

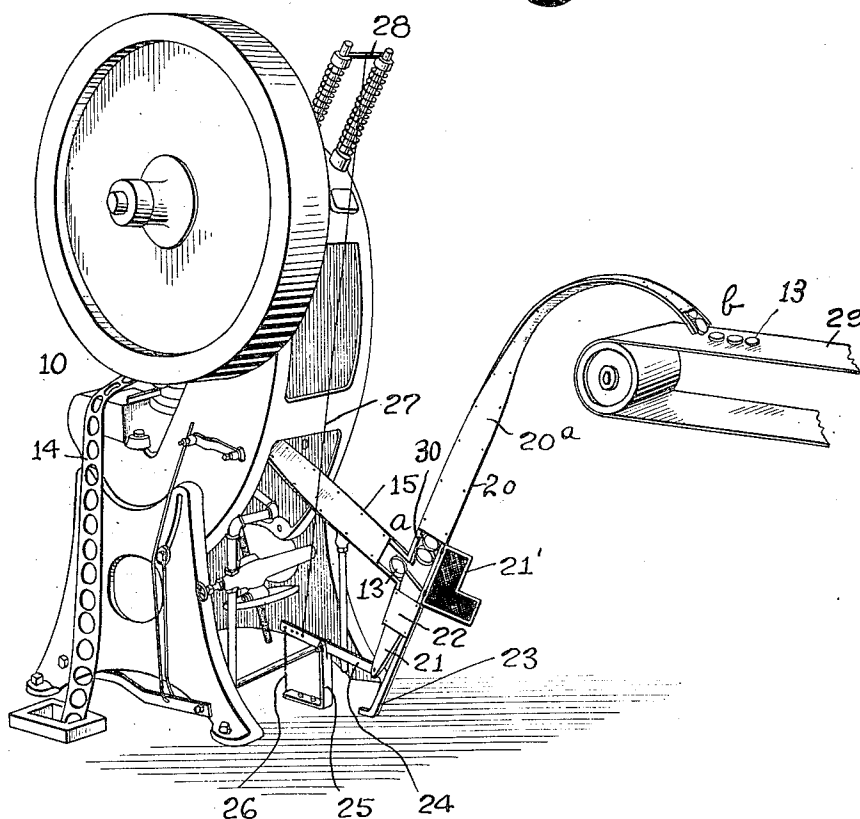
Dec. 26, 1922.

1,439,807.

C. O. ERICSON.
DELIVERY ATTACHMENT FOR PRESSES.
FILED FEB. 8, 1922.

2 SHEETS—SHEET 1.

Fig. 1



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2 SHEETS—SHEET 2.

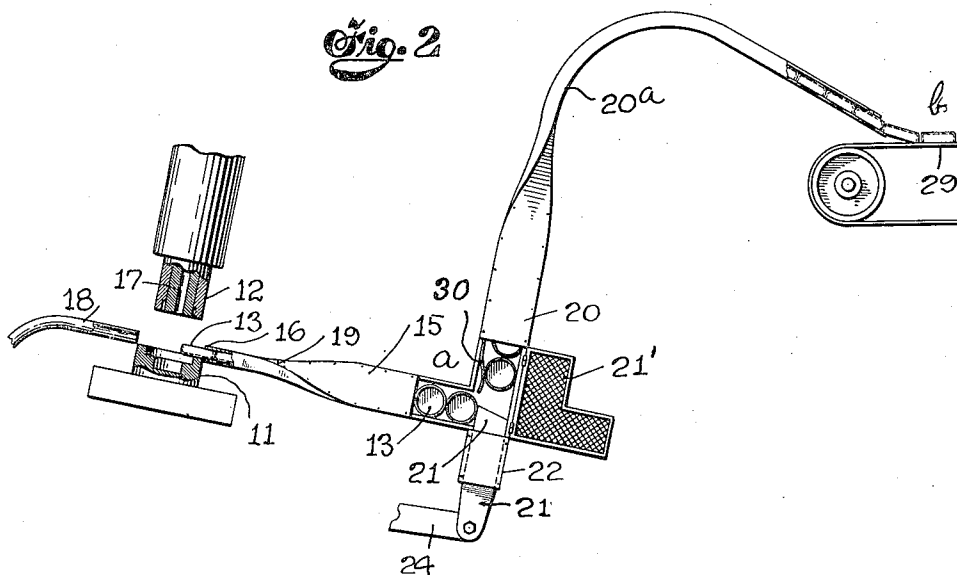


Fig. 3

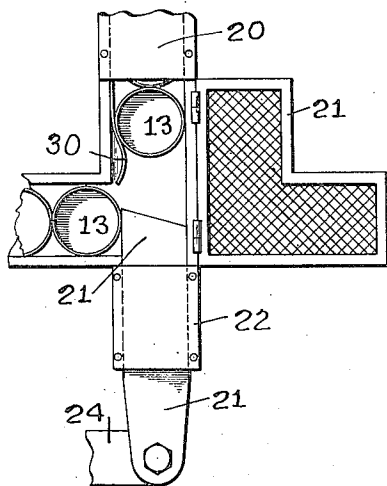
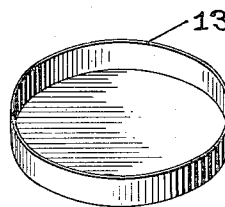


Fig. 4



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CHARLES OSCAR ERICSON, OF HELMETTA, NEW JERSEY.

DELIVERY ATTACHMENT FOR PRESSES.

Application filed February 8, 1922. Serial No. 534,918.

To all whom it may concern:

Be it known that I, CHARLES OSCAR ERICSON, a citizen of the United States, and a resident of Helmetta, Middlesex County, New Jersey, have invented a new and useful Improvement in Delivery Attachments for Presses, of which the following is a full, clear, and exact description.

My invention relates to improvements in a device for taking caps or the like which are formed on presses as fast as they are formed, and delivering them to a point where they are to be used. My invention is particularly intended to produce a simple and efficient attachment which can be applied to a conventional press for forming caps or similar articles, and which will take these caps as they are formed, hold them in the right relation, and deliver them with a desired side up at the point where they are to be used. In practice I have applied my attachment to a press for forming paper basin-shaped caps which are subsequently attached to a cylindrical body, and my mechanism carries these caps and delivers them in the right relation to the machine which attaches them. It will be understood, however, from the description which follows, that the attachment can be used in connection with a press which forms caps of paper or other material, and that the particular form of the cap has nothing to do with the invention. The invention is, however, intended to keep the caps in the right relation, deliver them accurately at a desired point, hold them the right side up, and turn them to a desired position.

As illustrated, and in the machine which I have used, the caps are delivered one side up into the guide chute which carries them, and discharged with the opposite side up on a carrier belt which delivers them to the subsequent machine. My invention is further intended to produce a machine which will not get out of order, and which has means of ready access at the only points where any clogging might occur. My invention is further intended to produce an attachment which can be readily applied to existing types of machines. All of which will be better understood from the description which follows.

Reference is to be had to the accompanying drawings forming a part of this specification, in which similar reference charac-

ters indicate corresponding parts in all the views.

Figure 1 is a perspective view of a well-known form of press provided with my improved attachments.

Figure 2 is a broken detail view partly in section, showing the delivery mechanism.

Figure 3 is an enlarged detail view at the junction of the two chutes, and

Figure 4 is a perspective view of a form of cap on which the machine has been used.

In the drawings I have shown my attachments applied by way of example to a well-known type of press 10, but the press has nothing to do with the invention, which can be readily applied to a press of this type, but which can also be applied to other forms of presses. In the press shown, a die 11 is used in conjunction with a compound die 12, and the caps 13 are shaped in the opposed die members, being cut from stock 14 in the ordinary way. When the caps are formed, they are discharged into a guide chute 15 which is downwardly inclined, and which is of such dimension that the chute will hold the caps 13, or similar things, so that they cannot turn over, but will run freely; and when the caps are formed, they are discharged into the mouth 16 of the chute 15, which mouth lies parallel with the top of the die 11, ready to receive the cap 13. In the forming process the cap will adhere to the compound die 12, but is blown therefrom by an air blast through the bore 17, and the blast from the pipe 18 forces the cap into the mouth of the chute 15. This blast of air also has a tendency to impel the caps downward through the chute 15 so that they will run freely.

The chute 15 is given a quarter turn at 19 so that the caps will be turned up edgewise at the point where the chute 15 merges into an extension chute 20 which extends upward from the point "a," and discharges at the point "b" upon a carrier belt hereinafter referred to. My invention is especially intended, by the way, to provide for guiding the caps and discharging them at a higher elevation than the chute 15, as this is frequently desirable. In the lower end of the extension chute 20 a plunger 21 reciprocates, and this also serves as a cut-off from the chute 15, and to this end the top edge of the plunger next the chute 15 is slightly raised as shown in Figures 2 and 3. The plunger

21 should operate at each stroke of the forming press, and many devices might be used to give it this movement. I have shown, however, a practical means which
5 will be presently described.

The plunger 21 reciprocates in an extension 22 of the chute 20, and the lower end of the chute is stayed or braced as shown at 23 by extending one end of the chute downward to form a foot which can be attached
10 to the floor. Obviously it might be braced and supported in other ways.

For operating the plunger 21 I have shown a tilting lever 24 which is fulcrumed
15 in a bracket 25, and one end of the lever is normally pulled down by a light spring 26, thus tending to throw the plunger up, and the lever is also connected by a wire 27 with the cross head 28 of the press. In the form
20 of press shown this cross head reciprocates at every stroke of the die 12, and consequently at every stroke the lever 24 will be tilted one way by the wire 27, and the other by the spring 26, and as it tilts at each stroke
25 of the die and formation of the cap 13, the plunger 21 will be correspondingly moved so as to push the caps 13 up into and through the extension 20^a of the chute. In the example given the wire 27 is connected to the
30 cross head 28, but on another type of press it will of course connect with some corresponding moving part.

The only point where there is any danger of clogging or of scrap material getting
35 in would be at the junction of the chute members 15 and 20^a, and at this point I hinge a door 21¹ which has openings through it so that one can see whether there is any clogging, and if there is any difficulty, the
40 door can be opened and the obstructing matter removed without stopping the machine.

In the example given it is desirable to have the caps 13 discharge upon the belt 29 which
45 delivers them to a machine for fastening them to the body portion of a box, and the caps are delivered the opposite side up from that in which they are formed, consequently the chute 20^a is given a quarter turn to effect
50 this result.

From the example given, and the description herein, it will be seen that this attachment can be very easily applied to a
55 press, and that the caps or similar things can be delivered regularly and at a higher elevation to a desired point, and that they can be turned to deliver them right side up for the purpose intended.

By reference to Figure 3 it will be seen that a light flat curved spring 30 is provided
60 on one side of the chute 20 just above its junction with the chute member 15, and this serves the purpose of preventing the caps 13 from dropping back after they are forced upward past the spring.

65 It will be noticed that in the structure

shown each cap or the like as it is formed by the die, is forced by an air blast into the chute member 15, and that it is elevated through the chute 20 by the plunger 21 which operates synchronously with the die so
70 that the delivery of the caps is smooth and efficient, and without any tendency to clog. It will also be understood that many of the details to which it has been necessary to refer may be departed from without affecting the
75 invention.

In the description and claims I refer to the member 13 as a cap, but obviously the particular article formed might be given different
80 shapes, or might be something quite distinct from a cap, without affecting the invention.

I claim:—

1. In a machine of the kind described the combination with a forming die, of a downwardly inclined chute arranged to receive
85 articles formed by the die, means for forcing the formed articles into the chute, an upwardly inclined chute connecting with the first mentioned chute, and a plunger mechanism for raising the formed articles through
90 said upwardly inclined chute.

2. In a machine of the kind described, the combination with a forming die, of a downwardly inclined chute arranged to receive
95 articles from the die, an upwardly inclined chute connecting with the first mentioned chute, said chutes being twisted so as to turn over the articles during their course through the chutes, and a plunger mechanism at the junction of the two chutes arranged to force the articles through the upwardly inclined chute.
100

3. In a machine of the kind described the combination with a forming die, of a downwardly inclined chute arranged to receive
105 the formed articles from the die, an upwardly inclined chute connected with the first mentioned chute and delivering to a higher elevation, said chutes being twisted so as to turn the articles travelling through
110 them, means for forcing the articles from the downwardly inclined chute through the upwardly inclined chute, and a door at the junction of the two chutes.

4. The combination with a forming die,
115 of a guide chute arranged to receive the formed articles from the die, said chute having a downward inclination, an extension chute member having an upward inclination, said second chute member connecting with
120 the first, and a reciprocating plunger for raising the formed articles from one chute member to the second.

5. The combination with the forming die, of the downwardly inclined chute arranged
125 to receive formed articles from the die, an upwardly inclined chute member connecting with the first mentioned chute, a plunger reciprocating at the junction of the two chute members to force the formed articles
130

into the upwardly inclined chute, and means operating in unison with the stroke of the press to reciprocate the plunger.

5 6. The combination with a forming die, of a downwardly inclined chute member to receive the formed articles from the die, said chute member being twisted and shaped to hold the articles from turning, pneumatic means for delivering the formed articles 10 from the die to the chute member, a second upwardly inclined chute member also having a twist therein connecting with the first chute member, and means for raising the formed articles through the second chute 15 member.

7. A structure according to claim 9, characterized by the further fact that a yielding checking device is arranged in the second chute member to prevent the articles therein 20 from dropping back.

8. The combination with the downwardly inclined chute member, the upwardly inclined chute member connecting therewith, and the plunger mechanism for raising articles from one chute member to the other, 25 of a spring arranged near the junction of the two chute members and within the upwardly inclined member to prevent articles in the chute member from dropping back.

30 9. The combination with the forming die, of the twisted chute having a downwardly inclined member and an upwardly inclined

member connected therewith, the chute being shaped to prevent the articles therein from turning, an air blast attachment for forcing 35 the formed articles from the die into the chute, and mechanism for raising the formed articles in the upwardly extending part of the chute.

10. A cap delivery attachment for presses 40 comprising a twisted chute having a downwardly extending member and an upwardly extending member connected therewith, pneumatic means for delivering formed articles into the downwardly inclined member 45 of the chute, and a plunger mechanism for raising the formed articles in the upwardly extending member of the chute.

11. The combination with the forming die, of a downwardly inclined chute member connected therewith, an air blast attachment for forcing the formed articles from the die into the chute, an upwardly extending chute member connected with the first chute 50 member, a plunger reciprocating in the lower part of the second chute member to force formed articles through the said chute member, and means operated by a moving part of the press to work the plunger in unison with the forming die.

CHARLES OSCAR ERICSON.

Witnesses:

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WILLIAM A. FORD.