

No. 621,221.

Patented Mar. 14, 1899.

W. H. BUTLER.

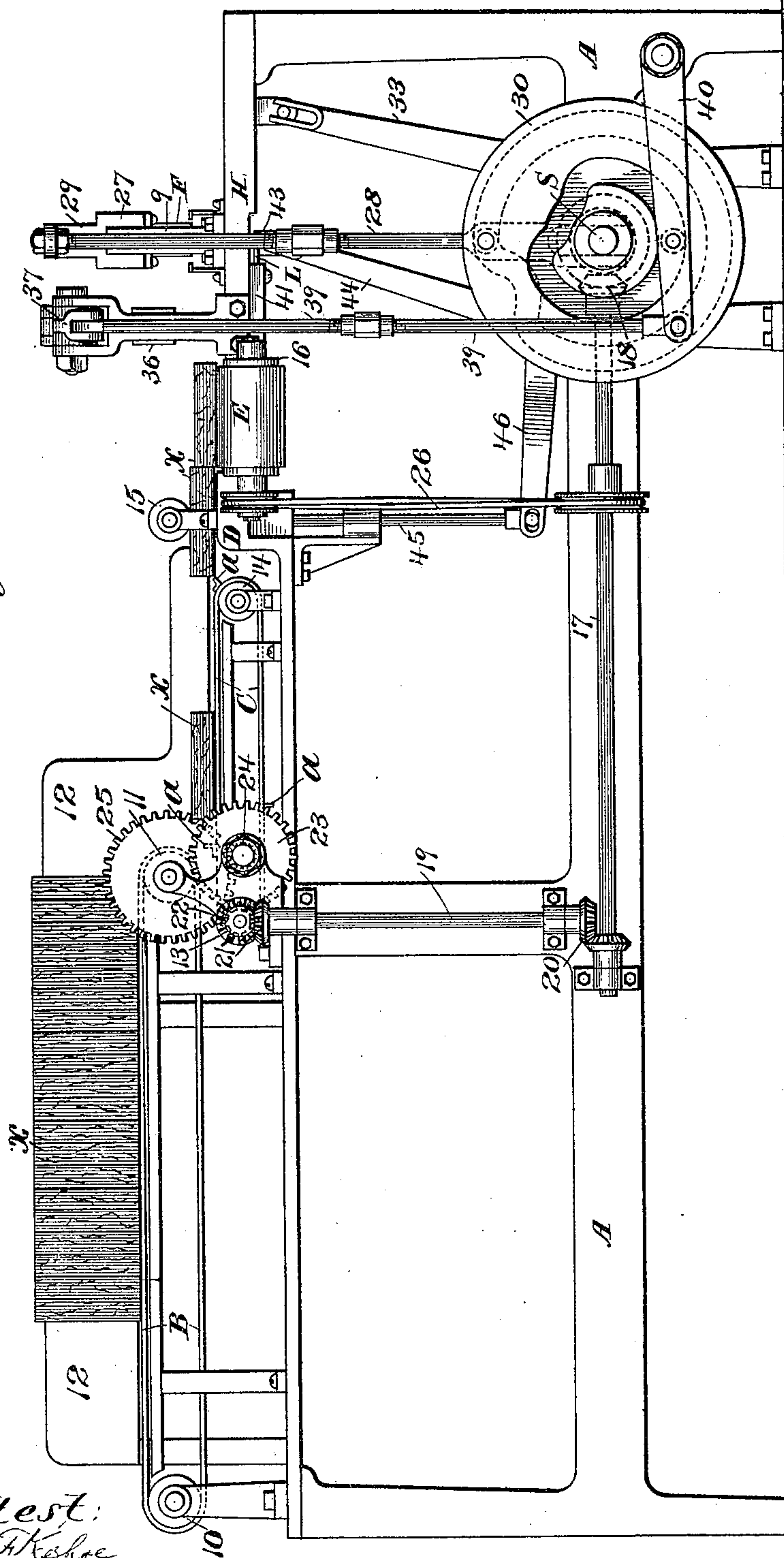
MACHINE FOR ATTACHING TAGS TO PLUG TOBACCO.

(Application filed Jan. 13, 1898.)

(No Model.)

4 Sheets—Sheet 1.

Fig. 1.



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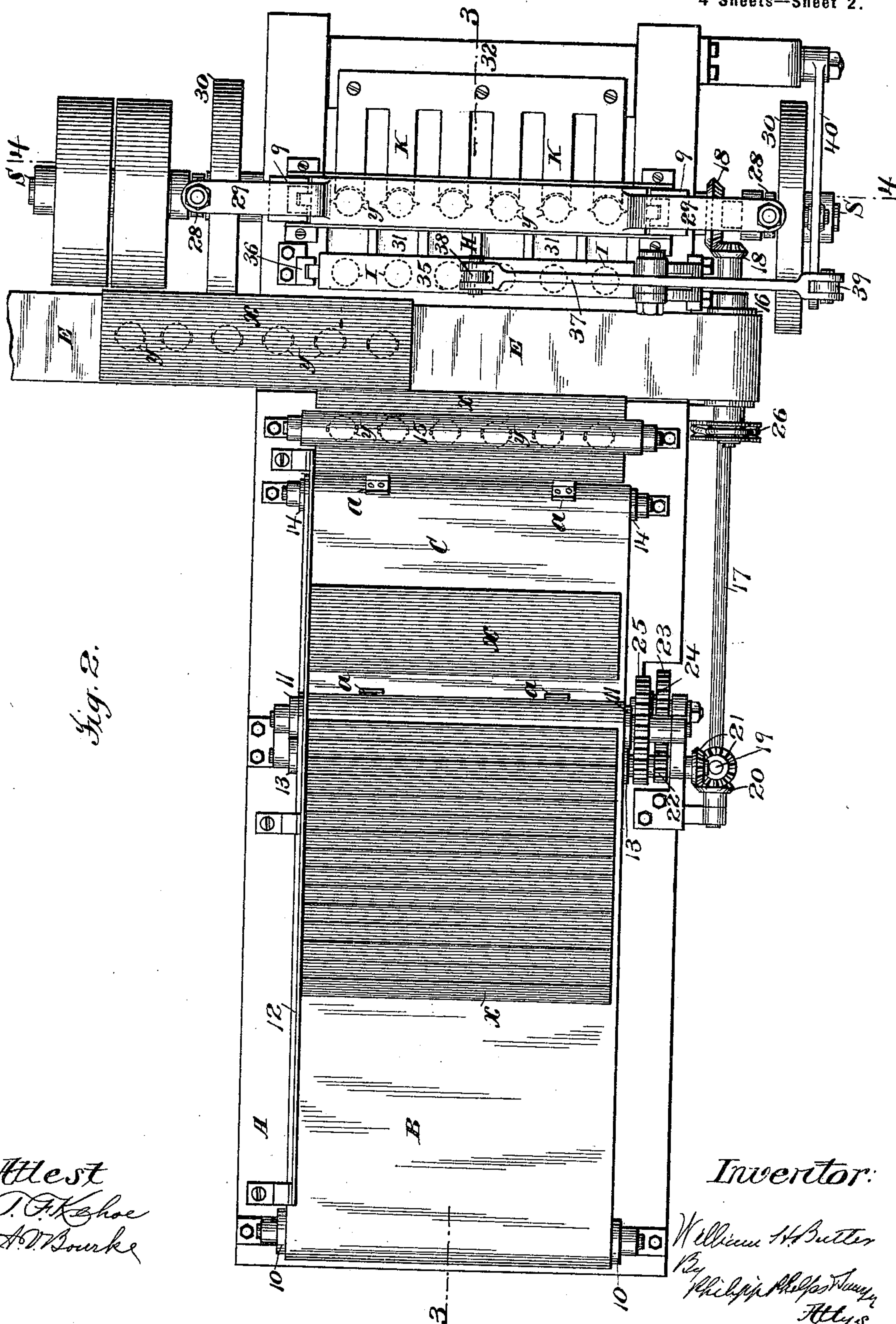


Fig. 2.

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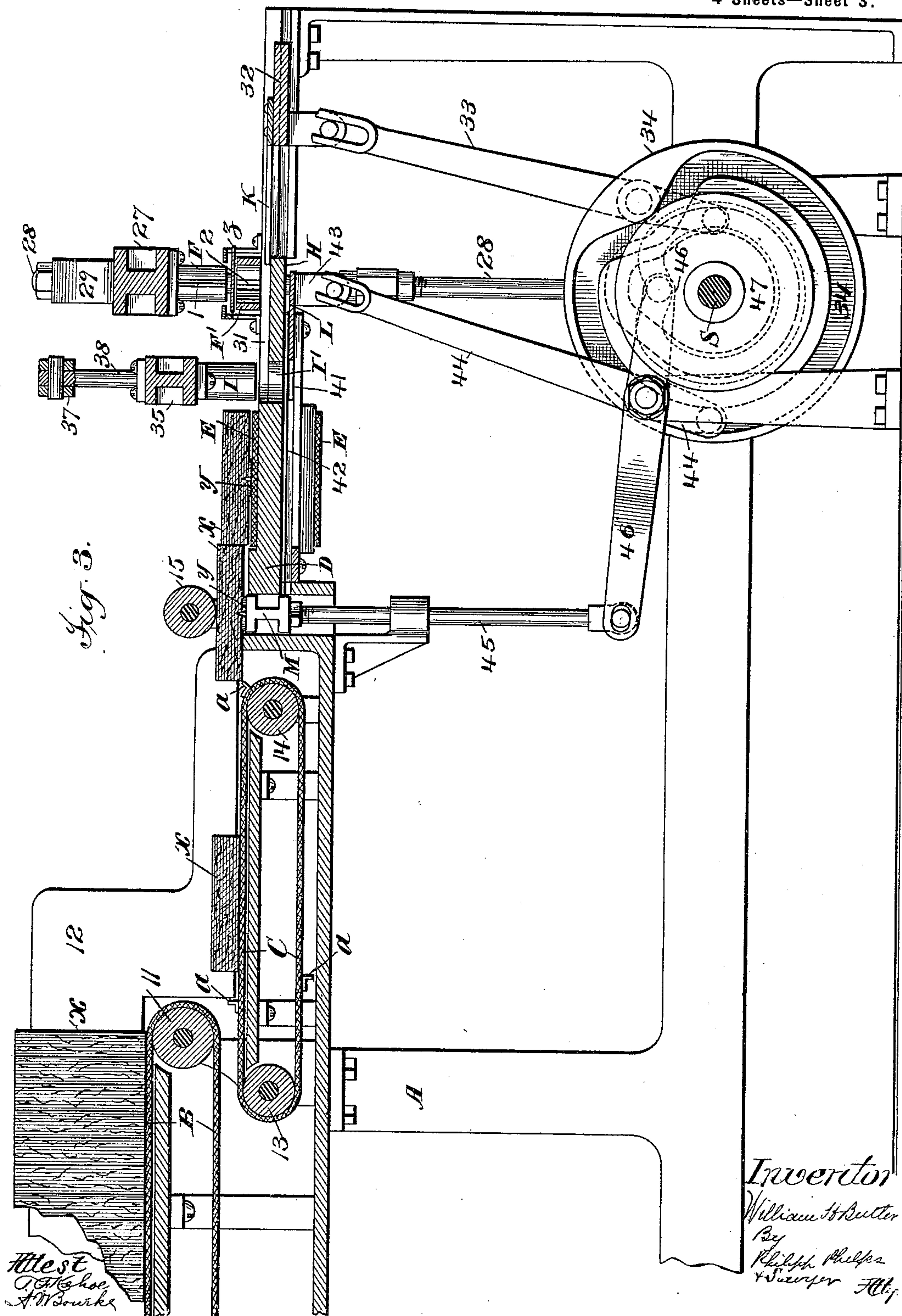
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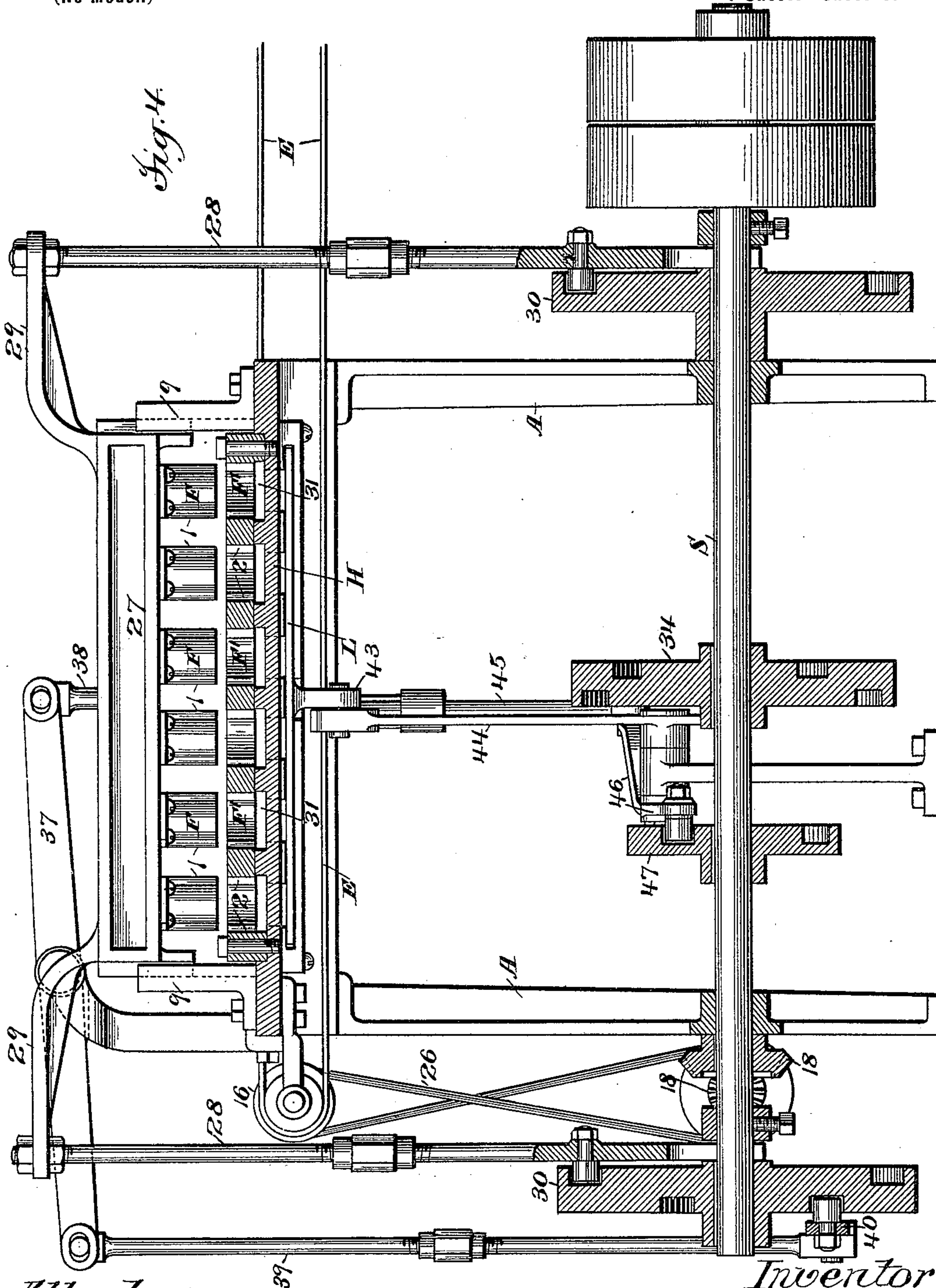
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UNITED STATES PATENT OFFICE.

WILLIAM H. BUTLER, OF HARRISON, NEW YORK.

MACHINE FOR ATTACHING TAGS TO PLUG-TOBACCO.

SPECIFICATION forming part of Letters Patent No. 621,221, dated March 14, 1899.

Application filed January 13, 1898. Serial No. 666,490. (No model.)

To all whom it may concern:

Be it known that I, WILLIAM H. BUTLER, a citizen of the United States, residing at Harrison, county of Westchester, and State of New York, have invented certain new and useful Improvements in Machines for Attaching Tags to Plug-Tobacco or the Like, fully described and represented in the following specification and the accompanying drawings, forming a part of the same.

In the preparation of plug-tobacco for the market it is usual to affix to each plug a small tag of thin sheet metal by forcing into the plug pointed projections or prongs on the tag. The present invention has been made in connection with devising a machine for attaching tags to tobacco in this manner, the especial object being to provide a simple and efficient machine for doing this work, and the invention will be illustrated and described as applied to a machine of this specific class, although many of the features of the invention are applicable also in attaching tags of other form and to other articles than plugs of tobacco.

For a full understanding of the invention a detailed description of a machine embodying all the features of the same in the preferred form as applied to a machine for attaching tags to plug-tobacco will now be given in connection with the accompanying drawings, forming a part of this specification, and the features forming the invention will then be specifically pointed out in the claims.

In the drawings, Figure 1 is a side elevation of the machine. Fig. 2 is a plan view of the same. Fig. 3 is a longitudinal section on the line 3 of Fig. 2. Fig. 4 is a cross-section on the line 4 of Fig. 2.

Referring to the drawings, A is the frame of the machine, at the top rear end of which is a wide feeding-belt B, mounted on belt-rolls 10 and 11 and adapted to carry forward a number of long plugs *x*, placed on one of their side edges, the proper position of the plugs being secured by the attendant evening them against the side guides 12. Below the belt B and running in the same direction from a point behind the front belt-roll 11 is another wide belt C, which receives the plugs singly from the belt B as they fall off the belt B at the belt-roll 11, this belt C prefer-

ably being provided with feeding lugs or projections *a*, by which the positive feeding forward of the plugs with the belt is secured and the plug pushed over the table and beneath the pressure-roller hereinafter described. The belt C has the belt-rolls 13 14 and is driven at a much higher speed than the belt B, so that the belt B deposits but a single plug upon the belt C to each of the feeding projections *a*, carried by the latter, three sets of such feeding lugs or projections being shown. While a single wide belt is shown in both cases, it will be understood that either or both belts B C may be formed of a series of narrow belts or in any other suitable manner.

The belt C feeds the successive plugs onto and over a table D and beneath a pressure-roller 15, mounted above the table over a vertically-moving plunger hereinafter described, by which the prongs of the tags are forced into the plugs, and a series of tags thus attached to the under side of each plug. In a depression in the table D on the opposite side of the roller 15 from the belt C, so that each plug as it is advanced over the table D by the belt C will force the preceding plug, with the tags attached, out from under the roller 15 and onto it, is a belt E, running at right angles to the line of feed of the belts C D and acting to deliver the tagged plugs from the machine. The belt E is carried by belt-rolls, of which the driving-roll 16 only is shown, this belt preferably carrying the plugs entirely outside the machine and to any suitable receptacle. They may then be cut up into small plugs, each with a tag attached, by any suitable mechanism or by hand, as sold by the retailer.

The belts B C E may be driven by any suitable means, but are shown as driven from the main driving-shaft S as follows: A shaft 17, extending longitudinally of the machine, is driven from the main shaft S through beveled gears 18 and in turn drives a vertical shaft 19 through beveled gears 20, and this shaft 19, through bevel-gear 21, drives the shaft of the rear belt-roll 13 of belt C, and this shaft carries a gear 22, which meshes with a large gear 23 on a stud mounted in the frame and carrying a small gear 24, which meshes with a large gear 25 on the shaft of the front belt-roll 11 of belt B. The belt-roll

16 of belt E is driven from shaft 17 through pulleys and belt 26.

In the machine illustrated the mechanism for forming the tags is placed at the opposite side of the belt E from the plug-feeding mechanism above described, and the tags are fed to the tag-attaching mechanism in a direction opposite to the feed of the plugs. This tag forming and feeding mechanism will now be described.

At the opposite end of the machine from the belt B is arranged across the machine in a line parallel with the length of the plugs as they are advanced by the belts B C a series of tag-cutting devices, each consisting of a punch F and die F', the punches and dies of the series being arranged at the distance apart at which it is desired to place the tags in the plugs. The punches F are carried by a head 27, moving vertically in grooved guides 9 and actuated by cam-rods 28 at opposite sides of the machine, connected to arms 29 on the head 27 and carrying bowls running in cam-grooves in cam-disks 30 on the shaft S, the throw of the punches F by the cam-disks 30 and connections being such as to cut tags γ from a strip of metal z , placed in position between the punches and dies, and force the tags thus cut through the dies F' and into guideways 31 on table H below the dies.

In the construction shown the tags γ are circular and provided with two prongs, one on each side, by which they are attached to the tobacco-plugs. The punches F and dies F' are circular in form, and the punches are provided at opposite sides with triangular projections 1, coacting with similarly placed and formed grooves 2 in the dies F' to form these prongs. It will be understood, however, that the tags may be of oval or any other desired form and that a different number of attaching-prongs may be used, the punches and dies being suitably varied in construction.

As formed by the punches F and dies F' in the construction shown, the tags are flat, and the next step is the turning up of the prongs at right angles to the body of the tags, so that they may be driven into the plugs and the tags thus attached to the latter. For this purpose the tags, with the prongs flat, are advanced edgewise along the guideways 31 on table H to and beneath a series of plungers I, which plungers force the tags through dies I', formed by round openings in the table H and which are made to fit the body of the tag closely, so that as the tags are thus forced through the dies the prongs will be turned up. The tags are fed through the guideways 31 in the table H by a series of feeding-plungers K, carried by a head 32 and actuated by a cam-lever 33 and having a bowl which runs in a cam-groove in a cam-disk 34 on the driving-shaft S, each feeding movement of the feeding-plungers K thus carrying a series of tags into position beneath the plungers I at each movement of the plungers K. The vertically-moving plungers I are carried by a le-

ver 37, connected to the head by rod 38 and connected by links 39 to a cam-lever 40, having a bowl which runs in a cam-groove in one of the cam-disks 30 on driving-shaft S.

The plungers I force the tags through dies I' onto a support 41 below the table H, and the tags now fully formed and with their prongs turned up for attachment to the plugs are advanced edgewise over support 41 through guideways 42 by feeding-plungers L, which are carried by head 43, actuated by cam-lever 44, having a bowl running in a cam-groove in cam-disk 34 on driving-shaft S, and a series of tags is thus advanced at each movement of the feeding-plungers L into position above the reciprocating attaching-plunger M. The plunger M, as above stated, lies directly below the pressure-roll 15, so that the attaching pressure of the plunger is resisted by the roll, and the upper surface of the plunger is substantially level with the surface of the support 41 as the tags are fed over the support onto the plunger. The plunger M is raised at the proper time to press the tags against the plug of tobacco beneath the roller 15, and thus force the prongs into the tobacco by its vertical stem 45, connected to a cam-lever 46, having a bowl which runs in a cam-groove in cam-disk 47 on driving-shaft S.

The operation of the machine will be understood from the drawings and the above description of the different parts and their action, so that no further detailed description of the general operation of the machine is necessary. The parts are shown in the position they occupy just as a series of tags have been attached to the under side of a plug by the plunger M, acting against the pressure-roller 15, the advance of this plug over the table D and beneath the roll 15 by one of the feeding lugs or projections a on the belt C having forced the preceding tagged plug out from under the roller and onto the belt E, which is now carrying it away for delivery. The next plug has been delivered by the belt B to the belt C and is being advanced by the latter for the attachment of the tags thereto, and the punches F are just about to be lowered for cutting another series of tags from a metal strip z , which has meanwhile been placed in position by the operator, the feeding-plungers K L being withdrawn, so as to be in position for feeding the tags forward successively as the tags are brought into position in front of the feeding-plungers by the punches F and prong-bending plungers I.

The construction above described embodies the features of the present invention in their preferred form; but it will be understood that these features may be embodied in a machine of other construction than that shown and the plug-feeding devices may be applied to a machine in which the tags are wholly or partially formed prior to their introduction into the machine or in which plugs of tobacco or similar articles are to be fed forward in proper time for other purposes than attaching tags.

While the machine shown attaches a series of tags simultaneously and one object of the invention is to provide a construction for this purpose, the broad features of the invention may be applied also in machines for attaching a single tag. It will be understood also that suitable mechanism for feeding the metal strips for the tags and removing the strips after the tags are cut therefrom may be used in connection with the machine shown, if desired, instead of requiring the operator to place the successive strips in position beneath the dies and remove the strips after the tags are cut therefrom and that many modifications may be made in the form and arrangement of the devices shown for embodying the invention without departing therefrom.

What I claim is—

1. The combination with means for advancing plugs of tobacco or similar articles, of feeding mechanism for advancing simultaneously a series of pronged tags edgewise, and tag-attaching mechanism for simultaneously forcing the prongs into the article to attach the tags, substantially as described.

2. The combination with means for advancing plugs of tobacco or similar articles, of feeding mechanism for advancing simultaneously a series of pronged tags edgewise, tag-attaching mechanism for forcing the prongs into the article to attach the tags simultaneously, and means for feeding the tagged articles from the attaching mechanism, substantially as described.

3. The combination with means for advancing plugs of tobacco or similar articles, of tag-feeding, prong-bending, and tag-attaching mechanism, for feeding a series of tags edgewise, forming the prongs thereon, and attaching them to the article simultaneously, substantially as described.

4. The combination with means for advancing plugs of tobacco or similar articles, of prong-bending mechanism for forming prongs on a series of tags simultaneously, tag-attaching mechanism for attaching the tags simultaneously, and means for advancing the tags edgewise from the prong-bending mechanism to the tag-attaching mechanism, substantially as described.

5. The combination with means for advancing plugs of tobacco or similar articles, of prong-bending mechanism for forming prongs on a series of tags simultaneously, tag-attaching mechanism for attaching the tags simultaneously, and means for advancing the tags edgewise to the prong-bending mechanism and from the prong-bending mechanism to the tag-attaching mechanism, substantially as described.

6. The combination with means for advancing plugs of tobacco or similar articles, of cutting mechanism for cutting a series of tags from a strip simultaneously, prong-bending mechanism for forming prongs on the tags simultaneously, means for advancing the tags edgewise from the cutting mechanism to the

prong-bending mechanism, and tag-attaching mechanism for attaching the tags simultaneously, substantially as described.

7. In a machine for attaching pronged tags to plugs of tobacco or similar articles, the combination of tag-feeding mechanism for advancing tags edgewise, prong-bending mechanism, and tag-attaching mechanism, all constructed and arranged for acting upon a series of tags simultaneously, substantially as described.

8. In a machine for attaching pronged tags to plugs of tobacco or similar articles, the combination of tag-cutting mechanism, tag-feeding mechanism for advancing the tags edgewise, prong-bending mechanism, and tag-attaching mechanism, all constructed and arranged for acting upon a series of tags simultaneously, substantially as described.

9. The combination with means for advancing plugs of tobacco or similar articles, of tag-feeding mechanism for advancing tags in the opposite direction to but in a different plane from said articles, tag-attaching mechanism, and means for delivering the tagged articles, substantially as described.

10. The combination with means for advancing plugs of tobacco or similar articles, of tag-feeding mechanism for advancing tags in the opposite direction to said articles, tag-attaching mechanism, and means for delivering the tagged articles transversely to the line of feed of the untagged articles, substantially as described.

11. The combination with means for advancing plugs of tobacco or similar articles, of tag-feeding mechanism for advancing tags in the opposite direction to but in a different plane from said articles, tag-attaching mechanism, and means for delivering the tagged articles transversely to the line of feed of the untagged articles, substantially as described.

12. The combination with feeding devices for advancing plugs of tobacco or similar articles, of tag-forming mechanism, tag-attaching mechanism between said forming mechanism and article-feeding devices, means for advancing the tags from the forming mechanism to the attaching mechanism in a direction opposite to the feed of the article-feeding devices but in a different plane, and a delivering-carrier for the tagged articles between the tag-forming and tag-attaching mechanisms, substantially as described.

13. The combination with feeding devices for advancing plugs of tobacco or similar articles, of tag-forming mechanism, tag-attaching mechanism between said forming mechanism and article-feeding devices, means for advancing the tags from the forming mechanism to the attaching mechanism in a direction opposite to the feed of the article-feeding devices but in a different plane, all constructed and arranged for acting upon a series of tags simultaneously, and a delivering-carrier for the tagged articles between the tag-forming and tag-attaching mechanisms arranged to

deliver the tagged articles transversely to the line of feed of the untagged articles, substantially as described.

14. The combination with the feeding-belt
5 C, of pressure-roller 15 beneath which the articles are fed by said belt, tag-attaching mechanism opposite said roller, and delivery-belt E running transversely to the belt C and receiving the tagged articles from the tag-

attaching mechanism, substantially as de- 10 scribed.

In testimony whereof I have hereunto set my hand in the presence of two subscribing witnesses.

WILLIAM H. BUTLER.

Witnesses:

E. T. SMITH,
C. J. SAWYER.