

opinion that the entire interest in the invention passed from the inventors to the assignor of the complainant by the instrument of assignment which they executed to him before the patent was granted, and that the patent was properly issued in the name of their assignee. They, the inventors, do not controvert the exclusive right of the complainant, nor does the respondent deny that the terms of the assignment from the assignee of the inventors to the complainant are amply sufficient to convey to him all that he claims if his assignor at the time held the title to obtain the extended term; and the court being of opinion that the assignor of the complainant did hold that right, it follows that there is no error in the record."

AN IMPROVED WASHING MACHINE.

The accompanying engraving represents an improved washing machine recently patented by Mr. Erasmus L. Keys, of Muncie, Ind. It has been the aim of the inventor, in devising this machine, to imitate as nearly as possible the operation of rubbing the clothes by hand on an ordinary washboard. This is done by passing the clothes between ribbed rollers, B D, under pressure given to the two upper rollers by the spring, f, and at the same time giving the upper rollers a longitudinal motion by means of cams, I, at the ends of the larger roller, B. The relative position of the three rollers is clearly shown in Fig. 2. A guard, G, at each end of the machine prevents the clothes from coming into contact with the metallic parts of the machine.

The upper rollers yield to accommodate clothes of varying thickness without interfering with this longitudinal motion. The machine, although very simple, appears to be made on the right principle.

DE KAY'S SNAKE.

BY C. FEW SEISS.

It is impossible to write the true life history of an animal from only a lifeless specimen. Buffon attempted it, but how often has he committed grave errors by so doing! Thus, in one instance, he says, while examining the skin and head of a black skimmer (*Rhynchops nigra*): "We see from its bill that life was to such a formed bird a burden, and that capturing and devouring food was difficult, if not painful." On the contrary, its bill is admirably fitted for its mode of life. Dr. Holbrook, in his "North American Herpetology," says: The De Kay snake "feeds on various insects, as crickets, grasshoppers, etc." Now it is probable, he, in examining his specimen, saw it was almost too small to capture and swallow a mammal, bird, frog, or toad, and as it was not a water snake, tadpoles and fishes were out of consideration, and hence came then to the conclusion that it must be insectivorous. My observations have proved this assertion to be an error. I have had many of these snakes in captivity, from a month to over a year. I never saw one of them even attempt to catch or eat a grasshopper, beetle, bug, fly, moth, frog, or toad, but from the first time until now I never saw one refuse to seize and swallow an earthworm (*Lumbricus*), unless the snake was sick and blind, previous to casting its skin. This was not only the case with individuals taken in Pennsylvania, but a living specimen sent to me from Massachusetts had the same voracious habits, and refused to eat all insects placed in its cage. If the worm seized happened to be small, the snake would double the worm, and swallow both parts at the same time.

If the worm was large, the snake worked and maneuvered until he could seize it by the head or tail. When the worm was swallowed head foremost, the snake had little to do but permit the worm to creep down the ophidian gullet, of its own free will. And this it could do more rapidly than the snake could have done in the usual manner of drawing it in by the backward and forward motion of its jaws. Instinct seemed to tell the worm that the snake's gullet was a pleasant hole for retreat; but alas for *Lumbricus*! he little dreamed it would be the hole he should occupy—his grave.

I have discovered that young garter snakes (*Eutania*) feed

entirely upon earthworms, and not upon insects, as some have asserted. I have seen *Eutania*s the day after birth voraciously attack and devour earthworms, and I am of the opinion that many other species of our land serpents while immature feed wholly upon these common annelids.

De Kay's snake is generally crepuscular in habits, and rarely quits its retreat during midday, unless the weather be cloudy or rainy, when it moves about in search of worms. In captivity, however, I have, on cold days, several times seen it leave its hiding place to bask for hours at a time in the sunshine. At such times it would throw itself into a coil, and bury its head either under the pebbles or beneath the folds of its body, to shield its eyes from the rays of the sun, which seemed unpleasant. The *Storeria Dekayi* is of a pale brown color above, with a yellowish white or clay colored dorsal band, bordered by a dotted line on each side;

vert worthless insects or waste water grasses into human food. The trout or bass from a farmer's pond costs him nothing but the trouble of catching, and compares in excellence on his table with his best poultry, to say nothing of pork that has been fed twice a day for months. The only loss of time or labor is in the catching, and to reduce that it is only necessary to make the fish abundant.

Mr. Roosevelt did not advise farmers, except in rare cases where they have unusual facilities, to undertake the artificial hatching of fish, but he urged them to utilize such ponds and streams as they can without labor or expense. This might not yield the greatest possible profit, but it would bring fair returns, and in no wise interfere with other occupations.

"It would be irksome," he said, "for the farmer to watch over the incubation of trout eggs, which require months to produce the young; nor is it necessary, so long as the States

take this labor upon themselves and furnish, to all who need them, trout fry already hatched. If gentlemen owning suitable streams or ponds desire to stock them with trout they have only to apply at the State hatching-house, and, where a number combine, the expense to each is trifling. After the trout fry are placed in their proper element—and it must not be forgotten that only cold spring-water is suited to them—they will take care of themselves. In the course of a year or two they will have attained an edible size and can then be caught. Nothing is simpler than this, and yet how many streams and fine fresh brooks there are that perhaps once abounded with trout which are now wholly depopulated. There is, however, another kind of fish known as the fresh-water bass, which is possibly even more valuable than the trout for the farmer's use. It is not so exact-

ing in the character of the water in which it will live, and will grow more rapidly; more important still, it needs no culture or care whatever, or any time.

"The parents, which are fairly prolific, lay their eggs in a sort of nest and watch over them till they are hatched. Bass have never failed to increase rapidly where they have been introduced, and they are suited to almost any pond. These are especially the fish to be used where water farming is to be combined with land farming in the simplest and easiest way. Nothing is required but to place a few pair of mature fish, which can be easily transported in any water they are expected to populate, and they will attend to the rest themselves. They can hold their own with any other species, even against the dreaded pickerel; they increase rapidly and grow quickly, and as human food they are excellent."

The Poison of Serpents.

Some interesting observations have recently been made on

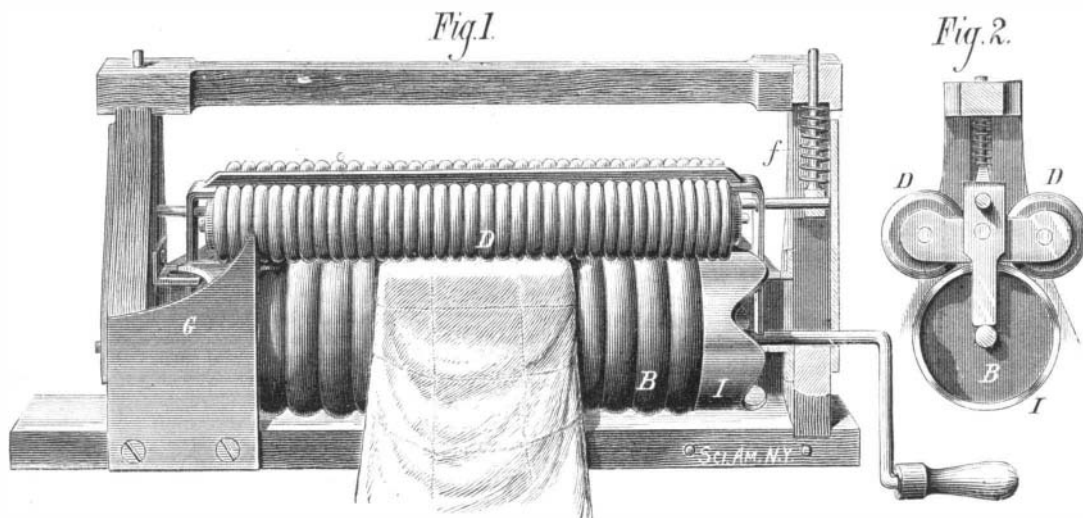
the poison of serpents by M. Lacerda, in the physiological laboratory of the National Museum, at Rio Janeiro, and which have led the experimenter to conclude that, in some cases at least, the venom contains an organized ferment, presenting some analogies to bacteria. M. Lacerda states that a drop of poison removed from a rattlesnake under the influence of chloroform, and examined with the aid of the microscope, appears as "a species of filamentous protoplasmic matter, consisting of a cellular aggregation disposed in arborescent form resembling certainly copods."

These cells are fully described in a paper read before the French Academy of Sciences. Similar phenomena were observed in the blood of animals that had been bitten by a rattlesnake, and it was found that such blood was capable of setting up the same change in the blood of other

animals when injected hypodermically, and that this change was always followed by the death of the animal.

The Directorship of the National Surveys.

It was announced, March 11, that the Directorship of the National Surveys is to be given to Clarence King. The appointment will give general satisfaction. Mr. King is not only a most capable man for the place, but his relations to other laborers in the same field hitherto have been such as to give promise of harmonious action in every part of the consolidated surveys.



KEY'S WASHING MACHINE.

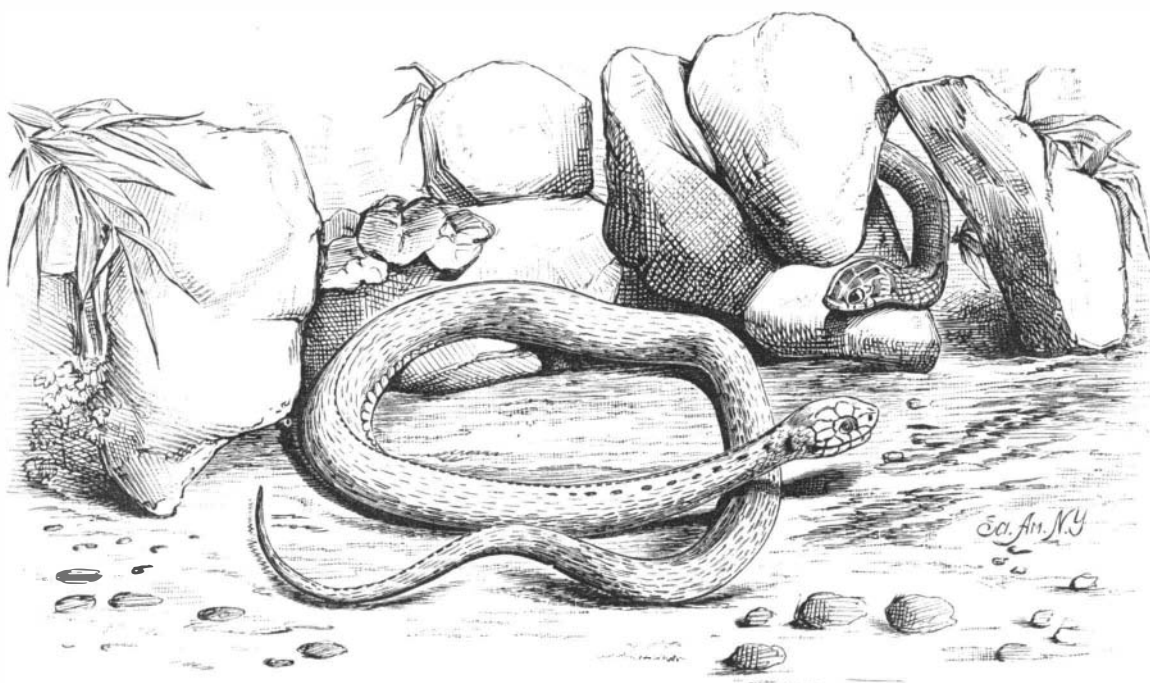
beneath, flesh-color, or soiled yellowish-white. Its ordinary length is about one foot.

The other species of the genus, the *S. occipitamaculata*, is salmon red (in life) beneath, and has the head generally marked with three pale spots, hence its name.

Some have considered these serpents to be merely immature striped snakes (*Eutania*s), but let it be distinctly understood that the majority of serpents come into the world marked and colored like their parents.

Trout and Bass Farming.

The addition of our popular food supply during recent years, by the restocking of exhausted streams and lakes, has been of great public advantage. There still remain countless small brooks and ponds capable of being made useful and profitable with very little trouble. In a paper read before the New York Farmers' Club, by Mr. Robert B. Roosevelt, one of the State Fish Commissioners, emphasis was



DE KAY'S SNAKE.

laid upon the fact that in many places inland, and not accessible to the sea, that great storehouse of fish food, there is difficulty in obtaining even the commonest sorts of fish. If the farmer can add to his usual crops a crop of fish he will be benefiting his neighbors as well as himself. To do so may seem to many at first glance a difficult operation, but not half as much so as making the broad acres laugh with a harvest seems to the inexperienced. Fish farming has its rules and limits, precisely as land farming has, but is simpler and far more productive. Once hatched the fish provide for themselves; they need no food or care, they con-