

THE HARPY EAGLE.

Sitting motionless on the ground in the corner of the eagles' cage, in Central Park, New York city, is a curious bird which, at first sight, visitors mistake for an owl, and wonder why it is confined among the more noble birds of prey and apart from its own species. The creature rarely stirs from its favorite corner. When food is offered, or when some one of the eagles ventures to approach it too closely, it erects a tuft of feathers on the back of its neck, and twists its head about with a rapidity that shows it, despite its sleepy attitude, to be keenly on the alert. The eagles, even the huge bald-headed monarchs of the air, cherish a wholesome respect for the formidable beak and huge talons, and permit the uncommunicative stranger to continue its ponderous thinking without intruding on its meditations.

The bird is a harpy eagle (*harpya destructor*), and is probably, next to the condor, the most dangerous and ravenous bird of prey indigenous to the New World. It inhabits the tropics between Mexico and the southern part of Brazil, and abounds in great numbers in the warm regions in the interior of South America. In size it is smaller than the condor, but larger than the true eagle, and stands as a kind of connecting link between the latter and the buzzards. The characteristic features of the bird are well shown in the engraving presented herewith. The beak is strong and curved, and the tail long; and the wings are of medium size. The back, wings, upper chest, and neck are grayish black, the tail is black with whitish cross bands, the lower chest and abdomen are white, and the claws yellow.

Unlike the condor, the harpy avoids high mountains where the air is rare and cold, and dwells in dense forests or on the shores of large bodies of water. Its food is small animals, especially monkeys. Regarding its eggs or its breeding habits, but very little is definitely known.

Boiler Explosions.

A correspondent who signs himself A. O. K., thinks that E. G. A. undervalues the average engine tender, and states that, although men in charge of stationary engines are frequently illiterate, their practical knowledge, gained by experience, should protect them from the charge of ignorance. He admits that there are many men employed in this important position who are unqualified to assume its responsibility; and it is the engagement of such men which renders the use

of automatic alarms, etc., necessary; and he cites the case of a recent explosion which would certainly have been prevented if such an alarm had been attached to the boiler.

Capital and Labor.

The best and sweetest friend of the laborer is economy. Save a little every day, lay it by, and it will soon become self-accumulating, by the safe and generous principle of compound interest. It is astonishing, with such a habit once formed, how soon the laborer may find himself enjoying all the pecuniary facilities which he has been in the habit of envying in the capitalist. We know that such a course involves self-denial, no indulgence in liquor, no sacrifice to superfluous fancies, no riotous living; but yet it does admit of all necessities and the intelligent cultivation of the mind. Indeed, this last purpose should never be lost sight of. If we know how to spend less than we receive, we have the philosopher's stone, says the stoic. Anything which is not absolutely needed is dear, no matter what the price may be; or, in other words, nothing is cheap which is superfluous.

Extreme measures defeat themselves. If, by any extraordinary combination, workmen should succeed in establishing five hours per day as the legal representative of a day's labor, is any intelligent person so blind as to suppose, for a single moment, that the laborer has really and pecuniarily benefited himself, though he gets as much for his five hours as he did formerly for ten hours of faithful work? The truth is very simple; he who runs may read. The man's dollars,

which he receives for circumscribed production, are worth just so much less as the amount of labor which he gives for them is diminished, and he will inevitably find their purchasing power to be in that exact ratio. Money is but the circulating medium; his labor is the real criterion of value. The loss of five hours, more or less, as the case may be, is just so much loss of real wealth in the world; and so long as the workman lives he is as much a loser as the capitalist who employs him. Of course five hours will not produce so many shoes, hats, or potatoes, consequently it will require more of those dollars to cover his feet and head and feed him. A suit of clothes will cost him just so much more in proportion as his limited industry shall diminish the value of his dollar.

All associate interests, to be lasting, must be upon an equitable basis. The bargain that is one-sided and unreasonable can never be made to stand; all the legal documents that could be drawn upon that basis would be as naught. The laws of compensation are inevitable, and the rule of justification will come in, by and by, and assert itself. Em-



THE HARPY EAGLE.

ployers and employed, master and men, are equally amenable to this great and good law of Providence. Be sure there is always a third, silent party to all of our bargains.—*American Cultivator.*

Postage Stamp Frauds.

In reply to a paragraph recently published in these columns, suggesting the importance of discovering some new invention by which the fraudulent washing of postage stamps can be prevented, we have received many replies. A variety of novel plans for accomplishing the desired end have been presented to us, together with several very old ideas. For the benefit of those of our readers who may still be studying upon the subject, we would say that the following plans are old, and time spent in their re-invention is wasted:

1. The printing of the postal stamp in ink that washes off when moisture is applied to the face of the stamp.
2. Cancellation of the stamp by means of indelible ink.
3. Cancellation by means of a cutter stamp that cuts the face of the stamp.
4. Coupon stamps, one portion of which adheres to the letter envelope, while the other portion or flap is un gummed and is torn off as a cancel in the post office.
5. Translucent stamps gummed upon the face, and secured face down upon the envelope, so that, if the stamp is removed by moisture, the ink leaves the stamp and adheres to the envelope.

The spurious 5 cent piece which has recently been extensively circulated was found to be composed chiefly of tin and antimony, with an appreciable amount of copper.

Planing Mill Machinery.

Mr. F. H. Morse says, in continuation of his article in the *Northwestern Lumberman*, published in our last week's issue:

Following up the history of the planing machine after Bentham's patents of 1791 and 1793, we come to that of Joseph Bramah, granted in 1802, which related to the transverse, or what is better known in this country as the Daniels planer. This is in fact the only true planer, or, in other words, the only one which produces a perfectly plain surface; but its use in this country is very limited as compared with the parallel planer, it being employed only for making lumber perfectly true, or "out of wind," as it is termed.

From 1810 to the time when the Universal Exhibition was held in London, in 1851, the building of planing machinery in England made but little progress, and it might almost be said that this branch of engineering science lay dormant in that country for forty years. In 1844, William Furness, of Liverpool, bought nearly all the machines manufactured by C. B. Rogers & Co., of Norwich, Conn., conveyed them to Eng-

land and there patented them. Little benefit, however, was ever derived from these ventures either by himself or his country, as they were not at all adapted to the English trade. From 1830 to 1855 American mechanics and inventors made many improvements in the style and the construction of machines for planing wood, among which the great Woodworth and Woodbury patents are the most noticeable. As they are doubtless familiar to every planing mill owner and operator, it is unnecessary for us to describe them here.

For the past fifteen years the aim of manufacturers has been to perfect the parallel planer, and to-day it is without doubt the most perfect woodworking machine in the country. As it is the style chiefly used in our planing mills, these remarks will be mainly confined to this class.

Under this head we will first notice that somewhat peculiar style of machine known as the chain bed planer, invented first about twenty years ago by Farrar, whose purpose was to avoid the Woodworth monopoly. It is undoubtedly the most extensively used of any one side or single planer built, and the principle is frequently employed for double or two cylinder machines with good results where the material worked is not less than $\frac{1}{4}$ or $\frac{1}{2}$ inch thick; for thinner than this they give some trouble, as the last board put in has to push the preceding one

through between the dead plates and bottom cylinder; and if there is not considerable end surface to the boards, they slip past each other, causing much annoyance and sometimes endangering the safety of the machine. One great advantage gained by the use of this style of feed is that lumber can be planed in almost any condition, even if wet or covered with ice or snow—a quality which roll feed machines do not possess. For single side planers we would recommend for general work the chain feed as superior to any other; but for two-cylinder machines, unless used entirely upon heavy work, the roll feed is the best. Of these two classes there are some excellent machines built by our American manufacturers.

In regard to the care of a chain feed planer, we remark that, in starting a new machine, much attention should be given to the wearing parts of the bed and its bearing bars to prevent abrasion as, if this evil once commences, it can never be stopped. Powdered plumbago (black lead) mixed with oil is the best lubricant that can be used to prevent it. The bearing bars beneath the bed should be faced with highly tempered steel; the traveling bars should be made of chilled iron, the straps of the best grades of Norway or Swedish iron, and the rivets of steel. Great care should be exercised in the manufacture of these parts, especially such portions of them as are exposed to wear, as they are often required to work under heavy pressure, covered with dust and with but little chance for proper lubrication; and, if they are not well constructed and cared for, they will prove a continual source of trouble and expense.

Next in order comes the matcher. This has undoubtedly been made in a greater variety of forms to accomplish the same result than any other woodcutting machine in use. There seems to be nothing like a standard for any one of its parts in existence; each builder designs his machine seemingly with no other purpose than to make it as much unlike that of his predecessor in the business as possible. At least such is the opinion one would naturally form from an examination of the different patterns which are offered for sale in this country. They are built with two, four, six, and eight feed rolls, from four to fourteen inches in diameter, as extremes, the large ones sometimes fluted and the small ones with smooth surfaces, and *vice versa*. We find cylinders varying from four to ten inches in diameter, some with two, some with three, and some with four knives, which are attached in divers ways. In one style they are inserted in the cylinder with their cutting edges projecting past its turned surface; in another they are keyed to the cylinder, and in a third bolted upon it. Again in some machines the cylinder is round, as its name would indicate, and in others rectangular and triangular. The cylinders, too, are made of various materials, the most common of which are wrought iron, cast iron, and brass. In matcher side cutter heads, we find that the same dissimilarity prevails. They are made to carry from two to five cutters. These are in some cases solid, and in others in sections; in one machine placed with the beveled side of the cutter out, or next to the work, and in another in the opposite positions; sometimes straight, and frequently with an edge forming a quarter of a circle, and all these different classes are at work on the same kind of wood and under like conditions.

From all this diversity it would naturally be inferred that the manner of constructing a planing machine was of minor importance, or had not received the attention it deserved; but there are, notwithstanding, machines built which are very nearly perfect, and if an operator understands what is demanded for different kinds of work, and under different circumstances, he will have no difficulty in procuring a flooring machine that will almost exactly meet his requirements.

DECISIONS OF THE COURTS.

United States Circuit Court—District of Massachusetts.

PATENT BOBBIN AND SPINDLE.—OLIVER PEARL *et al.* vs. THE OCEAN MILLS *et al.*

[In Equity.—Before Shepley, J.: Decided January 2, 1877.]

Reissued Letters Patent, No. 6,936, were granted to the complainants September 1, 1874, for an "improvement in bobbins and spindles for spinning machines." The bill in this case is brought for an alleged infringement of the reissued letters patent.

Held by the Court: Prior to the invention of Pearl unsuccessful attempts had been made to reduce the weight of the ring spindle and bobbin in general use, and thus diminish the amount of power required to run them. The patentee effected this desideratum by making the blade shorter than the bobbin, which was provided with a bearing therefor in the center. The bobbin was made light and a plug or bushing inserted in the upper end to strengthen it. The upper bushing forms no function in the combination of the bobbin and spindle, and the words "the described bobbin," occurring in the claims, must be construed not solely with reference to the words in the specification, but with reference also to the limitations in the context of the claims. When, in the specification of the original patent, the inventor describes a new and useful combination of a number of ingredients, performing, in combination, certain functions less than he has claimed, he may in the reissue claim such combination of the less number which he has described, suggested, or substantially indicated as his invention, but failed to include in his claims.

A reissue need not describe the invention in the exact language of the original, but may contain a more full and exact description of what was there imperfectly described.

Mere change of form or location in a mechanical structure is not the subject of a patent without showing that some new or materially improved result is obtained.

The greatly improved result attending a change in the form or location of parts, when viewed in connection with the failure of the many experiments previously made to accomplish similar results by mere structural changes, has a great tendency to prove that they involve some functional difference beyond mere mechanical perfection and adjustment.

[Benjamin F. Thurston, D. Hill Rice, and Charles E. Pratt, for complainants. Chauncey Smith, James J. Storrow, and William W. Swan, for defendants.]

NEW BOOKS AND PUBLICATIONS.

THE ART OF PROJECTING. A Manual of Experimentation in Physics, Chemistry, and Natural History, with the *Porte-Lumière* and Magic Lantern. By Professor A. E. Dolbear, Tufts College. Illustrated. Boston, Mass.: Lee & Shepard.

The book whose title we give above is one which has long been called for, and which well supplies a want which has been felt for many years. During the last fifteen years the magic lantern and solar microscope have been gradually developing from what might be very appropriately called their infancy, when they were found almost only in the nursery as toys for children or elsewhere as means of mere amusement. During those years these instruments have been occupying an ever wider and wider field in the school room, the lecture room of the college, and the public lecture hall, and a mutual influence has reacted between these means of illustration and the methods of instruction for which they were best fitted; by which the character of such oral instruction has been modified and developed, and its enlarged requirements have called for and obtained a constant enlargement in the capacities of these instruments, until to-day we find in what the author of the above work calls "the standard lantern of the country," namely, the "College Lantern," manufactured by Messrs. George Wale & Co., of Hoboken, a complete outfit, by which an extended course of instruction in Science can be illustrated with a fulness and brilliancy that was not dreamed of a dozen years ago. The art of projection has thus come to be a matter involving much of detail in reference to the adjustment of apparatus and the management of experiments, and yet beyond the meager directions contained in the catalogues of manufacturers, nothing in a collected form has been published on this subject. Isolated papers have, it is true, appeared in various periodicals, and we among others have published many such; but such scattered information in no way fills the want which every experimenter and instructor feels of a handbook which shall give him full directions, systematically arranged, for every part of his work, and which shall supply him with suggestions for the subject as well as the method of his illustrations. All this the volume before us supplies in an admirable manner. It opens with clear and concise directions for making, at little cost, such a simple *porte-lumière* as should answer the requirements of any one not able to procure a more perfect instrument. The darkening of the room and arrangement of the screen are then described. Next follows the description of artificial sources of light, including the electric light, the oxyhydrogen, the oxycalcium (so called), the magnesium, and finally oil and gas lights. Lanterns are then described, and next lenses, and then the subject of "projections" in general is extensively treated, including the ordinary projection of images of transparent objects or pictures with a lens, the projection of shadows from large pieces of apparatus, the projection with the megascope or by reflection from opaque objects, and the use of the vertical lantern of President Morton. What we have noticed so far occupies the first 43 pages of this book, the remaining 115 pages being devoted to the description of countless beautiful and instructive experiments to be performed with the instruments above described. These experiments are classified and made easy

of reference by arrangement under the following heads: Physical experiments (that is, in molecular physics), acoustics, light, heat, magnetism, electricity, and chemistry. The fullness of this collection is very remarkable, and we are quite sure that an experimenter might occupy himself daily for a year if he only repeated once every experiment the details of which are here given. One of the merits of this collection is that it not only gives the author's own experiments, but embraces all that have been published on the subjects involved. As the author is not writing a history of the art, he is quite excusable for omitting all reference to the authorship of the various experiments which have been published by others; but any one interested in the subject will recognize many which have first appeared in this journal, and will thus recognize how much the "art of projection" owes to one of our frequent contributors.

THE NEW FORMULA FOR MEAN VELOCITY OF DISCHARGE OF RIVERS AND CANALS. By W. R. Kutter. Translated by L. D'A. Jackson, A.I.C.E. Price \$5. New York city: E. & F. N. Spon, 446 Broome street.

Mr. Jackson is already well known to hydraulic engineers through his "Hydraulic Manual," a very excellent practical work which has already run through several editions. The new book, which he has translated from a series of papers by Herr Kutter, will, we think, also prove of much value to the profession. Mr. Jackson points out that all "the old velocity formulae both for open channels and for pipes have been proved to have no claim to general application; and as a consequence of the dearth of hydraulic observations of modern date, the hydraulician is recommended to use variable coefficients of mean velocity of discharge, to be chosen in accordance with the circumstances of each special case." The new formula of Herr Kutter, however, is based on the experiments of D'Arcy, Bazin, Ganguillet, Humphrey, and Abbot, and on his own investigations, and hence is considered to be of great practical importance, inasmuch as it supercedes the unreliable formulae above referred to. The text of Mr. Jackson's work, which bears the marks of careful editing, relates to flow in open channels generally, and flow in open channels in earth. The book contains numerous tables, besides plates.

Recent American and Foreign Patents.

NEW AGRICULTURAL INVENTIONS.

IMPROVED CULTIVATOR.

Thomas R. Landon, Sladesville, N. C.—This improved cultivating plow for cotton, corn, and other plants, is so constructed that it may be readily adjusted for use as a scraper, a sweep, and as a dirter, as may be required. The rear ends of standards are bent to the rearward, to form feet or have feet attached to them to strengthen them, to enable the plow to be more easily held, guided, and controlled. The rear ends of the feet are bolted to the lower ends of the rear standards. The upper parts of the standards are bent inward at right angles, are slotted longitudinally, and are secured to the beam by a bolt, so that, by loosening the bolt, the rear standards may be adjusted, as required, to correspond with the adjustment of the forward standards, and to cause the plows to throw more or less dirt, as may be desired. To adjust the plow as a double dirter, the standards and their attached plow plates are exchanged.

IMPROVED SULKY PLOW.

Charles Reed Conway, Midway, Wis., assignor to Jane Eliza Conway, of same place.—In this sulky plow, the draught is applied to the sulky, instead of being applied directly to the plow beam. The wheels are made large, and revolve upon the journals of the axle. To the middle part of the axle is attached the tongue, which is strengthened by the braces or hounds, and to which is attached the double tree. The standard is made higher than usual, so that the plow may not be liable to clog with rubbish. The plow beam passes through slots in hangers attached to the tongue in front and rear of the axle to keep the plow in line, and enable it to be guided by the sulky. The draught strain upon the plow is supported by a pin that passes through the beam in front of the forward hanger, and the sulky is kept from moving back upon the beam by a pin passed through the said beam in the rear of the said hanger. Rollers are placed upon the pins to bear against the hanger, to diminish the friction as the plow beam moves up and down within the slot of the said hanger.

IMPROVED TURF AND GRUBBING COLTER.

Samuel M. Lovell, Shady Grove, Va.—This invention furnishes an improved colter for cutting turf or sod, to enable it to be turned by the plow, and to cut off roots that may be in the ground and that would obstruct the plow, and which shall be simple in construction, easily kept in order, and of light draught.

IMPROVED FRUIT CRATE.

Roderick G. Ross and Francis A. L. Cassidy, Wilmington, N. C.—This invention is an improvement in the class of folding fruit and vegetable crates, and relates particularly to the mode of hinging the top and bottom of the crate to the bent portion of the rods by which the sides are pivoted together, and also to the means for both securing the cover and bottom closed, and holding the crate distended.

IMPROVED ANIMAL TRAP.

Zachariah J. Anderson, Dallas, Texas.—This invention consists in the combination of a hemispherical cage, a central standard, and a base piece, so arranged that the cage may slide on the standard, and may be held at the top of the standard by a trigger that engages with a ring at the top of the standard. The trigger is tripped by a chain to which bait is attached. The circular base piece of the trap may be made of any suitable material. It is rabbeted at its edge to receive the upper portion of the trap, and is bored centrally to receive a standard, which is secured thereon by nuts that are secured on the rod, and clamp the base piece. An eye is formed at the upper end of the rod, for convenience in handling, and also for receiving the trigger that supports the cover or cage. The hemispherical cover or cage is made of wire, and is provided with a cap or top piece of sheet metal, which consists of two concave pieces attached to the top of the cage, having their concave surfaces placed together, and each provided with a central aperture that fits loosely on the standard. A short section of tube attached to the lower piece forms an additional guide for the cage. A trigger is capable of hooking into the eye. The lower end of the trigger is bent to form nearly a right angle with the upper part, and is connected to a chain that is provided with a bait hook, and also with a guiding ring that slides on the standard. A dog is jointed to the top piece and is capable of clamping the standard, so that the cage cannot be raised without first turning the dog back. There is a handle for raising the cage. The trigger, when the trap is set, hooks into the eye. Any attempt to remove the bait from the hook trips the trigger, allowing the cage to fall upon the base piece. The dog prevents the imprisoned animal from raising the cage.

IMPROVED CORN PLANTER.

Thomas C. Young, St. Charles, Iowa.—The supporting frame of this corn marker is revolved by two horses and a driver. It rests on broad hind wheels and on curved furrowing pieces that are arranged in front of the seed boxes. The wheels are placed stationary on a square axle, and are coupled or uncoupled by a clutch mechanism that is moved along the axle by means of levers operated from the driver's seat. The seed boxes may be worked separately or jointly, according as one or both clutches are thrown into gear with the wheels. When one box only is required to drop, the opposite clutch mechanism is thrown out of gear, and when both are desired to be interrupted, for turning or otherwise, both clutches are thrown out of gear with the wheels. To the sliding sleeve, operated by the lever, are applied diametrically extended arms that curve at the outer ends. These arms revolve with the axle when the clutch is thrown into gear, and engage the rectangularly bent ends of the curved rods of a rock shaft, so as to raise and drop the same, and operate thereby, by fixed diametrical arms, the top and bottom slides of the seed-dropping tube. The slides are so arranged that when one opens the seed-dropping tube the other closes

the same, which produces alternately the filing and discharging of the tube. The planter is thrown in or out of gear with the wheels when the revolving arms are in nearly horizontal position, the marker rods being thereby also in a position so as not to interfere with the propelling of the planter.

IMPROVED GRAIN DRILL.

James R. Roe, Fairville, Mo.—This drill is so constructed that it will not clog with trash, will adjust itself to an uneven surface of ground, will sow the seed evenly and uniformly, and may be easily operated. It contains a number of new features in its mechanical construction.

IMPROVED THRASHING MACHINE.

George R. H. Miller, Oregon City, Oregon.—The novel feature in this machine is the feed table, which is placed upon the forward end of the frame and is secured in place adjustably by bolts, so that it may be moved forward or back, according as the stalks of the grain may be longer or shorter. To the table are pivoted two feed rollers, the lower one of which is ribbed or corrugated. The journals of the upper feed roller revolve in slots, so that it may rise to adjust itself to the thickness of the grain, and it is held down to its work by spiral springs. The feed table is also provided with an endless belt carrier for feeding purposes.

IMPROVED ROTARY STALK CUTTER.

Orson D. Johnson and John F. Bracket, Mount Pulaski, Ill., assignors to themselves and C. C. Mason, of same place.—This is a new machine for cutting stalks into pieces, so that they may be plowed under to fertilize the soil, and not impede the operation of plowing. A drum presses the stalks down and then knives arranged in slots in the periphery of the former are vibrated longitudinally to cut off the stalks. Attachments are provided for raising the drum when desired.

IMPROVED PEANUT CLEANER.

Daniel R. Rivers, Centerville, Tenn.—This consists of a hopper and cylindrical perforated sheet metal revolving screen, having longitudinal rows of large holes to let the stones and dirt out.

NEW WOODWORKING AND HOUSE AND CARRIAGE BUILDING INVENTIONS.

IMPROVED SPRING BACK FOR WAGON SEATS.

John W. Wood, Owatonna, Minn., assignor to himself and C. Schoen, of same place.—This is an improvement in springs for connecting the back of a wagon seat with the arms. The back and arms have hitherto been connected by a curved plate spring, or the arm itself has been made in the shape of a coiled plate spring, or the arm has been made movable, being held by a surrounding coiled spring. These springs are found in practice to be often fractured in frosty weather by a sudden jar, and in order to avoid this, as well as to make a cheaper spring, the present inventor constructs this connection of rubber, making it flat at each end, so that it may be readily fastened between plates at the arm and back, and preferably make it stouter in the middle, to lessen its liability to break at that point.

IMPROVED AUTOMATIC SEWER TRAP.

John Peter Schmitz, San Francisco, Cal.—A vertical perforated partition divides the cesspool into two compartments. The street gutters discharge into one compartment, and the water passes through the perforations into the other, leaving the solid matters behind. A weighted valve closes the mouth of the sewer, but it is opened (to allow escape of water) by a float which is raised when the water accumulates in the second compartment.

IMPROVED SAW SET.

Christopher Heinen, Leavenworth, Kan.—This improves the construction of the saw set for which letters patent were granted to the same inventor August 8, 1876, to enable the upper die to be more firmly held in place, and the saw plate to be more easily and accurately guided to the dies. The general construction is such that the saw plates are securely and firmly held, and will be moved squarely across the dies, so that the teeth may be accurately and evenly set.

IMPROVED WAGON END GATE.

Theodore L. Block, Sidney, Ill.—A cross bar retains this gate rigidly in position until, by lifting and withdrawing the bar, the gate sections fold in the center, and are, on detaching the side hooks, readily taken off for dumping or removing the load. The pressure of the load on the inside of the end gate assists the taking off of the same, as it facilitates the swinging of the gate sections on their hinge connection. The gate may thus be easily locked to the wagon body and detached with great convenience, without requiring separate cross rods or other detachable fastening devices.

IMPROVED DOOR CHECK.

Hiram Shunk, Davenport, Iowa.—This is a stop for holding doors or shutters open or shut; and it consists of a spring formed from a ribbon of steel, the extremities of which are attached to the wall, and the center portion bent into a threefold loop forming a spring clamp, which engages with the outside of a loop or knob attached to the door, retaining it with sufficient force to prevent the door or shutter from closing by a pressure of wind or other slight cause. The clasp thus formed presents rounded ends, which readily slip over the loop attached to the door, and press the smaller part of it with a force which retains the door, but which may be overcome by pulling the door. The ends of the ribbon forming the clasp are formed into ears, through which screws pass for securing it to the wall. The stop not only answers the purpose of holding the door, but it also serves as a buffer which prevents the door from striking the wall as it is thrown open.

NEW MECHANICAL AND ENGINEERING INVENTIONS.

IMPROVED HAT-BRIM-LURING MACHINE.

Ambrose Hill, Yonkers, N. Y.—This is an improved machine for luring the brims of hats, which shall be so constructed as to enable the work to be done well, and at the same time very quickly; and it consists in the combination of a hinged frame, spring, shaft, pulley, fly wheel, luring wheel, connecting rod, and treadle with each other, and with the frame for luring hat brims; and in the combination of the adjusting bar, the adjustable rest bar, and the detachable rest with each other, and with the frame for supporting hat brims while being lured.

IMPROVED MOTIVE POWER.

William W. Corey, Lisbon, N. H.—This is an improved mechanism for applying power to a hand car and to other mechanisms; and it consists in an improved motive power, formed by the combination of the four levers and the four connecting rods with each other and with the machinery to be driven. The form of the levers may be varied, as the particular use to which the power is to be applied may require.

IMPROVED RAILROAD SWITCH.

Ferdinando Luchini, Natchitoches, La.—In this switch the switch rail is operated by devices located upon the car. When the car is upon the main track and is going in the direction in which the switch rails point, the flange of the car wheels will push back the switch rail. When the car is passing from the main track to the side track, or from the side track to the main track, no movement of the switch rail is required.

IMPROVED DUST GUARD FOR SEWING MACHINES.

Albert A. Capeling, Rochester, N. Y.—This invention consists in an improved guard, cover, or case for the works of sewing machines, more especially for the Howe, Weed, and other machines having the stitch regulator located underneath the table. The guard completely encloses the works, and has a spring-closed door for permitting access to the regulator. The driving band runs through eyeleted openings.