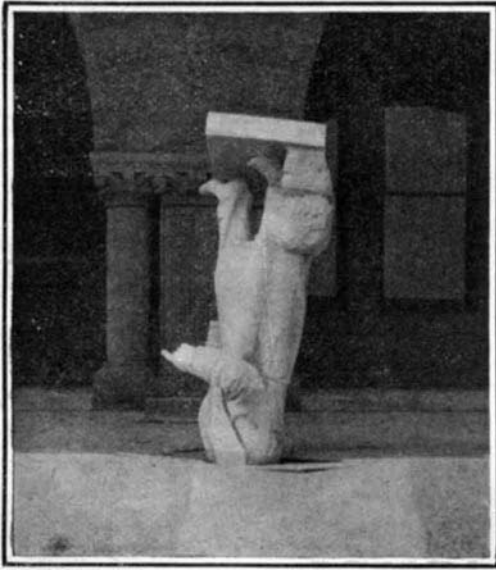


when the first impulse is single, or, if compound, the varying impulses seem to be merged into one severe shock, then this initial shock may be followed by one, two, or three others; they rapidly grow weaker and wane into imperceptible tremors. That is what the San Francisco earthquake did. There were from twenty-five to thirty impulses. At the students' observatory at Berkeley, from April 18 to 26, inclusive, thirty-two tremors were recorded, the highest intensity registered according to the Rossi-Forrel scale being 5, and the longest duration being eight seconds.

After a careful examination of the business district of San Francisco, some of the best architects and structural engineers have come to the conclusion that Class



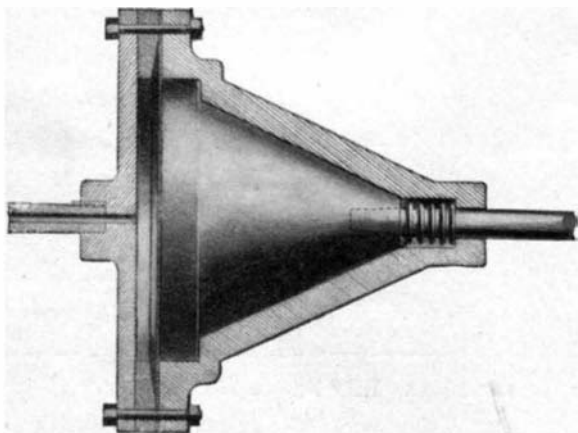
THE STATUE OF AGASSIZ IN ITS PRESENT POSITION.

A buildings can be made fire-proof and earthquake-proof. The Merchants' Exchange Building, the Claus Spreckels Building, the Kohl (formerly Hayward) Building, the Grant Building, the Chronicle Building, the St. Francis and Fairmount Hotels, show that a city can be built of structures that will come almost unscathed out of such an ordeal as the earthquake and fire that recently laid San Francisco waste. A strictly Class A building is one into the construction of which wood does not enter.

The finest buildings of the city, though gutted of everything that was not steel, concrete, granite, or marble, are still structurally sound. The principal ones standing are the Merchants' Exchange Building, the Mills Building, the Kohl Building, the Crocker Building, the Union Trust Building, the United States mint, the new United States post office, the James Flood Building, the Hotel Hamilton, the St. Francis Hotel and the Hotel Alexander next to it; the Shreve Building, the Claus Spreckels Building (the tallest building in the city), the Mutual Savings Bank Building, opposite to it; the new fifteen-story Chronicle Building, the Sloane Building and the Telephone Company's building on Bush Street. The Pacific Mutual Life Building and the great Fairmount Hotel are structurally sound. The Appraisers' Building on Washington and Battery Streets, though surrounded by ruins, was undisturbed by earthquake or fire.

#### AN IMPROVED ADJUSTABLE CLUTCH.

Pictured in the accompanying engraving is a clutch of such construction that it can be very accurately adjusted for transmitting various powers. The clutch is a friction clutch of the cone type, and its chief novelty lies in the fact that it is operated by hydraulic pressure, the water being admitted to the clutch through a hollow shaft. Carried by the other shaft is a cone formed with a step or annular shoulder at its base. Fitted over the cone is a casing formed with a recess to admit this shoulder. At the apex of the cone another recess is formed in the casing to receive a coil spring which presses against the cone and holds it clear of the casing. The cone shaft passes freely through an opening in the casing. Attached to the opposite end of the casing is a steel diaphragm. Over



HYDRAULICALLY OPERATED FRICTION CLUTCH.

this diaphragm a ring is placed, and it serves to space the diaphragm from the rear cover plate of the clutch, which is bolted to a flange of the casing. A chamber is thus formed between the diaphragm and the plate, and this chamber communicates through a port in the plate with the hollow shaft of the clutch. The plate is keyed to this shaft, so that when the latter turns it carries with it the diaphragm and the cone casing, but normally it moves independently of the other shaft and its cone. However, when water is admitted into the chamber, it flexes the diaphragm against the cone, firmly seating the latter in the casing, and thus coupling the shafts together. The frictional engagement of the cone and casing may be easily regulated by controlling the pressure of the water. The inventor of this improved clutch is Mr. Rutgers S. Kasson, of 1306 Delaware Avenue, Wilmington, Del.

#### The International Aeronautic Cup.

We have been able to obtain some particulars as to the engagements which have been entered at the Aero Club of France for the International Aeronautic Cup. This event has been founded by Mr. James Gordon Bennett and bids fair to be of exceptional interest, seeing that a number of balloons of different types and coming from several countries of Europe as well as from America are to be represented. The list of engagements has already closed at the Aero Club. Among the balloons which are to take part in the event we note the following: From Germany we have two entries from the aeronautic club known as Deutscher Luftschiffer Verein. The first is Baron von Hewald, of Berlin, who has a record of seventeen balloon ascensions, and will pilot a large balloon. Second comes M. Hugo (an assumed name) who has already made fifty-nine ascensions. Belgium enters the ranks under the auspices of the Aero Club de Belgique. M. Van den Driesche, who distinguished himself in different events held in Belgium last year, will mount the "Ojouki," a balloon of 2,500 cubic yards, made of China silk. The Spanish champions are J. F. Duro, the winner of the Pyrenees Cup; Capt. Kindelau, winner of the Madrid concourse; and Don Esteban Gutierrez, of Salamanca. The Spanish aeronauts will have three balloons of 2,300 cubic yards. Italy is represented by Alfred Vonwiller, a member of the Societa Aeronautica Italiana, and a well-known champion, having made one of the most recent passages across the Channel and several other fine performances. He will mount a balloon of French silk, of 1,800 cubic yards, the "Elfe." As regards the English, American, and French entries we will give the details very shortly. The event is to take place on the 30th of September, 1906, and will no doubt be one of great interest as well as an aid in the development of aeronautics.

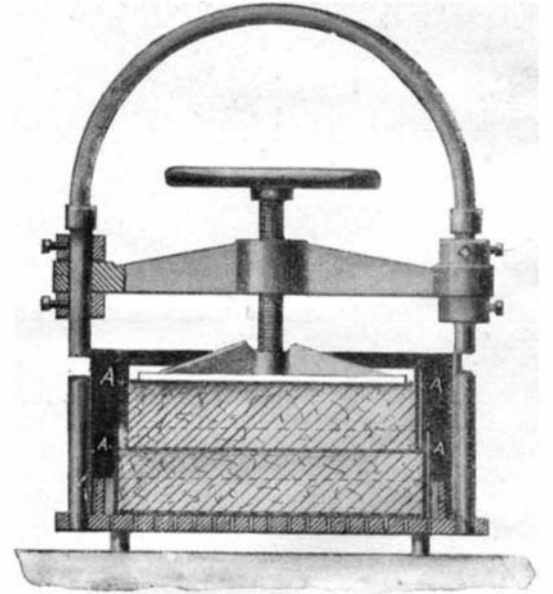
#### A Prize for an Automobile Road Indicator.

Baron Henri de Rothschild has offered the sum of \$200 to the Paris Academy of Sports to establish a prize for the best form of "odotachymeter" or instrument for use on an automobile or any other kind of car for indicating at the same time the distance which has been traveled over and the instantaneous speed at any given moment. A concourse of such devices is to be held by the academy and the above amount will be awarded in one or several prizes. The Technical Committee of the French Automobile Club has been charged with drawing up the regulations for the concourse and naming the jury. According to these rules the international concourse will be held on the first of May and the following days. The prizes will be awarded for one or several apparatus which best answer the conditions of the tests. The competitors are to furnish a drawing or detailed description of the apparatus and also an actual instrument mounted upon an automobile of a type which is accepted by the Commission.

#### AN IMPROVED HAND-OPERATED MEAT PRESS.

The accompanying engraving illustrates a new hand press which is adapted particularly for pressing meat, although it can also be used for pressing fruit and vegetables. Meat presses as heretofore constructed have usually been made with but a single meat box. The construction here illustrated comprises a series of meat boxes, each fitting into the one below, so that the device can be used for compressing any desired amount of meat within the limits of the press by simply using the required number of meat boxes. Furthermore, by the use of different boxes, a number of different kinds of meat can be pressed at the same time. The boxes with the meat pressed therein can be placed in an ice box, or the press itself can be provided with an ice-holder, so that the meat can be left to cool under pressure. The press is of simple construction, comprising a perforated base supported on four short legs, and carrying two upright standards which are braced together at their upper end by an arched coupling member. A crosshead is mounted on these standards and can be secured at any desired height by means of collars adjustable on the standards. Threaded through the crosshead is a hand-screw, which is adapted to press

the press-plate down onto the meat. The boxes for the meat are so made that they can be readily taken apart when desired, to remove the meat. Each box consists of two angle pieces, which are fastened together at opposite corners by hinge pins. The boxes have no bottoms, but perforated plates are placed between the layers of meat. Each box is formed with grooves at opposite corners, which serve as guides for the box above; also with a series of perforations, A, through which the water and grease expressed from the meat in the box above may pour out. Vertical walls on the base serve to confine these liquids so that

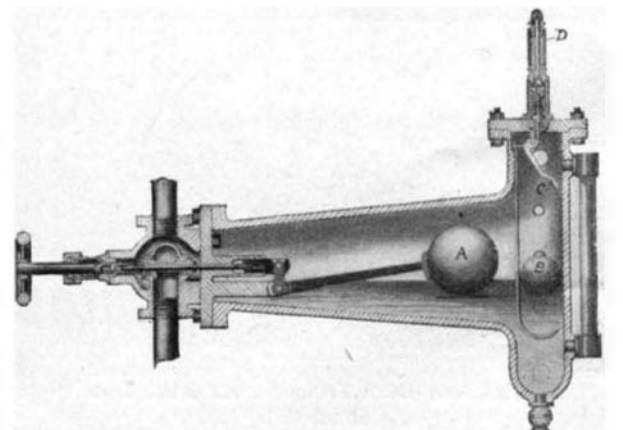


A MULTIPLE MEAT PRESS.

they will pour through the perforations in the base-plate. When it is desired to cool the meat in the press, a large box is placed about the meat boxes, as shown in the illustration, and this is filled with ice. Mr. Jacob Spengler, of 515 Tenth Street, North Great Falls, Mont., is the inventor of this improved meat press.

#### WATER-FEED REGULATOR WITH AUTOMATIC ALARM.

A patent has recently been granted to Mr. H. W. Adams, of Fargo, North Dakota, on an apparatus for regulating the supply of water to boilers, which is provided with both high and low water signal devices. Our illustration shows a section of the improved apparatus. The main casing of the regulator is formed with a horizontal body portion ending in a vertical head. The latter is provided with the usual steam and water connections, and carries the gage-glass and gage-cocks. Within the main body of the casing is a spherical float, A, attached to the longer arm of a bell-crank lever. This lever is fulcrumed to a bracket, and its shorter arm engages a slide. Connected by a threaded stem with this slide is a valve, which operates to close or open the feed-pipe of the boiler. The position of the valve can be regulated by screwing the stem into the slide. This is done by means of a short rod which has pin-and-slot connection with the stem, as clearly shown in the engraving. Under the float, A, is a plate, secured thereto, which serves to prevent the float from jumping or churning under the action of the feed pump. The signal float, B, is placed in the vertical head of the regulator, and at the upper end of the chamber is a bell-crank lever, C. Attached to the shorter arm of the lever is a rod, which serves to retain the float, B, in its proper position. At its lower end this rod is curved under the float. When the water falls dangerously low in the chamber, the float, B, will rest on the curved end of the rod, and swing the lever, C, on its fulcrum. A boss on the latter will then lift the valve, admitting steam to the whistle, D. The engineer will thus be signaled that there is something the matter with his feed pump or that the regulator valve has jammed. Similarly, when the water rises too high in the regulator chamber, the float, B, will strike the longer arm of the lever, C, lifting the whistle valve and sounding the danger signal.



WATER-FEED REGULATOR WITH AUTOMATIC ALARM.