

(No Model.)

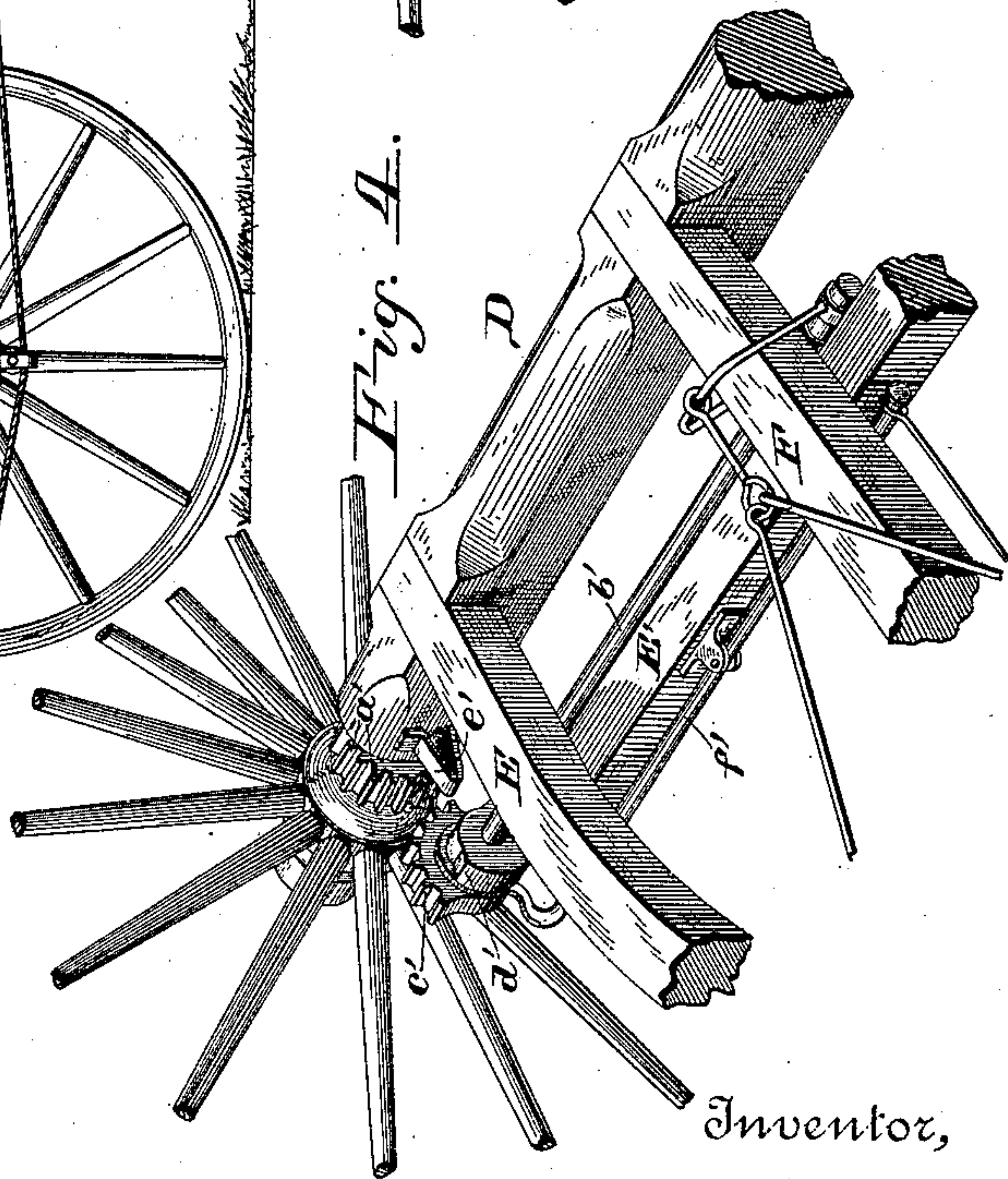
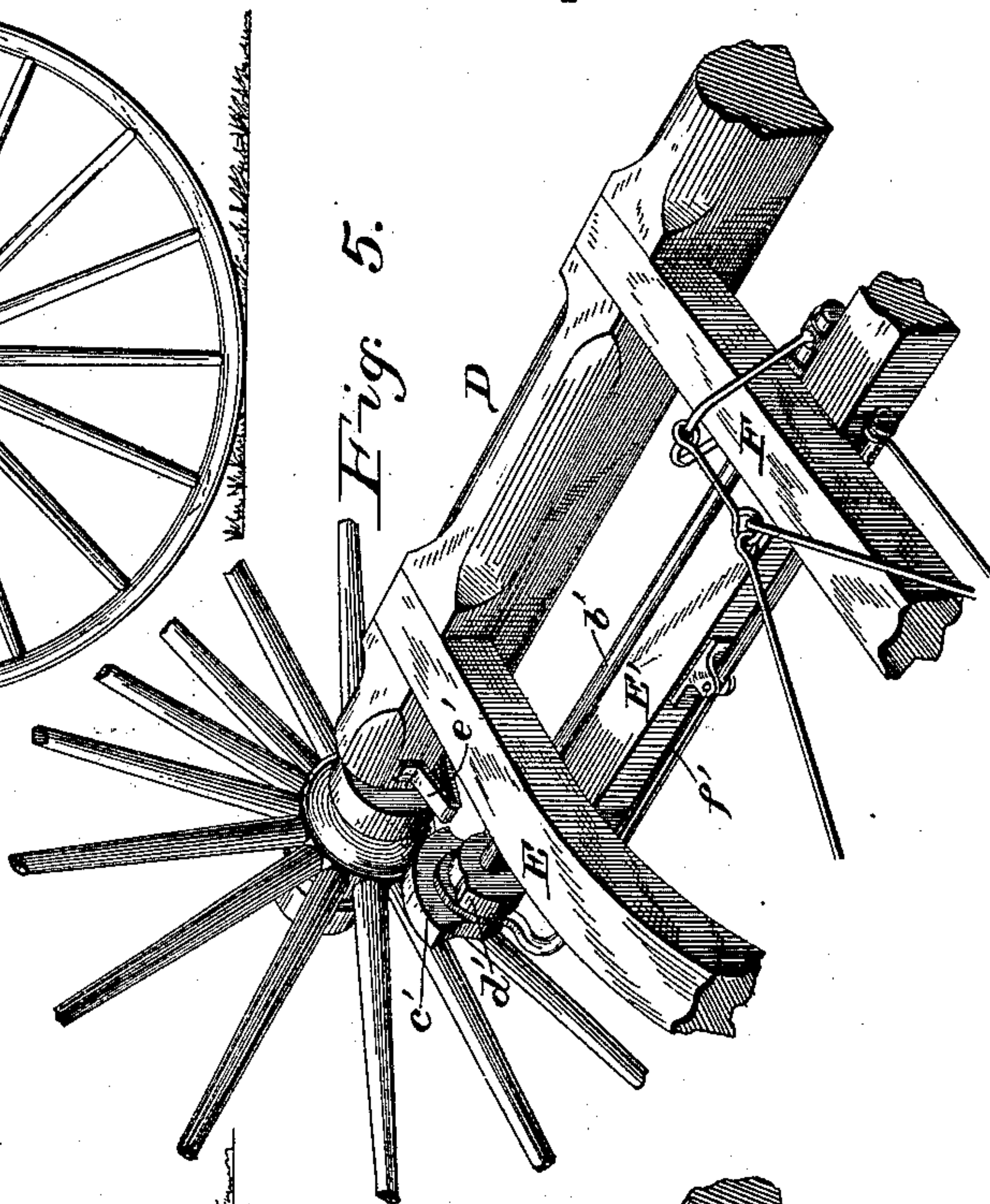
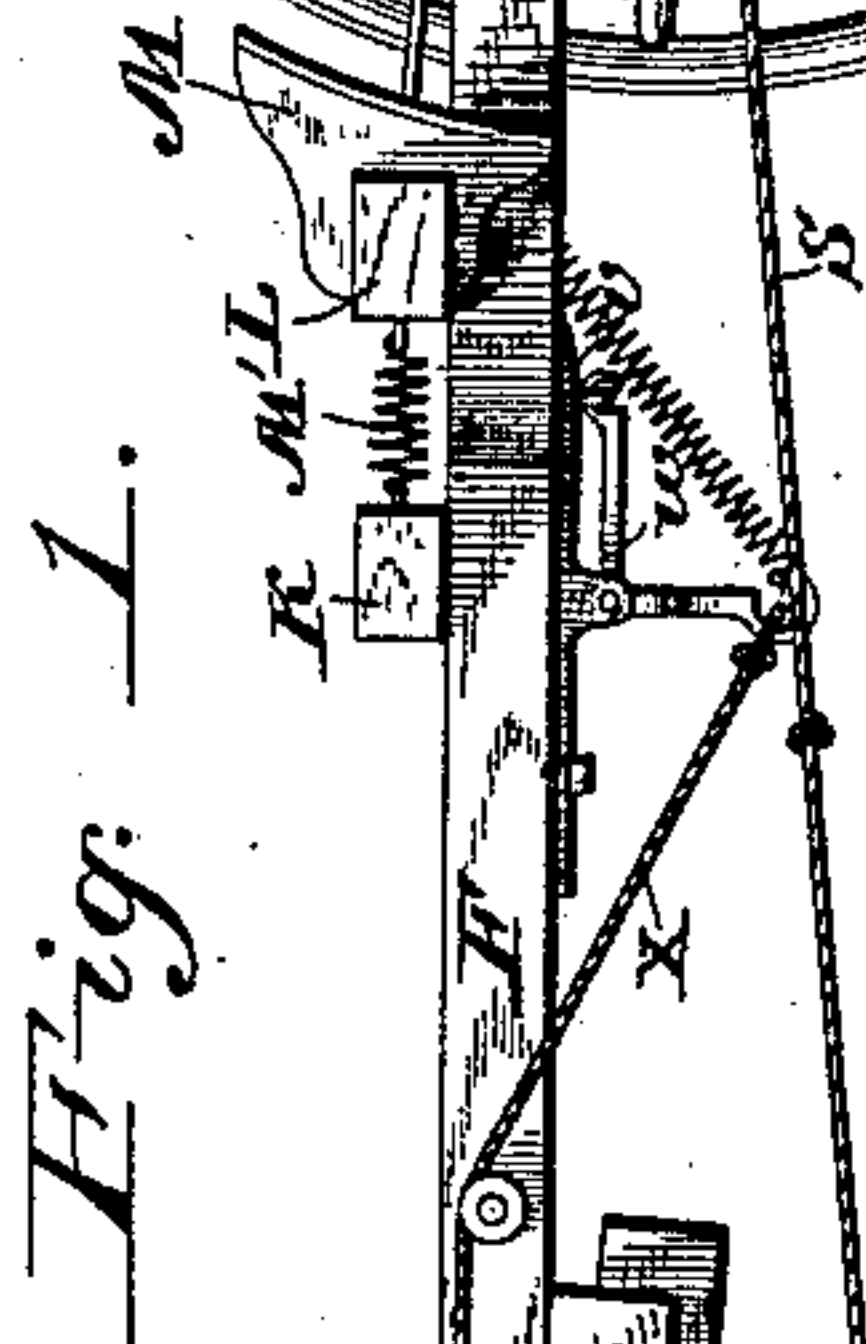
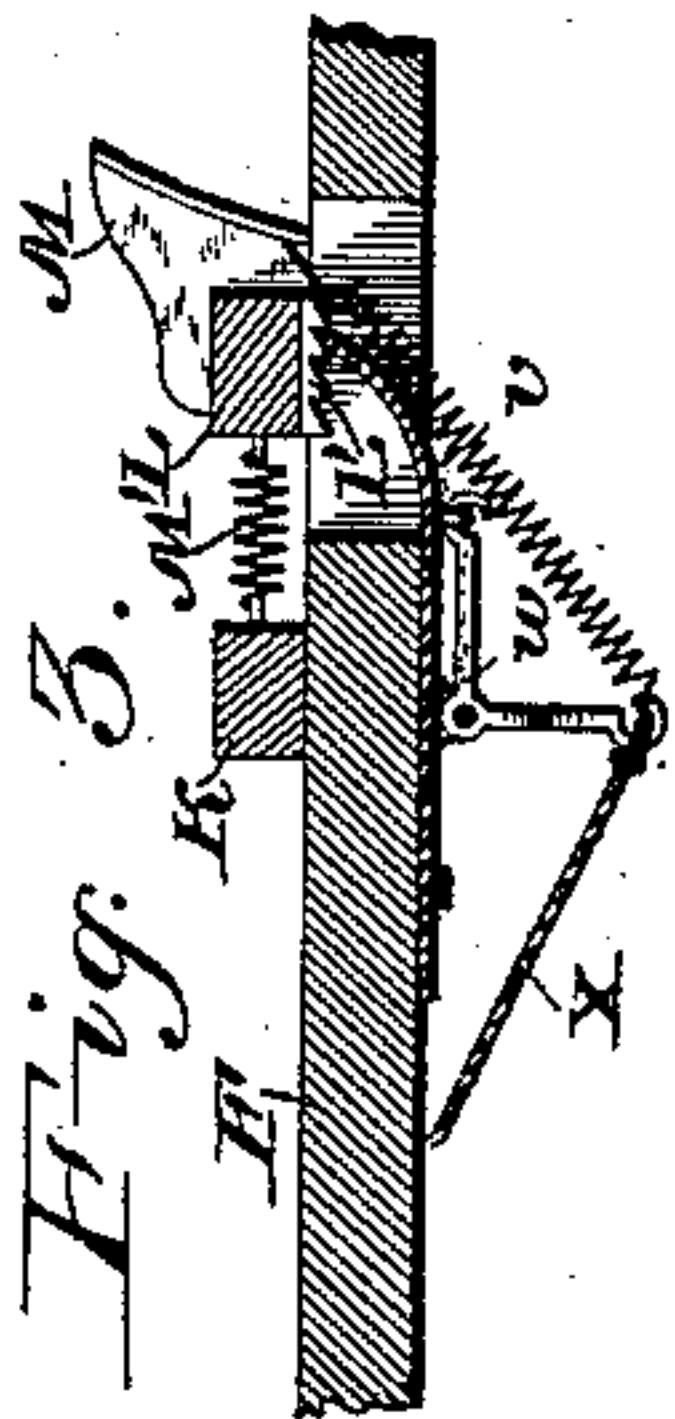
2 Sheets—Sheet 1.

H. FATIC.

AUTOMATIC VEHICLE BRAKE.

No. 349,033.

Patented Sept. 14, 1886.



Witnesses

Roy C. Bowen
E. G. Siggers

Inventor,

Henry Fatic

By his Attorneys

C. A. Howland

(No Model.)

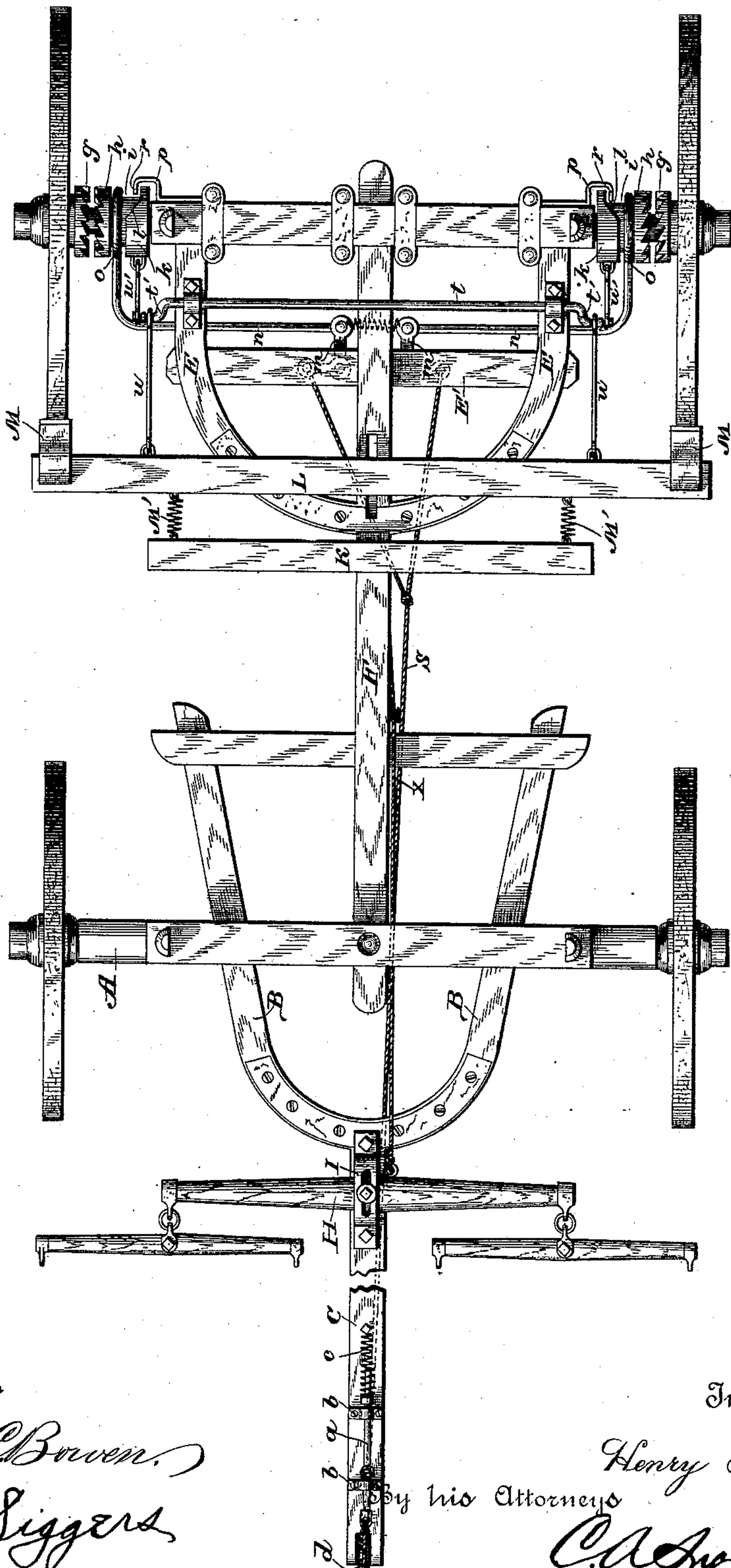
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Fig. 2.



Witnesses

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Inventor,

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By his Attorneys

C. A. Snow & Co

UNITED STATES PATENT OFFICE.

HENRY FATIC, OF MIDDLETOWN, INDIANA.

AUTOMATIC VEHICLE-BRAKE.

SPECIFICATION forming part of Letters Patent No. 349,033, dated September 14, 1886.

Application filed July 10, 1886. Serial No. 207,704. (No model.)

To all whom it may concern:

Be it known that I, HENRY FATIC, a citizen of the United States, residing at Middletown, in the county of Henry and State of Indiana, have invented a new and useful Improvement in Automatic Vehicle-Brakes, of which the following is a specification.

My invention relates to an improvement in automatic vehicle-brakes; and it consists in the peculiar construction and combination of devices, that will be more fully set forth hereinafter, and particularly pointed out in the claims.

This invention is an improvement upon the vehicle-brake described in Letters Patent of the United States No. 341,325, granted to me May 4, 1886.

In the drawings, Figure 1 is a side elevation of the running-gear of a vehicle provided with my improved brake. Fig. 2 is a top plan view of the same. Fig. 3 is a detail sectional view. Fig. 4 is a detail perspective view showing a modified form of my invention. Fig. 5 is a similar view showing another modified form of my invention.

A represents the front axle; B, the front hounds; C, the tongue, which is pivoted between the said hounds in the usual manner.

D represents the rear axle.

E represents the rear hounds, and F represents the reach which connects the front and rear axles.

The usual bolsters are secured on the axles, as shown, and are provided with the standards to secure the wagon-bed on the bolsters. On the upper side of the outer end of the tongue is secured a longitudinally-movable rod, *a*, which is guided in keepers *b*, and is provided at its inner end with a coiled extensible spring, *c*, the function of which is to move the said rod normally toward the outer end of the tongue.

d represents a sheave or pulley, which is journaled in the outer end of the tongue.

The wheels on the rear axles have their hubs provided on their inner ends with serrated teeth *g*. The spindles of the rear axle are made longer than is usual, and on the inner ends of the said spindles are secured sliding clutches *h*, which are provided in their outer sides with serrated teeth adapted to engage with the teeth *g* of the rear wheels, so as to

lock the said clutches to the said wheels. These clutches are provided with annular grooves *i*, thereby forming annular collars *k* on the inner sides of the said grooves, and the said collars are cut away on their inner sides for a distance corresponding to about one-third the diameter of the said collars, thereby forming cams *l*.

On the under sides of the rear hound, E, is secured a transverse bar, E', and to the center of the said bar, on the under side thereof, are fulcrumed bell-crank levers *m*. Rods *n* extend from the rearward-projecting arms of the said bell-crank levers, and are connected to straps *o*, which encircle the grooves *i* of the sliding clutches.

p represents engaging arms, which extend outwardly from the rear axle, and are provided at their outer ends with projections *r*, which are adapted to enter the annular grooves *i* of the sliding clutches.

From the transverse extending arms of the bell-crank levers *m* extends a rod or chain, *s*, which passes over the sheave at the outer end of the tongue, and is connected to the front end of the longitudinally-movable rod *b*. To the said sliding rod *b* is attached the neck-yoke G.

H represents a whiffletree, which is attached to the tongue by means of a keeper, I, which allows the whiffletree to slide forwardly and rearwardly on the tongue for a slight distance.

K represents a cross-bar, which is attached to the reach F near the rear end thereof, and on the said reach and on the rear hounds is supported the brake-bar L, which is provided with the usual brake-shoes, M, at its extremities, adapted to bear against the peripheries of the rear wheels. Coiled retractile springs M' connect the ends of the cross-bar K with the brake-bar L, and the function of the said springs is to normally withdraw the brakes from the wheels. On the upper side of the rear hound, and near the rear ends thereof, is journaled a transverse rock-shaft, *t*, provided with crank-arms *t'* at its extremities. The said crank-arms are connected to the brake-bar L by means of rods *u*, and rods *u'* are pivoted to the flanges *k* of the sliding clutches, and have their front ends connected also to the crank-arms *t'*.

The brake-bar is provided on its under side,

at its center, with a series of ratchet-teeth, *I*'. A longitudinal slot is made in the rear portion of the reach under the brake-bar, and to the said reach, on the under side thereof, is attached a spring-detent, *v*, which engages the teeth *I*'. A bent rod or lever, *w*, is fulcrumed to the reach, and has one of its extremities connected to the detent *v*. The other end of the said bent lever is connected to the sliding whiffletree by means of a rod, *X*.

The operation of my invention is as follows: The sliding clutches are normally moved inwardly on the spindles, so as to be disengaged from the rear wheels, and the arms *p* of the rear axle are normally engaging with the annular grooves in the said sliding clutches and at one end of the recess or cam *l* of each clutch. On going down a grade the horses pull backwardly on the neck-yoke, thereby causing the sliding rod *b* to move rearwardly and partly turn the bell-crank levers *m*, and cause them to move the sliding clutches outwardly into engagement with the rear wheels. The clutches are thereby caused to rotate with the rear wheels, and as the said clutches are connected to the brake-bars, as hereinbefore described, it will be readily understood that the brakes will be applied to the wheels. As soon as the clutches have rotated through one-third of a circle, the arms *p* engage with the cams *l* of the said clutches and move the same inwardly out of engagement with the wheels. Brakes are held applied to the wheels by means of the spring-detent *v*, previously described, and when the bottom of the hill is reached and the horses pull forwardly on the sliding whiffletree the latter, being connected to the bent lever *w* by the rod *x*, releases the detent from the brake-bar, and the brakes are instantly released from the wheels.

In Fig. 3 I show a modified form of my invention, in which I discard the sliding clutches hereinbefore described, and provide the inner ends of the hubs of the rear wheels with gear-teeth *a'*. *b'* represents rocking spindles or arms, which have their inner ends attached to the center of the cross-bar *E'*, and on the free outer ends of the said rocking arms or spindles are secured geared segments *c'*, which are adapted to mesh with the gear-teeth *a'* of

the rear wheels. On the inner sides of the said segments are cams *d'*, and from the front side of the rear axle project tappet-arms *e'*, which are adapted to strike against the said cams after the segments move through one-third of a revolution, so as to disengage the said segments from the rear wheels. Levers *f'* are attached to the arms or spindles which carry the segments, and are also attached to the neck-yoke in the same manner as has been hereinbefore described, so that when the horses draw rearwardly upon the neck-yoke the segments are caused to rotate by becoming geared with the rear wheels, and apply the brakes, as previously described.

Fig. 4 shows another modified form of my invention, in which I omit the teeth *a'* and also the teeth of the segments, and thereby cause the segments to rotate with the rear wheels by means of frictional contact.

Having thus described my invention, I claim—

1. The combination of the brake, the clutches connected thereto and adapted to engage the wheels of the vehicle, means connecting the said clutches with the neck-yoke, for the purpose set forth, and the cams and tappet-arms to withdraw the clutches from the vehicle-wheels when the brakes are applied, substantially as described.

2. The combination of the neck-yoke, the bell-crank levers *m*, connected thereto, the clutches connected to the said bell-crank levers and adapted to engage the rear wheels of the vehicle, and the brakes connected to the said clutches, for the purpose set forth, substantially as described.

3. The combination of the sliding clutches connected to the neck-yoke of the vehicle and to the brakes, and adapted to engage the rear wheels of the vehicle, and the cams for withdrawing the said clutches from the said wheels, substantially as described.

In testimony that I claim the foregoing as my own I have hereto affixed my signature in presence of two witnesses.

HENRY FATIC.

Witnesses:

BENTON FATIC,

JOHN LEIBHARDT.