

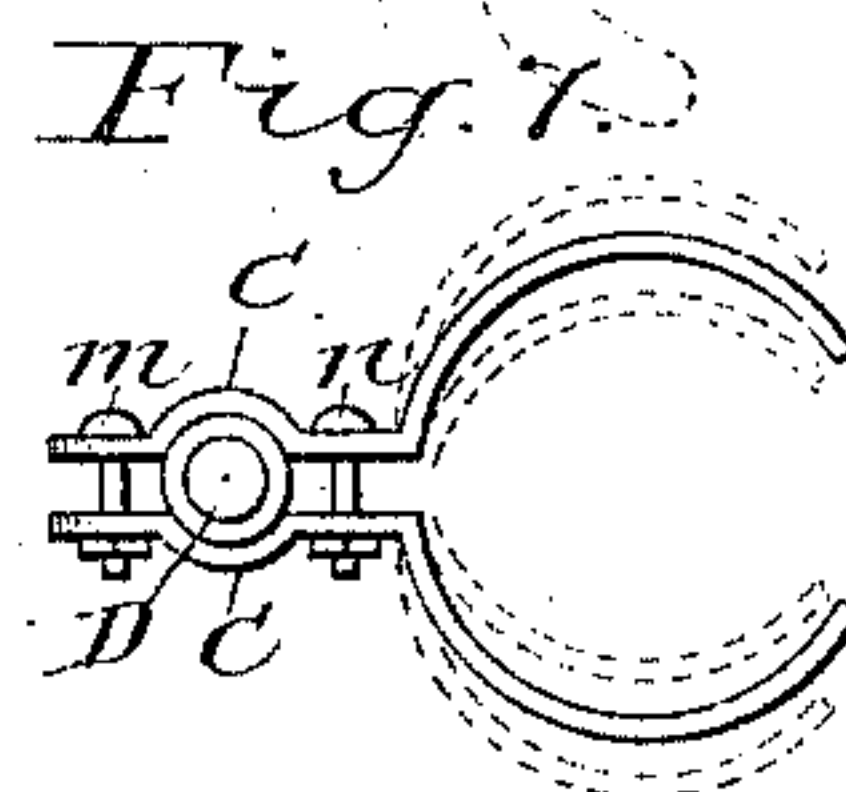
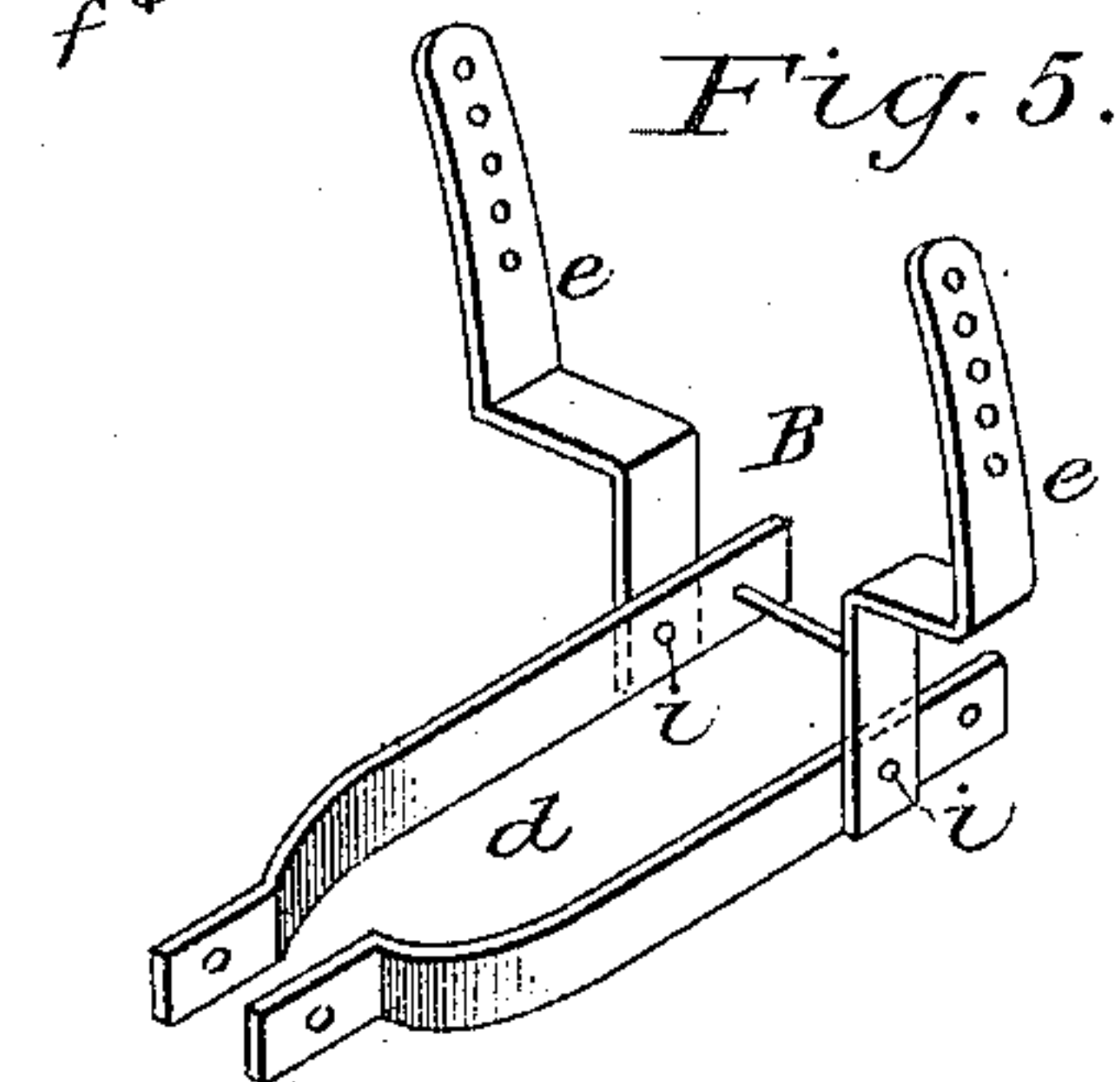
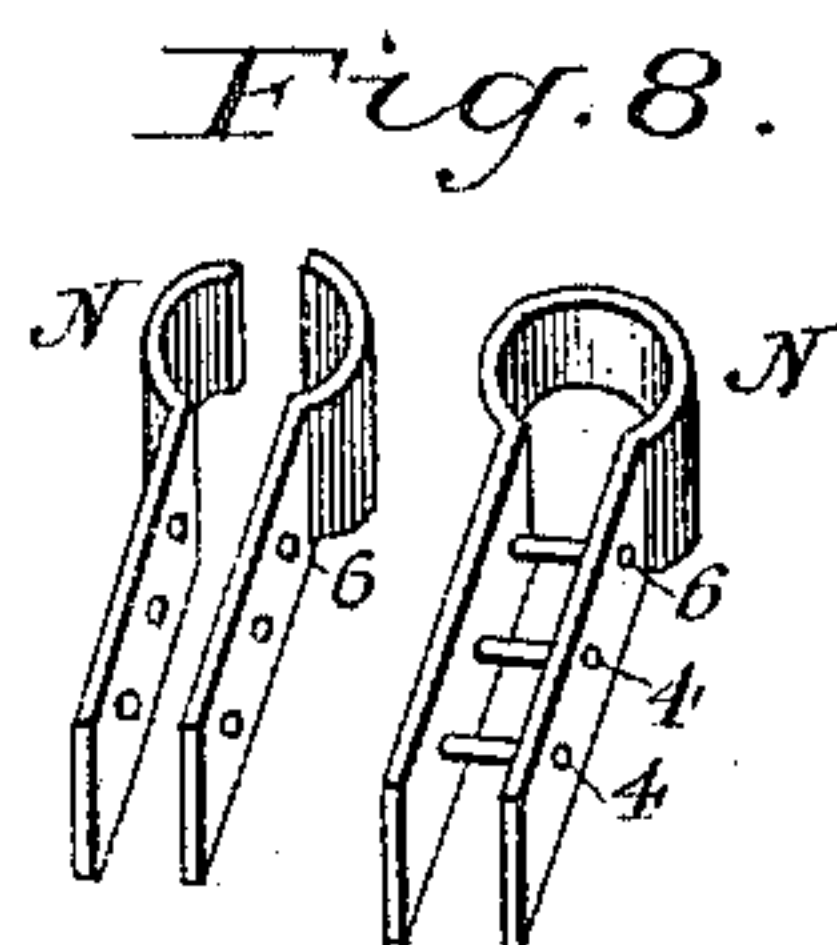
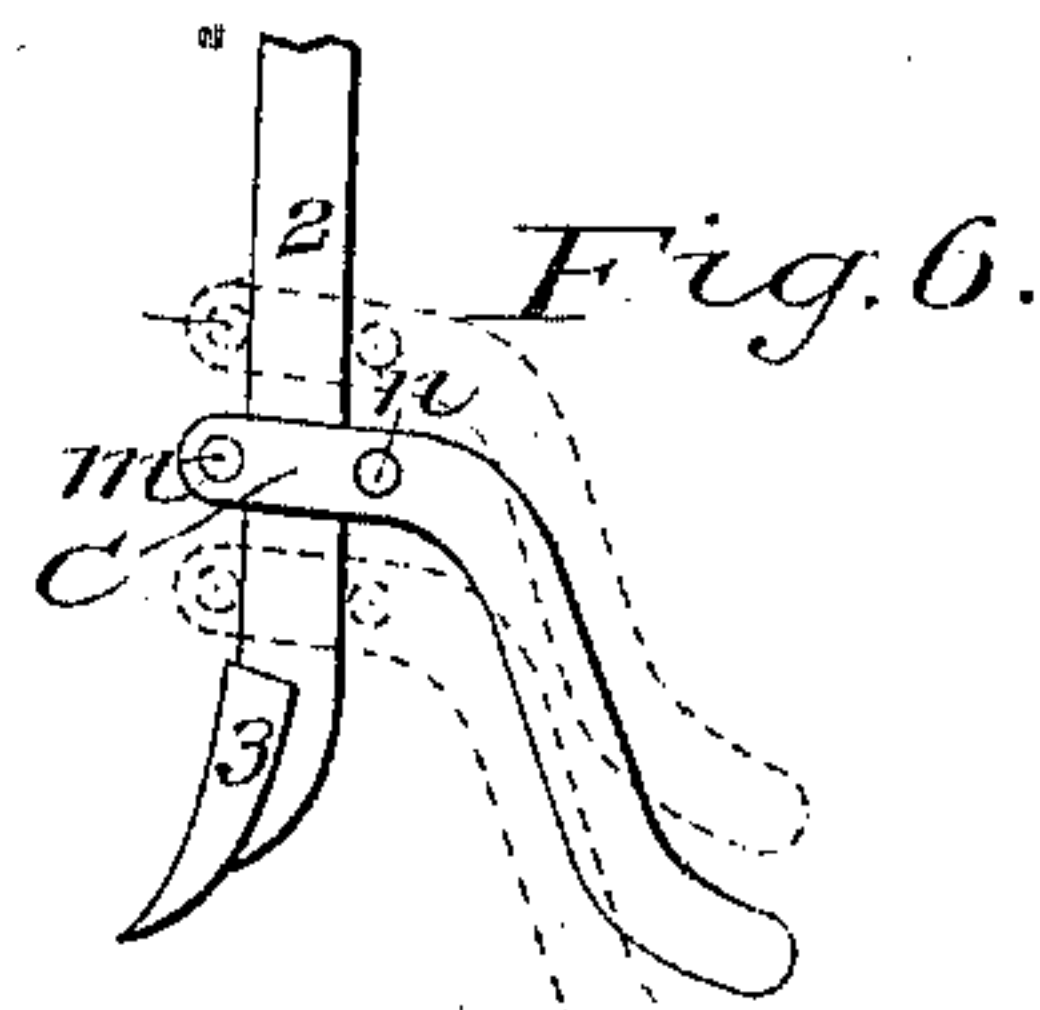
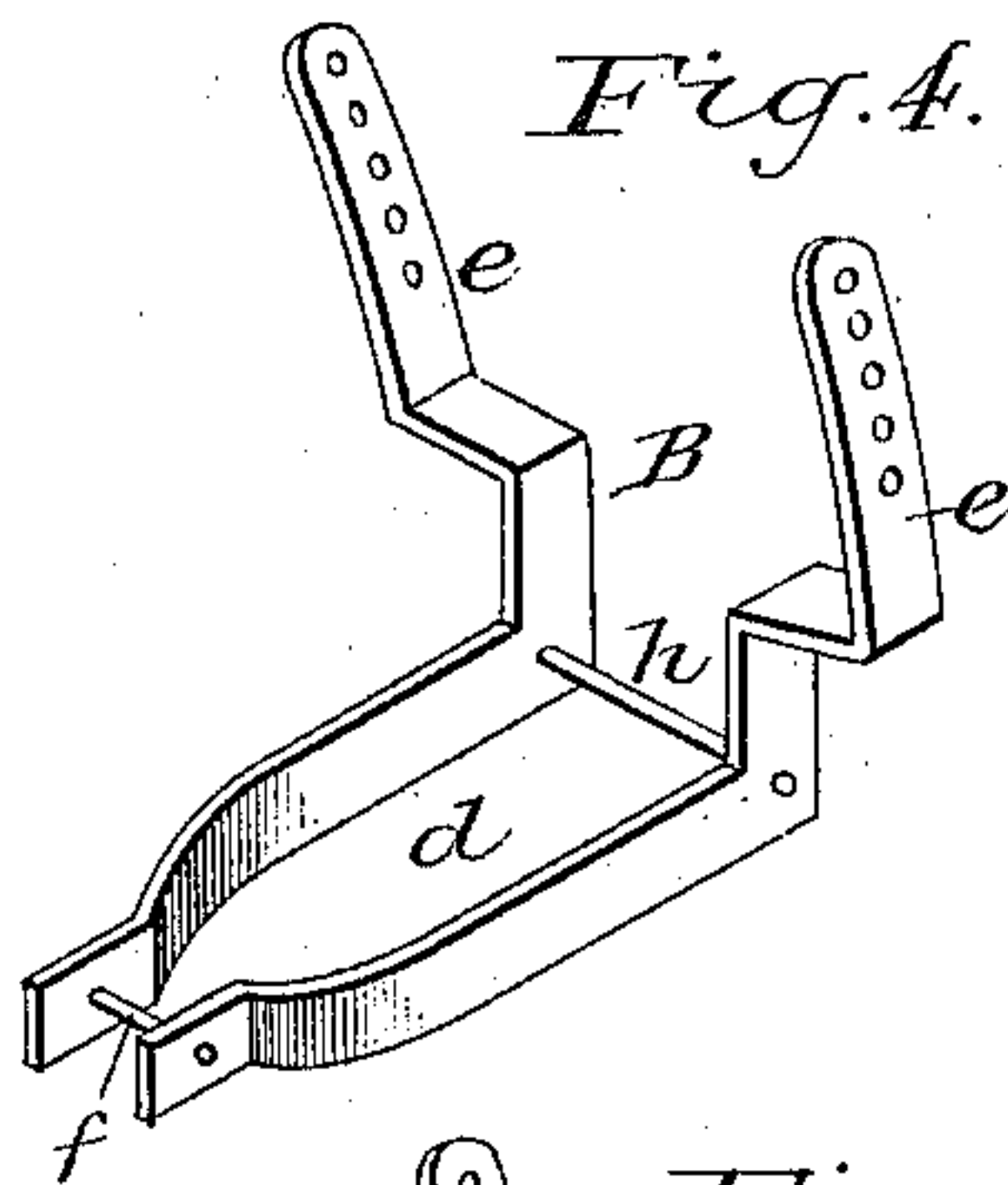
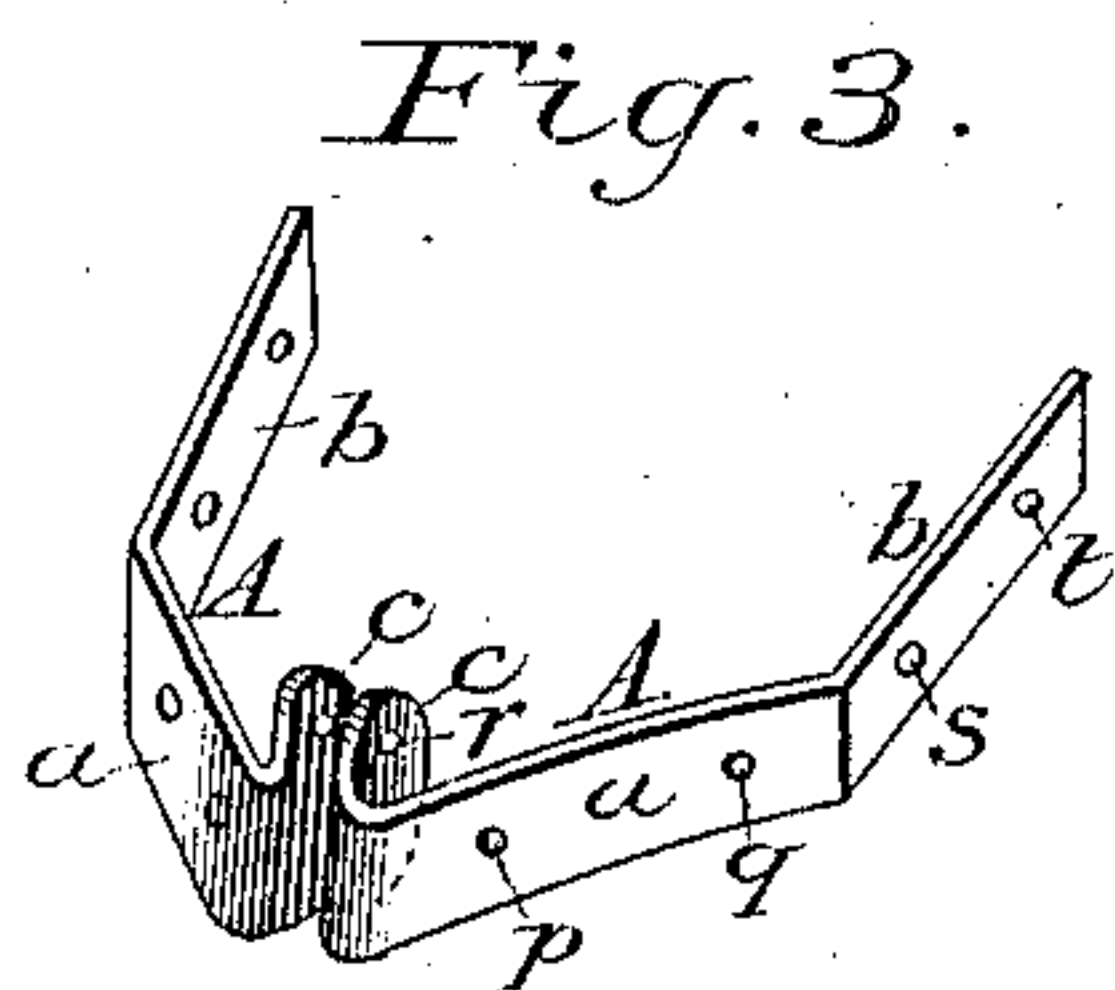
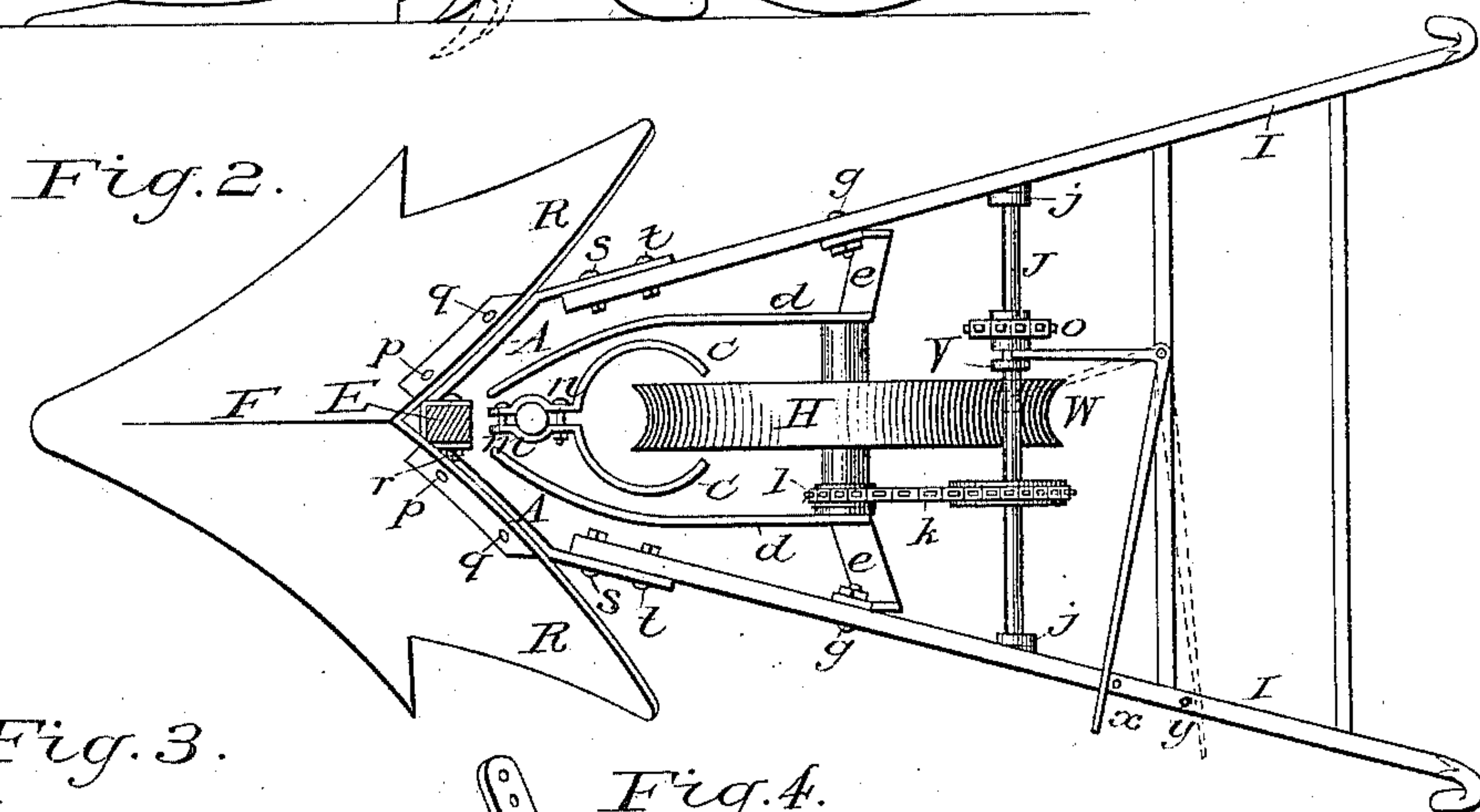
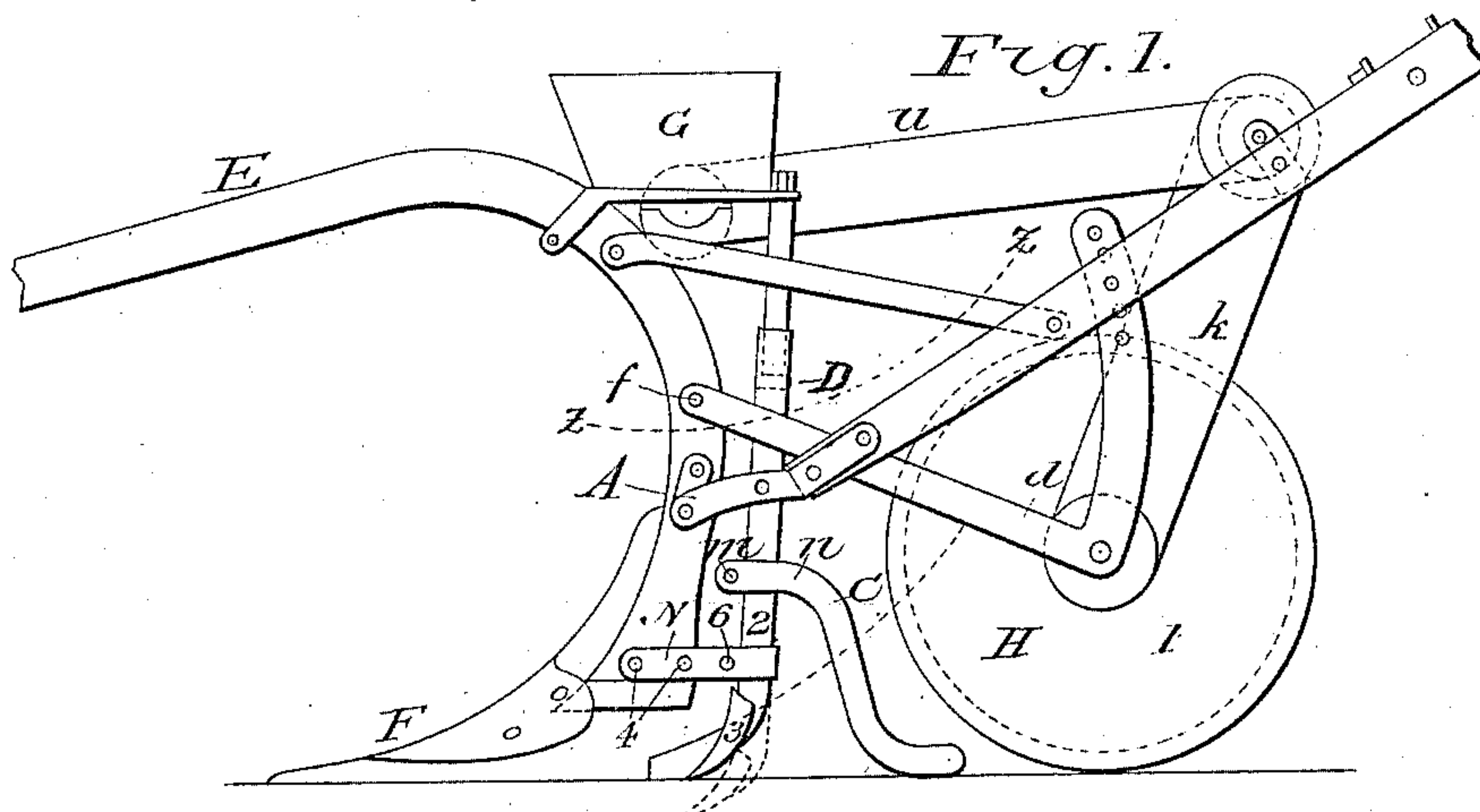
(No Model.)

T. PATES.

LISTING PLOW WITH PLANTING ATTACHMENT.

No. 301,148.

Patented July 1, 1884.



Witnesses:
E. L. Lane.
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Inventor.
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UNITED STATES PATENT OFFICE.

THOMAS PATES, OF ALTON, ILLINOIS, ASSIGNOR TO THE HAPGOOD PLOW COMPANY, OF SAME PLACE.

LISTING-PLOW WITH PLANTING ATTACHMENT.

SPECIFICATION forming part of Letters Patent No. 301,148, dated July 1, 1884.

Application filed February 23, 1884. (No model.)

To all whom it may concern:

Be it known that I, THOMAS PATES, a citizen of the United States, residing at Alton, in the county of Madison and State of Illinois, have invented a new and useful Improvement in Listing-Plows with Planting Attachments, of which the following is a specification.

The nature of my invention relates to listing-plows with planting attachments; and it consists in certain improvements, which will first be described in the specification, and afterward pointed out in the claims.

Referring to the drawings, like letters refer to like parts in all the figures, in which Figure 1 is a side elevation with the near mold-board removed, showing construction and combination of the parts. Fig. 2 is a plan or top view with the beam and parts above the dotted lines *z z* removed. Fig. 3 is a perspective view, enlarged, of the bracket A, showing how it is constructed with the three sections *a*, *b*, and *c*. Fig. 4 is a perspective view of the yoke B, showing how it is constructed of one piece in two sections, *d e*, on each side. Fig. 5 is a perspective view of the yoke B, showing how the sections *d e* may be constructed of separate pieces and united together by the bolt *i*. Fig. 6 is a side elevation, enlarged, of the covering-blades C, showing how they may be adjusted vertically on the drill-pipe D. Fig. 7 is a plan or top view of the covering-blades C, enlarged, showing how their rear ends may be adjusted laterally. Fig. 8 is a perspective view of the clamp N, showing how it may be constructed.

E represents the bent plow-beam, F the listing-plow, with mold-boards R R, and G represents the dropping-box, D the drill-pipe, H the wheel, and I I the handles, all of ordinary construction.

A represents a coupling-bracket of improved construction, in that it consists of a flat bar, bent as shown, by which it is divided into three sections, *a*, *b*, and *c*, with five perforations, *p*, *q*, *r*, *s*, and *t*, as shown. The section *a* is fitted to the back of the mold-board R, to which it is attached with bolts at *p q*. The end section, *c*, is bent rearward, fitting the side of the beam E, and attached thereto

by a bolt at *r*, and the section *b* is bent rearward in the direction of and by the side of the handle I, and to which the said handle may be attached by bolts at *s t*. The said brackets A are constructed in a pair, as shown in Fig. 3—one right hand, the other left—one on each side of the beam, affording a substantial and simple connection of the beam E and handles I to the two mold-boards R R of the plow F. The said brackets A may be made of cast malleable iron without departing from my invention.

B represents the yoke, consisting of two bars constructed in two sections, *d e*, the section *d* leading from the beam to the center of the wheel, and there bent upward, forming section *e*, which may have a bend outward, and thence upward by the side of the handle I. The forward end of the said yoke has a pivotal connection with the beam by means of the bolt *f*. The wheel H is journaled on the shaft *h*, which may be seated in the rear ends of the sections *d*, and the upper ends of the sections *e* attached to the handles I by the bolt *g*. Several perforations, which may be two or more, are shown in the upper part of section *e*, by which the said yoke may be adjusted vertically by changing the bolt *g* to some other of the perforations, and by which the wheel may be adjusted up or down to adjust it to the working of the plow, drill-tooth, and covering-blades, as will be understood by inspecting the drawings. The sections *d* and *e* may be constructed of separate bars and united together by a bolt, *i*, as shown in Fig. 5.

C represents the covering-blades, consisting of two thin flat bars of steel, the front ends of which clasp the drill-pipe D, and are provided with the bolts *m* and *n*, as shown; thence the blades are bent, curved downward and outward, curving to rearward and inward, as will be understood by the drawings. The said covering-blades are made adjustable up and down on the drill-pipe D, as shown by the dotted lines in Fig. 6, and the said blades may also be adjusted at their rear ends laterally to cover deeply or lightly, which may be done by loosening one of the bolts *m* or *n* and screwing up the other bolt, by which the blade will swing

on the drill-pipe, and their rear ends made wide apart or near together, as desired, as shown by the dotted lines in Fig. 7.

J represents an intermediate shaft, journaled in boxes *j*, attached to the handles I I. The said shaft receives rotary motion by the chain-belt *k*, leading from the pulley *l* on the hub of the wheel H. The pulley *o* imparts motion to the dropping-box by means of the chain-belt *u*, leading to a pulley on the dropping-box. The said pulley *o* has a stop and start motion given to it by means of the clutch *v* and lever *w*, by which, when desired to stop the seed dropping, the lever *w* is drawn back over the pin *y*, as shown by the dotted lines in Fig. 2, which draws the said clutch away from the pulley *o*, and it stops revolving, and by moving the lever forward over the pin *x* the said clutch engages the pulley *o* and starts the seed dropping.

D represents the drill-pipe, preferably constructed of gas-pipe, made in two parts—an upper part, 1, and a lower part, 2. The said upper part, 1, has its upper end attached to the dropping-box G, and its lower end telescopic into the upper end of the part 2, as shown in Fig. 1. The part 2 has a tooth or subsoil-blade, 3, on its bottom end, adapted to enter the ground below the working of the plow F, opening a slit along the center of the furrow made by the said plow. The said part 2 is attached to the beam E by means of the clamp N, which said clamp is secured to the said beam with bolts or rivets 4. The said clamp N is preferably made in two parts—one part on each side of the said beam—with their rear ends bent and embracing the said pipe, with a screw-bolt, 6, through the clamp just forward of the said pipe to compress the clamp upon the said pipe, and rigidly hold it in position, and by loosening the screw-bolt 6 the said pipe part 2 may be adjusted and moved up and down to any desired depth of working of the blade 3, as will be understood by Fig. 1 of the drawings. The said clamp N may be made of one piece bent about or over the said drill-pipe and its two legs upon either side of the beam, as will be understood by Fig. 8 in the drawings.

In operation, the plow F cleans away in ad-

vance a wide open flat furrow; the subsoil-blade 3, following, opens a slit along the center of the said furrow. The corn is then dropped through the drill-pipe D into the said slit, and is covered by the coverers C C, after which the wheel H follows, breaking lumps and clods, and compressing the soil over the planted corn.

My invention, although seemingly simple, enables me to make the listing-plow, and with planting attachment, of light weight, strong, and durable, at a less cost than heretofore.

Having thus set forth and described my invention, what I claim, and desire to secure by Letters Patent of the United States, is—

1. The bracket A, constructed with three sections, *a*, *b*, and *c*, substantially as shown, in combination with the mold-board R, the beam E, and handles I I, the said section *a* being attached to the mold-board, section *c* attached to the beam, and section *b* attached to the handle, substantially as and for the purpose set forth.

2. In a listing-plow provided with a bent beam, E, and two mold-boards, R R—one right, the other left of the beam—the combination of a pair of brackets attached to the said mold-boards, and with their front ends bent, fitting the side of the beam and attached thereto, and with their rear ends bent rearward, and with handles attached thereto, substantially as and for the purpose set forth.

3. The combination of the beam E and drill-pipe D with the clamp N, said clamp clasping the said drill-pipe, and attached to the said beam with bolts or rivets, and with the covering-blades C, adjustably attached to the said drill-pipe with bolts *m* and *n*, substantially as and for the purpose set forth.

4. In a listing-plow with planting attachment, the combination of the beam E, the plow F, with brackets A A, the dropping-box G, with drill-pipe D, covering-blades C, wheel H, with yoke B, and handles I I, the intermediate shaft, J, with clutch *v*, and lever *w*, belt *k*, and belt *u*, substantially as and for the purpose set forth.

THOMAS PATES.

Witnesses:

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WM. R. PINCKARD.