

(No Model.)

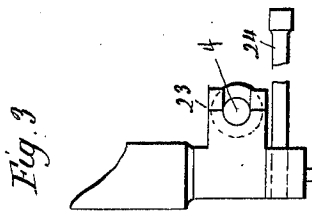
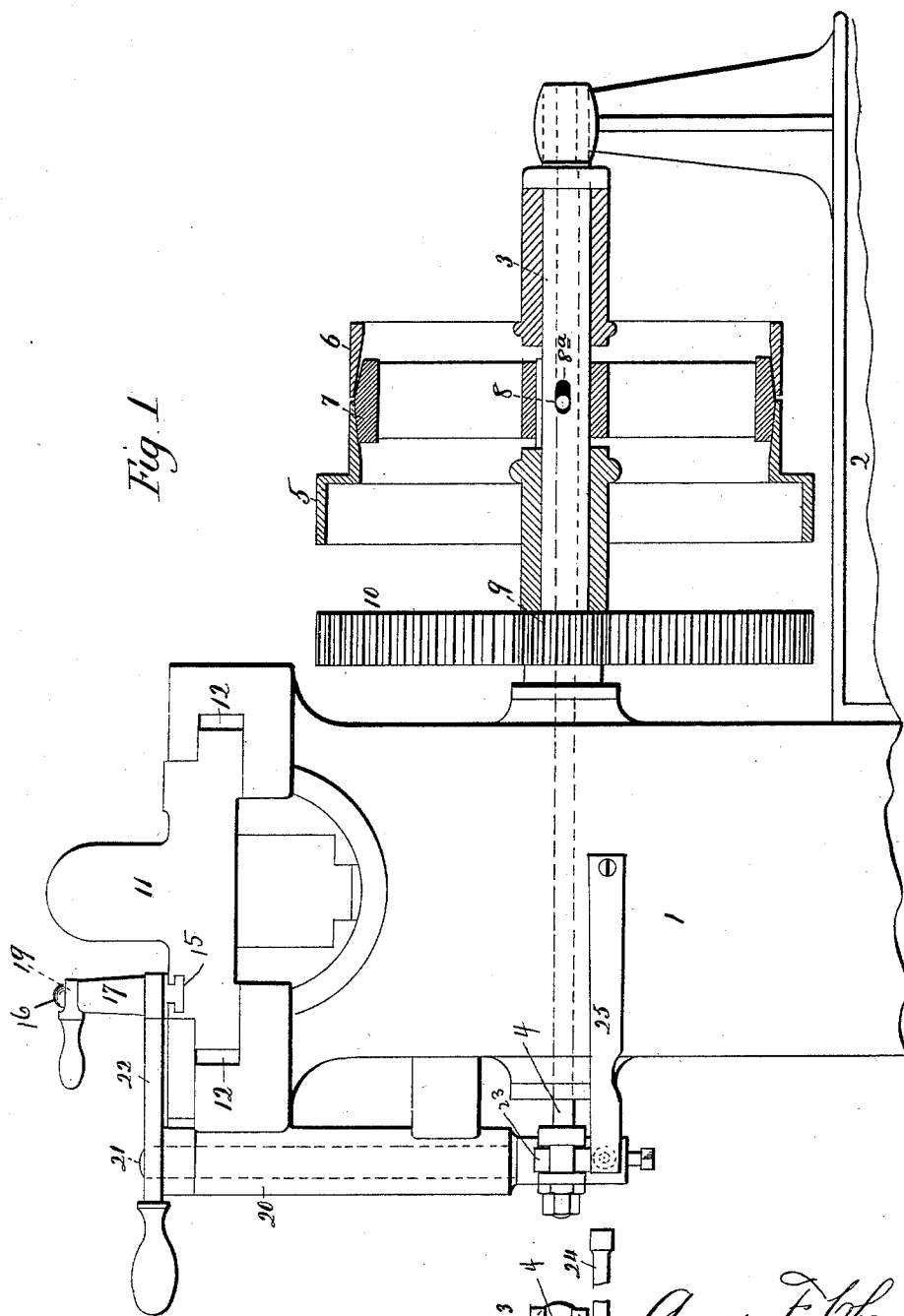
2 Sheets—Sheet 1.

A. F. CHAMPLIN.

REVERSING MECHANISM FOR METAL SHAPING AND PLANING MACHINES.

No. 519,941.

Patented May 15, 1894.



Witnesses.
J. H. Shumway
Lillian D. Kelsey.

Amos F. Champlin
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Carce & Seymour

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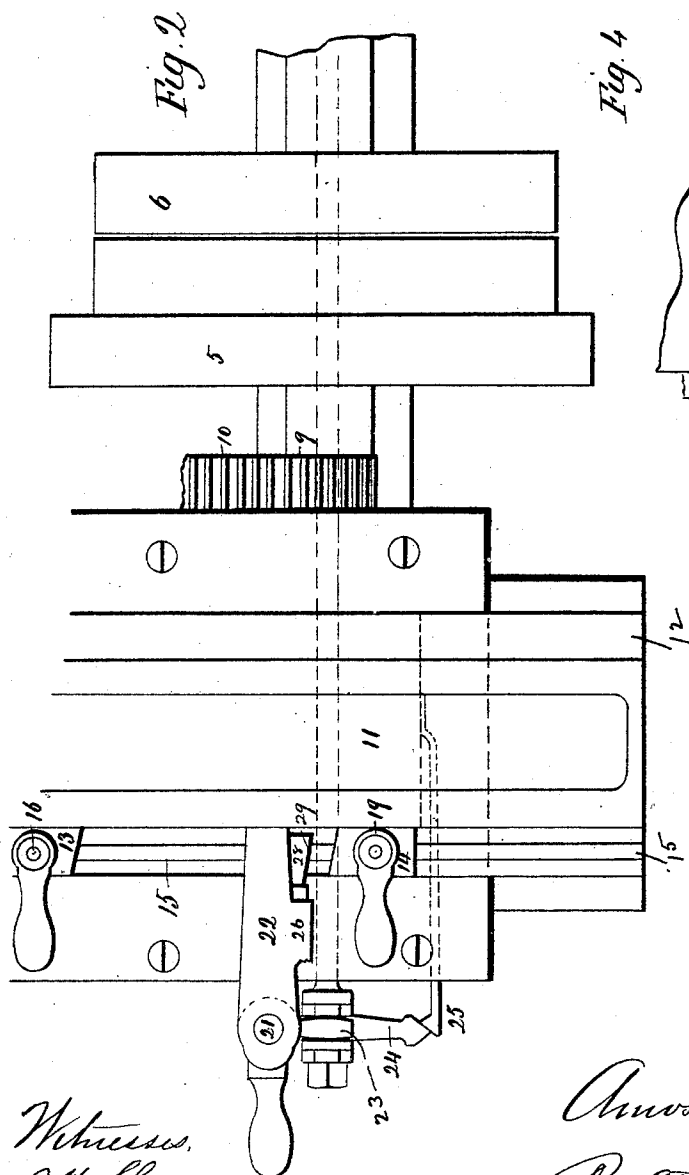
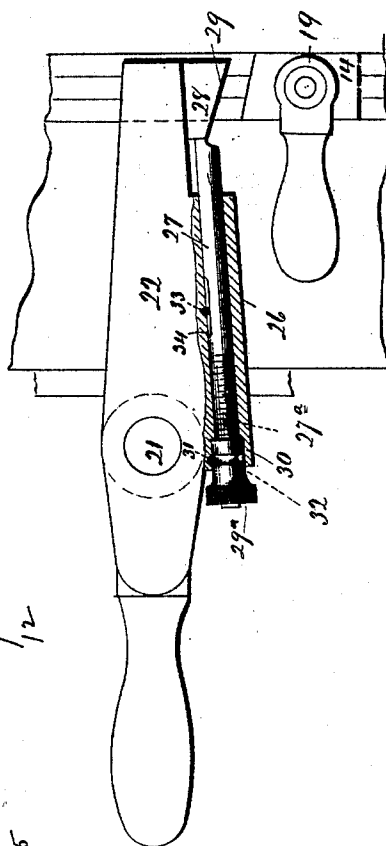


Fig. 4



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UNITED STATES PATENT OFFICE.

AMOS F. CHAMPLIN, OF WATERBURY, ASSIGNOR TO THE HENDEY MACHINE COMPANY, OF TORRINGTON, CONNECTICUT.

REVERSING MECHANISM FOR METAL SHAPING AND PLANING MACHINES.

SPECIFICATION forming part of Letters Patent No. 519,941, dated May 15, 1894.

Application filed July 24, 1893. Serial No. 481,327. (No model.)

To all whom it may concern:

Be it known that I, AMOS F. CHAMPLIN, of Waterbury, in the county of New Haven and State of Connecticut, have invented a new Improvement in Reversing Mechanism for Metal Shaping and Planing Machines; and I do hereby declare the following, when taken in connection with accompanying drawings and the figures of reference marked thereon, to be a full, clear, and exact description of the same, and which said drawings constitute part of this specification, and represent, in—

Figure 1, an end view of the machine to which my improvement is applied; Fig. 2, a plan view thereof; Fig. 3, a detail view of the forked bearing and arrow-head projection; Fig. 4, a detail plan view of the reversing lever and my improvement.

My invention relates to improvements in reversing mechanism of metal shaping and planing machines, its object being to provide what I term a "micrometer adjustment," which is applied to the reversing lever for the purpose of adjusting the length of stroke of the carriage.

It consists broadly in an adjustable contact-piece on the reversing-lever, against which one of the dogs on the carriage impinges. The face of the contact-piece is oblique, and gives it a tapering form.

The drawings disclose a shaping and planing machine of ordinary construction, but I desire it understood that the "micrometer adjustment" which is used, may be applied to any shaper or planer which has a reversing lever.

A brief description of the machine shown will suffice for a clear understanding of my present improvement.

The bed 1, supports a bracket 2, at one side. The bed and bracket provide bearings for a tubular shaft 3, within which turns another shaft 4, which extends entirely across the bed 1. On the tubular shaft 3, are mounted loose pulleys 5, 6, which revolve in opposite directions, and are adapted to be engaged by a friction pulley 7, having slot and feather connection with the tubular shaft 3, which shaft is caused to revolve with internal shaft 4, by reason of the pin 8, connecting shaft 4 and

pulley 7, and passing through the slot 8^a in the said tubular shaft 3.

9 is a pinion carried by tubular shaft 3, which intermeshes with large gear-wheel 10, which in turn drives the planer-carriage 11, through the medium of suitable gearing of ordinary construction, which I do not deem it necessary to show in detail. The planer carriage 11, travels in the usual ways 12, at the top of the bed 1, and is provided with the usual dogs 13, 14, which are adjustable in the grooved way 15 of said planer carriage. The grooved way 15 is under-cut, as shown in Fig. 1, so as to receive the enlargement at the lower ends of the bolts 16, whereby said dogs are secured to the carriage. For accomplishing this purpose, sleeves 17 surround the bolts 16, and between the heads 18 at the upper end of the bolts and the said sleeves, cam-levers 19 turn on the bolts. Swiveled in a vertical bearing 20, located at one side of the bed-plate, is an oscillating shaft 21, which carries at its upper end a reversing lever 22. The lower end of the oscillating shaft 21 is provided with a lateral forked bearing 23, in which the inner end of the shaft 4, turns, and by which said shaft 4, is shifted longitudinally when the shaft 21 is oscillated. The shaft 4, is held in its respective inner and outer positions by means of an arrow headed projection 24, extending laterally from the oscillating shaft 21, which projection is engaged by a catch 25, projecting from the bed 1.

I now come to the description of my present improvement. At one side of the reversing lever 22, is located a longitudinal housing 26, within which is adapted to slide a stem 27, of a contact-piece 28, which is located at the inner end of the reversing lever. This contact-piece 28 has an oblique face 29, which gives to the contact-piece a form enlarging or tapering from the stem 27 out to its end. The contact-piece 28 is adjusted in and out by means of a milled nut 29^a, having an annular boss 30, which turns within the outer end of the housing 26, and is prevented from being displaced by means of a pin 31, which is received by an annular groove 32, in the periphery of the boss 30, and which is provided with internal screw-threads to receive the

screw-threaded end 27^a, of the said stem 27. The adjustment of the contact-piece 28 in either direction, is limited by means of a stop-pin 33 which passes through the housing 26, and engages in a longitudinal recess or cut-away 34 in the stem 27. From the description of this "micrometer adjustment," it is evident that when the planer tool does not come just where it is wanted, and it be desired that the movement of the carriage be limited in one or the other direction, it is simply necessary to properly turn milled nut 29^a, so as to move the contact-piece transversely of the path of the carriage and shift the surface or face 29 of the same which is engaged by the dog 14.

It will be observed that inasmuch as the contact surface is adjusted at a point outside of the path of the dog, and in a line at a right angle thereto, the dog may be brought to the exact point where it is desired that the reverse movement shall take place, and the contact-piece then adjusted until it is in contact with the dog. I am thus enabled to time the action of the machine very closely, and with more accuracy than I could time it by means of a contact piece adjustable in a line coincident with the path of the dog, and requiring the dog and contact-piece to be separated for the adjustment of the latter.

I am aware that it is not new to reverse the movement of a reciprocating carriage by means of a dog thereon impinging against an adjustable contact carried by the reversing lever, which contact enables an adjustment of the time when the movement of the carriage is to be reversed, and hence I do not claim such construction broadly.

Having fully described my invention, what I claim as new, and desire to secure by Letters Patent, is—

1. In a metal-shaping and planing machine, the combination with the reciprocating carriage thereof, of a dog mounted upon the said carriage, a reversing lever, a contact-piece carried by the said lever and extending into the path of the dog, and means for adjusting the said contact-piece at a right angle to the path in which the dog moves and at a point

to one side of their engagement, substantially as described, and whereby the dog and contact-piece may be brought together, and the latter adjusted to the former.

2. In a metalshaping and planing machine, the combination with the reciprocating carriage thereof, of a dog mounted on the said carriage, a reversing lever, a contact-piece having an oblique face carried by the said lever, and means for adjusting the said contact-piece at a right angle to the path of the dog, and at a point outside of their engagement, substantially as set forth, and whereby the contact-piece and dog may be brought together for the adjustment of the former.

3. In a metal shaping and planing machine, the combination with the reciprocating carriage thereof, of a dog, a reversing lever extending into the path of the dog, a contact-piece carried by the said lever, and provided with a stem or shank by means of which it is held in place, and means applied to the said stem or shank for adjusting the contact-piece at a right angle to the path of the dog, substantially as set forth.

4. In a metal shaping and planing machine, the combination with a reversing lever constructed with a housing, of a contact-piece provided with a stem adapted to be moved longitudinally in said housing, and means applied to the outer end of the said stem for moving it longitudinally and hence adjusting the contact-piece, substantially as described.

5. In a metal shaping and planing machine, the combination with a reversing lever constructed with a housing, of a contact-piece provided with a stem which is located in the said housing, means for limiting the longitudinal movement of the said stem in the housing, and an adjusting nut applied to the stem for moving the same longitudinally, substantially as described.

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

AMOS F. CHAMPLIN.

Witnesses:

L. A. PLATT,
JAY H. HART.