

PUBLISHED  
MAY 25, 1943.  
BY A. P. C.

A. HETZ  
APPARATUS FOR THE AUTOMATIC PUTTING ON DIPPING  
PLATES STYLUS OR OTHER ROD-SHAPED WORKS  
Filed Jan. 28, 1941

Serial No.  
376,394

3 Sheets-Sheet 1

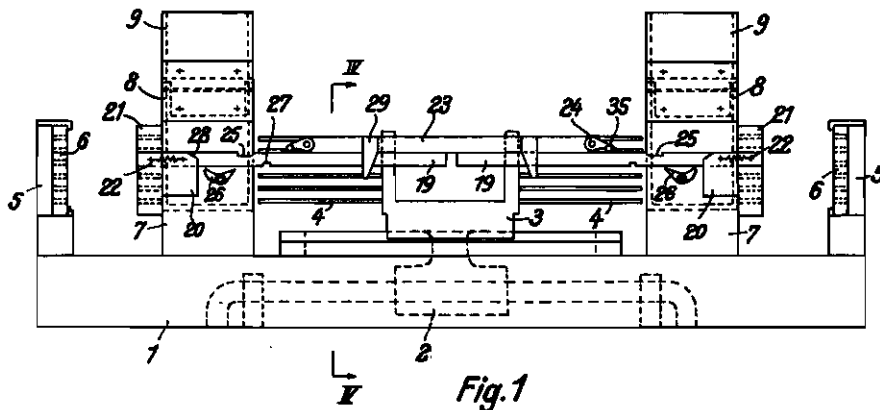


Fig. 1

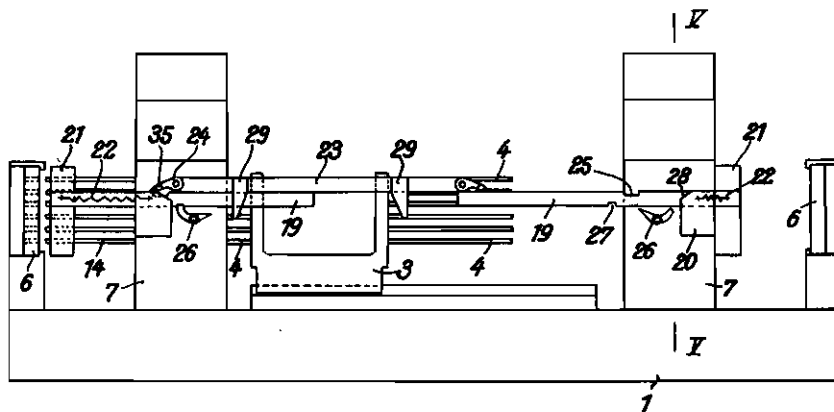


Fig. 2

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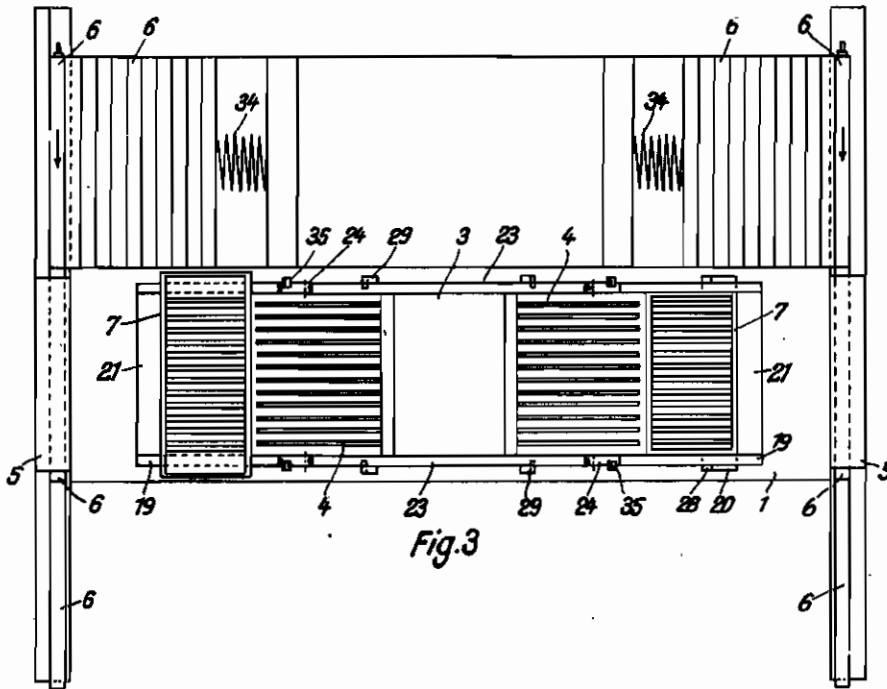


Fig. 3

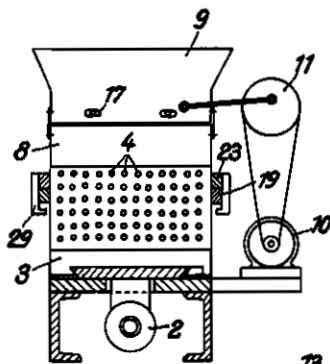


Fig. 4

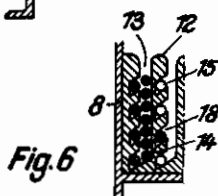


Fig. 6

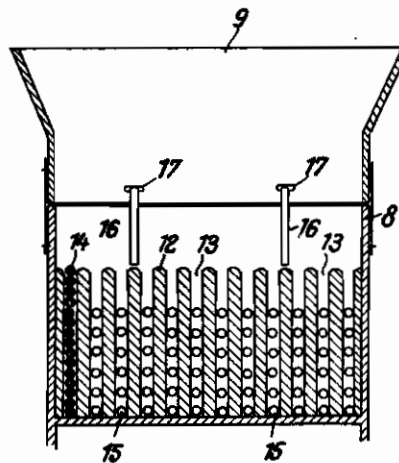


Fig. 5

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3 Sheets-Sheet 3

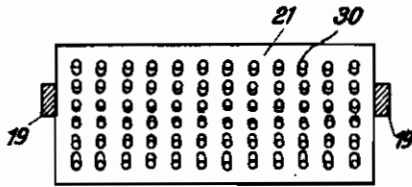


Fig. 7

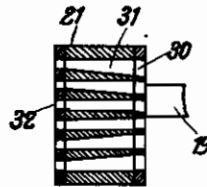


Fig. 9

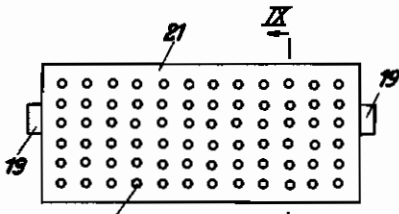


Fig. 8

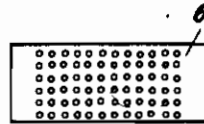


Fig. 10

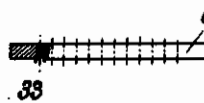


Fig. 11

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# ALIEN PROPERTY CUSTODIAN

## APPARATUS FOR THE AUTOMATIC PUTTING ON DIPPING PLATES STYLUS OR OTHER ROD-SHAPED WORKS

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vested in the Allen Property Custodian

Application filed January 28, 1941

Automatic apparatus have already become known which serve for putting on dipping plates, stylus or other rod-shaped works. The dipping plates after the works have been put on are fed to a device which dips the works perpendicularly more or less deeply into a corroding-, colouring-, varnishing bath or the like. The apparatus known for this purpose possess the inconvenience, that they operate very slowly, as by the same actually only a single row of the dipping plate can be equipped with works. The dipping plate must then be shifted by the distance between two rows, in order that the next row can be equipped with works. The cost of production of the apparatus is thereby considerably increased and its efficiency is very low.

The present invention has for its object, to considerably accelerate the putting of works onto dipping plates. This problem is solved thereby, that the works are put on simultaneously in several vertical and horizontal rows, so that the whole dipping plate can be charged in one operation. The works are first placed into a feeding hopper and then fed to the dipping plate with the aid of mandrels and a guide plate, in several vertical and horizontal rows. The mandrels are mounted on a reciprocating carriage. It is especially advisable, to arrange feeding funnel, mandrels and guide plates in double, so that at each movement in the one or other direction of the carriage carrying the mandrels a dipping plate is equipped with works.

Guide walls are arranged in the feeding hopper, the distances between said guide walls corresponding to the diameter of the works. By these walls the works are first arranged in vertical rows, the distance between said rows corresponding in the horizontal direction to the distances of the sleeves and of the dipping plates. In order to also ensure the distance in the vertical direction, the selection from the vertical rows of the styluses to be put on is effected by the mandrels, which are spaced the one from the other at a distance which corresponds to at least double the diameter of the pencils or to a multiple of the same. In these distances holes are provided in the wall of the feeding hoppers facing the dipping plates at distances apart corresponding to the distance between the mandrels. Also the wall of this hopper facing the carriage has corresponding apertures. In order to insert the works securely into the vertical rows, the feeding hopper is subdivided and its upper part carries out an oscillating movement. In this

upper part oscillating distribution plates are further suspended.

The intermediate walls in the hopper may have oblique indentations into which the styluses slip so that they are spaced the one from the other at the same distance as the sleeves on the dipping plate.

The guide plate arranged behind the feeding hopper on the side facing the dipping plate has a funnel-shaped inlet for the works and a round outlet, which again corresponds to the distance between the sleeves on the dipping plates.

The guide plate is connected by means of a catch device with the carriage carrying the mandrels. The guide plate is drawn along by a catch-pawl up to shortly in front of the dipping plate to be equipped with works, and then securely held, whilst the inserting mandrels still carry out an additional movement and thereby securely stick the works into the dipping plate. On the catch-part for the guide plate mounted on the carriage a stop is provided, which at the extreme end of the movement of the putting-on mandrels releases the locking for the guide plate, so that this plate is returned into its initial position under the action of a pull spring. On the dipping plates the row for holding the works is constructed preferably sleeve-like, and the dipping plates are brought to in front of the guide plate from the side of the machine.

An embodiment of the invention is illustrated by way of example in the accompanying drawings, in which

Fig. 1 shows the machine in side elevation, the carriage being in the middle position,

Fig. 2 is a similar view as Fig. 1 the guide plate being pushed forward,

Fig. 3 is a top plan view of Fig. 1,

Fig. 4 is a section on line IV—IV of Fig. 1.

Fig. 5 is a section through the feeding hopper on line V—V of Fig. 2.

Fig. 6 shows an other form of construction of the inner space of the feeding hopper,

Fig. 7 shows the guide piece in elevation viewed from the side at which the feeding hopper is provided,

Fig. 8 shows the guide piece in elevation viewed from the side at which the dipping plates are arranged,

Fig. 9 is a section on line IX—IX of Fig. 7.

Fig. 10 shows a dipping plate in top plan view,

Fig. 11 is a part section through a dipping plate.

In the figures of the drawings 1 designates the base plate of the machine, in which plate a hy-

draulic drive 2 for a carriage 3 is accommodated, said carriage carrying on either side mandrels 4. On the base plate 1 vertical guide bars 5 are mounted, in which dipping plates 6 slide. On the base plate 1 two feeding hoppers 7 are further arranged which consist each of a stationary part 8 and of an oscillatably arranged part 9, the latter part being oscillated for instance by means of a crank drive 11 driven by a motor 10.

In the lower part 8 of each hopper 7 guide plates or partitions 12 are arranged, the intervals 13 between said guide plates corresponding to the thickness of the works, for instance of the pencils 14. The wall of the hopper facing the dipping plates has holes 15, the distance between said holes amounting to a multiple, at least to double the diameter of the works to be put on.

In the hoppers oscillatable plates 16 are further arranged, which are mounted in slits 17 of the movable part 9 of the hopper and ensure a uniform distribution of the poured in works.

The partitions 12 may have obliquely directed grooves 18, as shown in Fig. 6, into which the pencils slip, so that they are brought to in front of the holes 15.

The feeding plates 21 are slidably arranged by means of guide bars 19 guided in guide pieces 20 on either side of the stationary hopper part 8. These feeding plates 21 are pressed by springs 22 against the corresponding hopper part 8. Catching bars 23 are further provided on the carriage 3 and have on their front end pawls 24 adapted

to engage into the notches 25 in the guide bars 19 when the carriage is moved, and to thereby carry along the guide bars 19 and the guide plates 21. This catching movement lasts until locking pawls 26 fixed on the hopper part 8 engage into notches 27 in the lower side of the guide bars 19. The catch pawls 24 are at the same time lifted out of the notches 25 when rollers 35 of the catch pawls 24 run up on control faces 28, so that the guide plates 21 are securely held in this position, as shown in Fig. 2. When the movement of the carriage continues, only the mandrels 4 with the works 14 are then conducted in the direction to the dipping plates 8, until stops 29 fixed on the catch-bars 23 release the locking pawls 26. By the action of spring 22 the corresponding guide plate 21 is then returned into its position of rest shown in Fig. 1.

The guide plates 21 have oblong insertion holes 30 on the side at which the works are inserted, said holes merging through bores 31 funnel-shaped into the front openings 32.

The dipping plates have resilient sleeves 33, as shown in Fig. 10, and these dipping plates 6 are brought by the guide bars 5 into the position in which the putting on of the works takes place. The dipping plates may be fed to the putting on place either mechanically or by hand.

It is advisable to pile up the dipping plates under tension for instance of springs 34.

ALFRED HETZ.