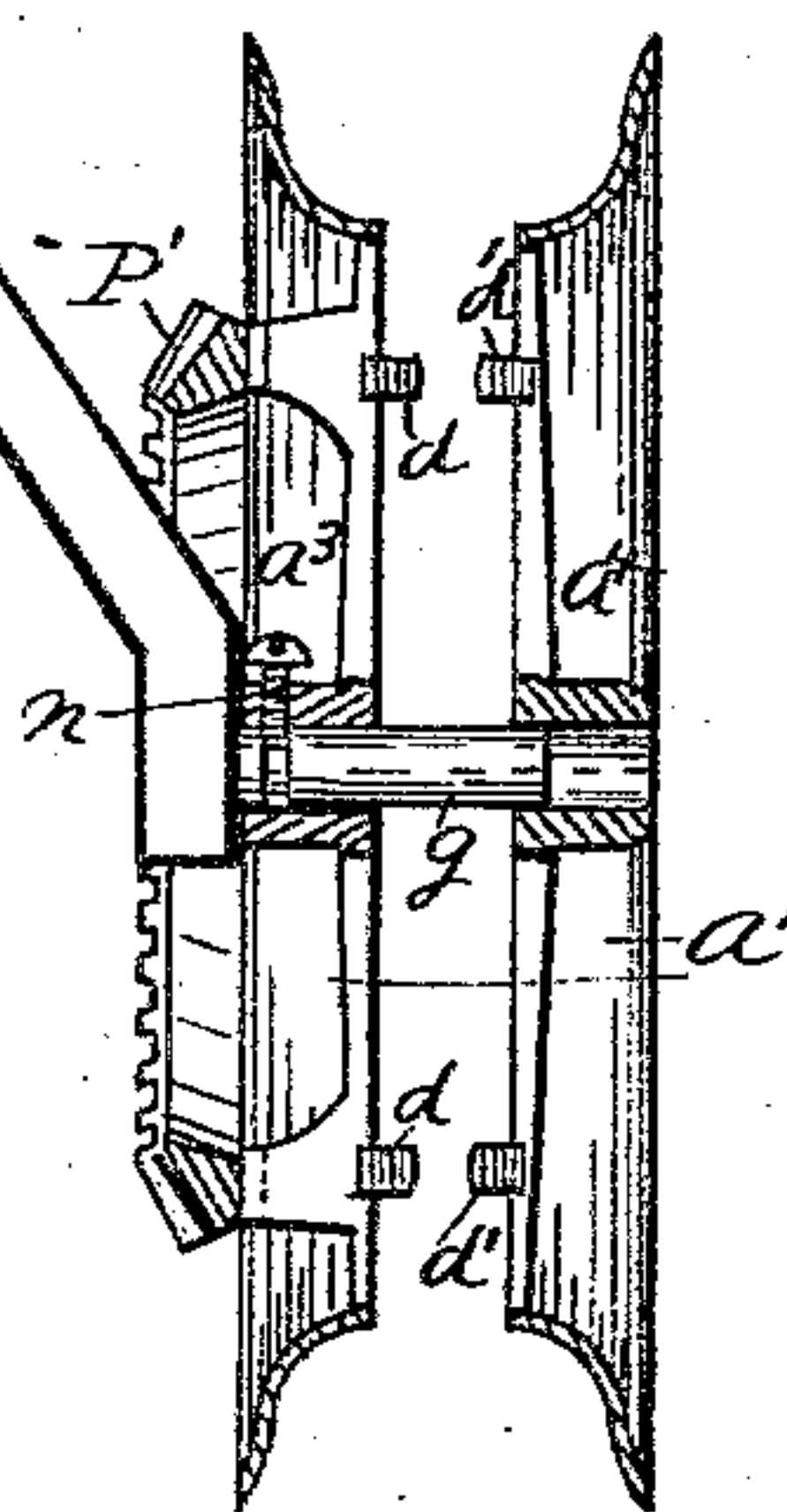
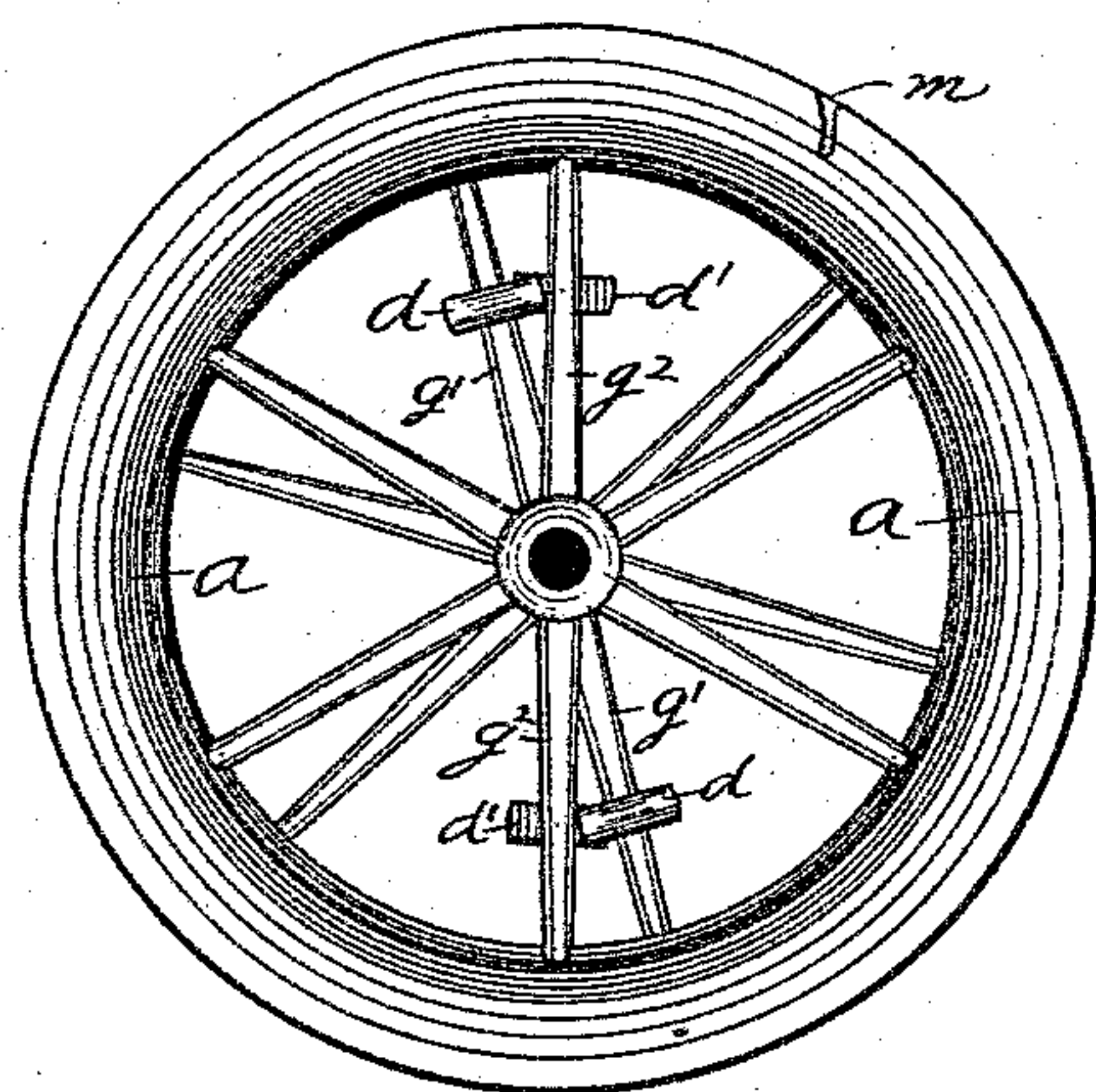


Fig. 4.



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# UNITED STATES PATENT OFFICE.

FREDERICK CRICH, OF JOLIET, ILLINOIS, ASSIGNOR OF ONE-HALF TO THE  
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## WIRE-COILING TRAIN FOR GALVANIZING APPARATUS.

SPECIFICATION forming part of Letters Patent No. 301,573, dated July 8, 1884.

Application filed December 21, 1883. (No model.)

*To all whom it may concern:*

Be it known that I, FREDERICK CRICH, a citizen of the United States of America, residing at Joliet, in the county of Will and State of Illinois, have invented certain new and useful Improvements in a Wire-Coiling Train for a Galvanizing Apparatus, of which the following is a specification, reference being had therein to the accompanying drawings.

Figure 1 is a plan view on the top of a portion of the coiling-train; Fig. 2, a cross-section of the frame A in front of a section of coiling-sheaves and their operating mechanism; Fig. 3, a side view of swinging arm B, an edge view of sheave *a*, having a portion broken away, and a central vertical sectional view of sheave *a'*; and Fig. 4, a side view of a single sheave-wheel *a*, on which the wire is coiled.

This invention relates to certain improvements in a coiling-train of a wire-galvanizing apparatus, which improvements I will fully set forth and explain in the following specification and claims.

The object and use of this invention is to take up and coil the galvanized wire as it leaves the bath in such manner that the wire will not stop and stand still in the bath when a sheave is coiled full of wire and has to be removed and an empty sheave supplied to take on the next coil. In ordinary machines for this purpose, when a sheave upon which the wire is coiled as it leaves the galvanizing-bath is full of galvanized wire, the sheave must be stopped so it can be separated and the coil of wire be removed. In order to so remove the coil from the sheave, the wire as it passes through the bath must be stopped for a little time in the bath, the result of which is that a portion of the wire that was stopped in the bath is spoiled by taking on too much galvanizing material, which will crack and scale off when the wire is used, and for that reason such spoiled portion is cut off and thrown away. By the use of this machine the wire passes along continuously through the galvanizing-bath without stopping, so that none of the galvanized wire is lost.

Referring to the drawings, and looking at

Figs. 2 and 3, B is a swinging arm pivoted to the side of the main frame A on the bracket D, on which it revolves. *a* and *a'* are the coiling-sheaves, pivoted, respectively, one on each end of the swinging arm B at the angle shown on the stud *g*, which is integral with said swinging arm. The sheaves are made in two equal halves, so as to be separable through the center at right angles with their axes. The inner halves, *a*<sup>2</sup> and *a*<sup>3</sup>, have attached to them the bevel-gears P and P', which as the arm B swings around, alternately mesh with the bevel-gears P'' P'' on shaft S, by means of which the sheaves are alternately driven. The inner halves, *a*<sup>2</sup> *a*<sup>3</sup>, of the sheaves are caused to stay on the stud *g* by means of a set-screw passing through the hub of the sheave into an annular groove in the stud, as shown in Fig. 3. The outer half of the sheaves, *a*<sup>4</sup> and *a*<sup>5</sup>, passes loosely on the stud *g* and attaches to the opposite half of the sheave by means of interlocking lugs *d'* and *d*, (shown particularly in Fig. 4,) which are cast integral with the spokes or web of the sheave and interlock with each other, as shown in said figure, and securely unite the two parts of the sheave. When the sheave is wound full of wire and it is desired to remove the coil, the outer half of the sheave is turned backward a trifle and unlocks the lugs *d d'* from each other and then the said half is easily removed with the coil of wire. Motion is imparted to the sheaves by means of the bevel-pinions P'' P'', sprocket-wheels *c'*, and chain-belts *c*, and the sheaves are set in trains on a triangular frame, as shown in Fig. 1, so that any number of wires may be drawn through the galvanizing vat or bath, each pair of sheaves taking care of a single wire, *w*.

In operation, when the sheave *a*, looking at Fig. 1, is coiled full of wire, and it is desired to supply a new sheave, the arm B is caused to swing in the direction the wire *w* is traveling, as shown by the arrows, until sheave *a'* takes the position of sheave *a*. The wire then falls into the sheave *a'*, which has in turn begun to rotate by means of its bevel-gear P' having meshed with bevel-gear P''. The wire is then caught and brought into the slit *m*, Fig. 4, and



then cut off so as to cut the wire loose from the other full sheave. The end of the wire being thus fast in the slit *m*, is held so that the rotation of the sheave will coil on it a coil of wire. The other sheave previously filled is free to be separated, as before stated, to remove the coil of wire and then unite the two parts of the sheave for another like operation. A latch, *z'*, operated by the foot-lever *y*, engages with the swinging arm at *z*, serves to hold the sheaves in proper position while they are coiling the wire. Any form of latch may be used for the purpose, and two forms are shown in Fig. 2. It will be observed that as the full sheave is thus moved forward by the rotation or swinging of the arm B, the wire *w* does not stop, but is kept in motion by the full sheave until the empty sheave takes it and begins to revolve, so that the wire is drawn evenly and continuously through the galvanizing-bath, and the difficulties hereinbefore named overcome.

When desired, the inner half of the sheaves may be constructed with a perforated web, as shown in Fig. 1, for the lugs *d'* of the oppo-

site half of the sheave to catch into, and any suitable mechanism may be used to swing the swinging arms B to change the coiling-sheaves, substantially as described.

Having thus described my invention, what I claim as new, and desire to secure by Letters Patent, is as follows, to wit:

1. In a wire-coiling train for a galvanizing apparatus, the combination of the swinging arm B, pivoted centrally to the frame A, separable sheaves *a* and *a'*, having the interlocking lugs *d* and *d'*, and bevel-gears P and P', bevel-pinions P'', and latch *z'*, as and for the purpose set forth.

2. In a wire-coiling train for a galvanizing apparatus, the combination of the separable sheaves *a* and *a'*, having the interlocking lugs *d* and *d'*, and bevel-gears P and P', and swinging pivoted arm B, as and for the purpose set forth.

FREDERICK CRICH.

Witnesses:

THOS. H. HUTCHINS,  
WM. J. HUTCHINS.